Oracle® Fusion Middleware

Developing Portals with Oracle WebCenter Portal and Oracle JDeveloper

11*g* Release 1 (11.1.1.9.0)

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Documentation for developers that explains how to build and deploy Portal Framework applications, portlets, portal assets, and custom portal components using Oracle WebCenter Portal and Oracle JDeveloper.

Oracle Fusion Middleware Developing Portals with Oracle WebCenter Portal and Oracle JDeveloper, 11*g* Release 1 (11.1.1.9.0)

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Preface

This guide explains how to build portal applications and custom components using WebCenter Portal Framework and JDeveloper, and provides in-depth information for all of the following tasks:

- How to set up and prepare your development environment for portal development, including iterative and round-trip development.
- How to build, deploy, and manage a Portal Framework application.
- How to secure, administer, monitor, and maintain a Portal Framework application and all of its associated components.
- How to develop custom navigation user interfaces for a portal.
- How to prepare an application for, configure, and integrate Oracle WebCenter Portal services.
- How to integrate content into a Portal Framework application.
- How to deliver personalized content to a Portal Framework application.
- How to plan, build, deploy, and manage portlets for a Portal Framework application.

> **Note:** For the portable document format (PDF) version of this manual, when a URL breaks onto two lines, the full URL data is not sent to the browser when you click it. To get to the correct target of any URL included in the PDF, copy and paste the URL into your browser's address field. In the HTML version of this manual, you can click a link to directly display its target in your browser.

Audience

This manual is written for all of the following developers:

- The developer who wants to build a WebCenter Portal Framework application or integrate Oracle WebCenter Portal functionality to their application.
- The component developer, who wants to build portlets from Oracle WebCenter Portal services.

This guide also assumes that the audience has already read the *Fusion Developer's Guide for Oracle Application Development Framework* and is familiar with the following technologies:

- Java

- Oracle JDeveloper
- JavaServer Faces
- Oracle Application Development Framework (Oracle ADF) (purpose, basic architecture, basic development skills)
- Oracle ADF Faces components
- Oracle WebLogic Server

Documentation Accessibility

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Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info` or visit `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs` if you are hearing impaired.

Related Documents

For more information, see the following documents in the Oracle Fusion Middleware 11*g* Release 1 (11.1.1.9.0) documentation set or on Oracle Technology Network (OTN) at `http://www.oracle.com/technology/index.html`.

- *Administering Oracle WebCenter Portal*
- *Building Portals with Oracle WebCenter Portal*
- *Using Oracle WebCenter Portal*
- *Error Messages Reference*
- *Fusion Developer's Guide for Oracle Application Development Framework*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

What's New?

The following topics introduce the new and changed features in Oracle WebCenter Portal 11*g* Release 1, and provide pointers to additional information:

- System Requirements and Specifications
- New and Changed Features for 11g Release 1 (11.1.1.9.0)
- New and Changed Features for 11g Release 1 (11.1.1.8.3)
- New and Changed Features for 11g Release 1 (11.1.1.8.0)

System Requirements and Specifications

For system and platform-specific information for Oracle Fusion Middleware products for 11*g* Release 1, refer to *Oracle Fusion Middleware System Requirements and Specifications*. That guide describes how to find out what is certified and how to verify the requirements of the certification. Your system administrator performs these tasks prior to installing Oracle WebCenter Portal.

New and Changed Features for 11*g* Release 1 (11.1.1.9.0)

WebCenter Portal 11*g* Release 1 (11.1.1.9.0) includes the following new and changed features:

- Support for running WebCenter Portal on cloud technologies:
  - Portal on-premise: WebCenter Portal deployment in a customer data center.
  - Oracle Private Cloud: provisioning and running WebCenter Portal on Oracle MWaaS; that is, using Oracle EM Cloud Control.
  - Oracle Public Cloud: provisioning and running WebCenter Portal on Oracle Java Cloud Service (JCS).
- Support for migration of the WebCenter Portal and Portal Framework application content from the Folders_g folder service to the FrameworkFolders folder service. See the "Migrating Folders_g to FrameworkFolders" appendix in *Administering Oracle WebCenter Portal*.
- Support for upgrading a pre-11.1.1.8.0 portal to the current release. See the "Upgrading a Pre-11.1.1.8.0 Portal" section in *Building Portals with Oracle WebCenter Portal*.
- Addition of the `childCreation` property for the `Show Detail Frame` component to specify when the children (contents) of the `Show Detail Frame` component are created, thus reducing processing time. See `childCreation` in Table B–7, " Attributes of a Show Detail Frame Component".

- Support for image renditions in Content Presenter display templates. See Section 27.3.6, "Using Image Renditions in Content Presenter Display Templates.".

New and Changed Features for 11*g* Release 1 (11.1.1.8.3)

WebCenter Portal 11*g* Release 1 (11.1.1.8.3) included the following new and changed features:

- Support for four new page templates that provide efficiency and performance enhancements over the existing page templates. See "New Page Templates."
- Support for the FrameworkFolders component that provides a scalable, high-performing folder service from Oracle WebCenter Content as an alternative to Folders_g. See "FrameworkFolders Support."

New Page Templates

Four new page templates provide efficiency and performance improvements over the existing page templates. The files included are:

- Four *page templates*: Skyros Side Navigation v2, Skyros Side Navigation (Stretch) v2, Skyros Top Navigation v2, and Skyros Top Navigation (Stretch) v2
- One *skin*: Skyros v2

  This is the preferred skin for the new page templates. Do not attempt to use the new Skyros v2 skin with existing page templates. Likewise, do not attempt to use the new page templates with the existing skins.
- Two *task flows*: Portal Side Navigation and Portal Top Navigation

  These task flows implement the navigation in the page templates, either in a side pane or as tabs along the top of a portal. The styling of the navigation in these task flows relies on the CSS in the skin file available in this patch. If you want to use these task flows in a page template that uses a different skin, be aware that the navigation may not look as expected due to CSS mismatches in the skin. However, if you copy and paste the navigation sections from the new Skyros v2 skin source code into your skin source code, you can achieve the expected results.

With WebCenter Portal 11*g* Release 1 (11.1.1.9.0), these files are pre-installed, and you will see them on the **Shared Assets** page, which is available if you have the permissions of the `Administrator` or `Application Specialist` role:

Asset Type	File Names

Page Templates	`pageTemplate_Skyros_Side_Navigation_Stretch_v2.ear`
	`pageTemplate_Skyros_Side_Navigation_v2.ear`
	`pageTemplate_Skyros_Top_Navigation_Stretch_v2.ear`
	`pageTemplate_Skyros_Top_Navigation_v2.ear`

Skins	`skin_Skyros_v2_Skin.ear`
Task Flows	`taskFlow_Portal_Side_Navigation.ear` `taskFlow_Portal_Top_Navigation.ear`

Perform the following steps to use the new page templates:

1. To set a new default page template for pages in the Home portal and all new portals (when the portal's template does not specify that a particular page

template must be used), see the "Choosing a Default Page Template" section in *Administering Oracle WebCenter Portal*.

2. To change the page template used by an individual portal, see the "Changing the Page Template for a Portal" section in *Building Portals with Oracle WebCenter Portal*.
3. To change the preferred skin used by a page template, see the "Setting the Preferred Skin for a Page Template" section in *Building Portals with Oracle WebCenter Portal*.

For more information, see the "Working with Page Templates" chapter in *Building Portals with Oracle WebCenter Portal* and Chapter 11, "Developing Page Templates."

FrameworkFolders Support

Previously, Oracle WebCenter Portal supported only Folders_g. WebCenter Portal 11*g* Release 1 (11.1.1.8.3) enables *new* installations of Oracle WebCenter Portal to be integrated with FrameworkFolders. Existing installations of Oracle WebCenter Portal patched to 11*g* Release 1 (11.1.1.8.3) *must* continue to use Folders_g.

The FrameworkFolders component provides a scalable hierarchical folder interface for accessing and organizing repository content, and is the recommended enterprise folder service for Content Server.

New and Changed Features for 11*g* Release 1 (11.1.1.8.0)

WebCenter Portal 11*g* Release 1 (11.1.1.8.0) included the following new and changed features:

- Terminology changes:

Prior Releases	11*g* Release 1 (11.1.1.8.0)
WebCenter Portal: Spaces	WebCenter Portal
space	portal
space template	portal template
resource	asset

- End-User Experience
  - Updated profile user interface that includes improved organization of profile information, click to edit, and clear profile photo functionality. See the "Managing Your Profile" chapter in *Using Oracle WebCenter Portal*. Additional documentation for the rich user profile is referenced under Portal Builder, Administration, and Development Environment.
  - Improved search experience (supported with Oracle SES 11.2.2.2) that includes faceted search and document thumbnails. See the "Searching for Information" chapter in *Using Oracle WebCenter Portal*.
- Portal Builder
  - Simplified portal creation that includes in-place page creation. See the "Creating and Building a New Portal" chapter in *Building Portals with Oracle WebCenter Portal*.
  - Redesigned portal edit and administration user interface (Portal Builder) that consolidates tasks into fewer steps. See the "Editing a Portal" and

"Administering a Portal" chapters in *Building Portals with Oracle WebCenter Portal*.

  - Simplified page creation and editing: Web (for editing) and Data (for managing) views, inline resource catalog (with support for component drag-and-drop onto a page), and Select view. See the "Working with Portal Pages" chapter in *Building Portals with Oracle WebCenter Portal*.
  - Automatic update of portal navigation as new pages are created. See the "Creating a Page or Subpage in an Existing Portal" section in *Building Portals with Oracle WebCenter Portal*.
  - "Lazy provisioning" of tools—WebCenter Portal configures the back-end server at first use of a tool rather than at portal creation to speed the successful creation of a new portal. See the "About Creating a New Portal" section in *Building Portals with Oracle WebCenter Portal*.
  - Hierarchical page support (subpages). See the "Creating Pages or Subpages in a Portal" section in *Building Portals with Oracle WebCenter Portal*.
  - Updated profile user interface that includes improved organization of profile information, click to edit, and clear profile photo functionality; new component properties for improved control of people connections and activity graph components. See the "Adding Activity Graphs and Recommendations to a Portal," "Adding Connections to a Portal," and "Adding Profiles to aPortal" chapters in *Building Portals with Oracle WebCenter Portal*. Additional documentation for the rich user profile is referenced under End-User Experience, Administration, and Development Environment.
  - Device Settings that control how your portal pages render on different devices, such smart phones, tablets, and desktop browsers. Page variants can be created to target and optimally render a portal on specific groups of devices like iOS phones, iOS tablets, and others. See the "Administering Device Settings in a Portal" section, the "Managing Device Groups for a Portal" chapter, and the "Creating a Page Variant for a Device Group" section in *Building Portals with Oracle WebCenter Portal*. Additional documentation for mobile support is referenced under Administration and Development Environment.
  - Responsive Content Presenter templates that provide an example of how you can use Content Presenter and CSS3 media queries to produce a responsive layout that adjusts to the width of the browser (for example, on smart phones, tablets, and desktop browsers). See the "Using Responsive Templates" section in *Building Portals with Oracle WebCenter Portal*. Additional documentation for mobile support is referenced under Development Environment.

- Development Environment
  - Updated profile user interface that includes improved organization of profile information, click to edit, and clear profile photo functionality; new component properties for improved control of people connections and activity graph components. See Chapter 37, "Introducing the People Connections Service," Chapter 39, "People Connections Task Flow Binding Parameters," and Chapter 46, "Integrating the Activity Graph." Additional documentation for the rich user profile is referenced under End-User Experience, Portal Builder, and Administration.
  - Developers can use Expression Language (EL) to retrieve information about Device Settings. Device Settings control how your portal pages render on different devices including smart phones, tablets, and desktop browsers. See

Section G.15, "EL Expressions Related to Device Settings." Additional documentation for mobile support is referenced under Portal Builder and Administration.

  - Responsive Content Presenter templates that provide an example of how you can use Content Presenter and CSS3 media queries to produce a responsive layout that adjusts to the width of the browser (for example, on phones, tablets, or personal computers). See Section 27.3.4, "Using Responsive Templates" and Section 27.3.5, "Extending Responsive Templates." Additional documentation for mobile support is referenced under Portal Builder.
  - Simplified custom shared library development and deployment. WebCenter Portal provides a new JDeveloper template that enables you to build custom components, such as task flows, data controls, and managed beans and deploy them in shared libraries directly to the WebCenter Portal server. See Chapter 55, "Developing Components for WebCenter Portal Using JDeveloper."

- Administration
  - Simplified WebCenter Portal administration that includes a power user oriented experience with familiar concepts for legacy WebCenter Portal customers. See the "Managing Portals in Portal Builder Administration" part in *Administering Oracle WebCenter Portal*.
  - New profile configuration settings that include properties to specify whether to show the new or legacy profile user interface and to specify profile synchronization settings. See the "Managing People Connections" chapter in *Administering Oracle WebCenter Portal*. Additional documentation for the rich user profile is referenced under End-User Experience, Portal Builder, and Development Environment.
  - Device Settings that control how your portal pages render on different devices, such as smart phones, tablets, and desktop browsers. Page variants can be created to target and optimally render a portal on specific groups of devices like iOS phones, iOS tablets, and others. See the "Deploying Devices and Device Groups" section, the "Creating a Page Variant of a System Page for Device Groups" section, and the "Administering Device Settings" chapter in *Administering Oracle WebCenter Portal*. Additional documentation for mobile support is referenced under Portal Builder and Development Environment.
  - Impersonation, which allows a privileged user to impersonate another user for the purposes of verifying the other user's experience in WebCenter Portal and troubleshooting unexpected results. See the "Managing Impersonation" chapter in *Administering Oracle WebCenter Portal*.
  - Improved portal lifecycle tools that enable export/import and backup/recovery of one or more portals with minimal downtime. See the "Deploying Portals, Templates, Assets, and Extensions" and "Managing WebCenter Portal Backup, Recovery, and Cloning" chapters in *Administering Oracle WebCenter Portal*.
  - Integrated Oracle WebCenter Portal's Pagelet Producer user interface within WebCenter Portal's administrative user interface to make system administrators aware of the existence of Pagelet Producer pagelets and to allow them to make these pagelets available to end users. Integrating the UIs also provides Pagelet Producer developers to easily navigate from WebCenter Portal where they see the pagelets to the Pagelet Producer Admin UI so they can create new or edit existing pagelets. See the "Managing the Pagelet Producer" chapter in *Administering Oracle WebCenter Portal*.

  - New page performance analyzer that shows you how long individual components take to display on a portal page, as well as the overall time taken to display a page. This new tool is useful to developers who are performing first level performance analysis, customers who build their own pages, and any user who customizes pages in WebCenter Portal. See the "How to Identify Slow Page Components" section in *Administering Oracle WebCenter Portal*.

- Restructured documentation library according to personas and their roles in WebCenter Portal:

  - *Developing Portals with Oracle WebCenter Portal and Oracle JDeveloper* (this guide) covers information needed by a *developer* who primarily works with JDeveloper to provide support for both portals and WebCenter Portal Framework applications.

  - *Using Oracle WebCenter Portal* covers information needed by a *knowledge worker* who typically uses WebCenter Portal to contribute and review content, participate in social interactions, and leverage the Home portal to manage her own documents and profile.

  - *Building Portals with Oracle WebCenter Portal* covers information needed by an *application specialist* who works in Portal Builder to create and administer portals, their structure (hierarchy of pages, navigation, security), and their content (components on a page, layout, behavior, and so on).

  - *Administering Oracle WebCenter Portal* covers information needed by a *system administrator* who fields requests from IT employees and business users to set up new machines; clone or back up existing applications systems and databases; install patches, packages, and applications; and perform other administration-related tasks.

  For more information, see "Who's Who."

Who's Who

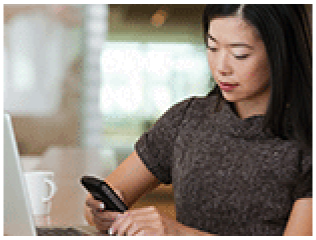
The WebCenter Portal documentation is organized so that the tasks in a particular guide address a specific user *persona*. Each persona is associated with a set of skills required to work with WebCenter Portal, from basic to advanced. For example, this guide is aimed at the *Developer* persona.

This preface introduces you to the WebCenter Portal personas and describes the ways in which they might interact with WebCenter Portal. Each persona is assigned a default role provided out-of-the-box with WebCenter Portal. The default roles are given a unique set of permissions appropriate for the work that each persona will typically do. Note that you can modify these default roles or configure new roles to meet the unique needs of your organization.

The people who interact with WebCenter Portal typically work together as a team that is comprised of the following personas:

- Knowledge Worker
- Application Specialist
- Web Developer
- Developer
- System Administrator

Knowledge Worker



Karen is a *knowledge worker* who typically uses WebCenter Portal to contribute and review content, participate in social interactions, and leverage the Home portal to manage her own documents and profile.

At the application level, Karen has permissions such as those granted to the default `Authenticated-User` role, which may be customized for the specific needs of the organization. At the portal level, the portal `Moderator` will likely assign Karen the `Viewer` or `Participant` role, or a custom role that offers a similar set of permissions.

For more information about roles and permissions, see the "About Roles and Permissions for a Portal" section in *Building Portals with Oracle WebCenter Portal*.

Knowledge Worker Tasks in WebCenter Portal

Tasks that are typical of a knowledge worker like Karen include:

- Connecting to and collaborating with other WebCenter Portal users by sharing information, files, and links; and by interacting through instant messaging, mail, message boards, discussions, wikis, and blogs
- Uploading, sharing, and managing documents stored in WebCenter Content
- Joining a team or project portal
- Keeping up with changes in WebCenter Portal by receiving notifications when content is updated, exploring recommendations from other users, viewing the activities of the portals she is a member of and users she's connected to, viewing announcements, taking polls, and monitoring WebCenter Portal RSS feeds
- Staying organized through the use of favorites, notes, calendars, lists, links to portal objects, and tags
- Viewing and responding to worklist items

As Karen becomes more familiar with the functionality available in WebCenter Portal, she may begin to perform more advanced tasks, such as creating portals. As a more advanced knowledge worker, her role may evolve to overlap with application specialist tasks.

Information targeted for knowledge workers like Karen is in *Using Oracle WebCenter Portal*. Advanced tasks that overlap with those of an application specialist are covered in *Building Portals with Oracle WebCenter Portal*.

Application Specialist

Ari is an *application specialist* who works in Portal Builder to create and administer portals, their structure (hierarchy of pages, navigation, security), and their content (components on a page, layout, behavior, and so on). In a typical project, Ari coordinates the efforts of Karen (knowledge worker), Wendy (web developer), and Dave (developer).

At the application level, Ari has permissions such as those granted to the default `Application Specialist` role, which may be customized for the specific needs of the organization. In a portal that Ari creates, he performs actions available to the `Moderator` role to manage the portal.

For more information about roles and permissions, see the "About Roles and Permissions for a Portal" section in *Building Portals with Oracle WebCenter Portal*.

Application Specialist Tasks in WebCenter Portal

Tasks that are typical of an application specialist like Ari include:

- Planning and creating new portals
- Editing and administering the portals he owns
- Creating and building portal pages using the page editor (Composer) and the resource catalog to add and configure page components
- Creating and managing portal assets, tools, and services
- Managing shared assets and portal templates across all portals

Information targeted for application specialists like Ari is in *Building Portals with Oracle WebCenter Portal*. To work with his personal view of the Home portal, Ari will also refer to *Using Oracle WebCenter Portal*.

Web Developer

Wendy is a *web developer* who focuses on delivering a consistent, branded look and feel to all portals. Wendy provides graphics designs and HTML markup from which Ari (application specialist in Portal Builder) or Dave (developer in JDeveloper) can create content or page style templates, skins, and so on. Once these assets are created, Ari can leverage them to create portal pages. Wendy typically does not interact with WebCenter Portal directly.

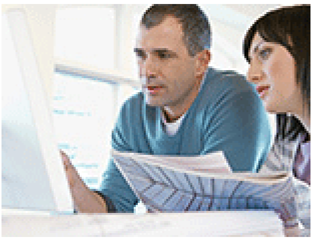
Web Developer Tasks in WebCenter Portal

Tasks that are typical of a web developer like Wendy include:

- Developing a corporate portal look and feel
- Designing new portal page templates

Information targeted for web developers like Wendy is in the "Creating a Look and Feel for Portals" chapter in *Building Portals with Oracle WebCenter Portal*.

Developer



Dave is a *developer* who provides support for both portals and WebCenter Portal Framework applications:

- **Portals (Portal Builder)**

Dave is primarily responsible for developing components (such as task flows, page templates, and content templates), which are published and leveraged by Ari (the application specialist). Dave primarily works with JDeveloper and leverages the WebCenter Portal Extension/WebCenter Portal Service Extension projects.

- **Framework Applications**

  Dave primarily works with JDeveloper to develop WebCenter Portal Framework applications. Once he has developed the application, he can package it as an EAR file and deploy it on the application server. In a typical environment, Dave would have JDeveloper configured with a SCM system and be working within a team with automated build and deploy processes.

Developer Tasks

Tasks that are typical of a developer like Dave include:

- Building and maintaining WebCenter Portal Framework applications
- Developing custom assets, like page templates and navigation components for portals in WebCenter Portal
- Developing Java portlets
- Developing and deploying task flows, managed beans, and other custom components
- Developing custom personalization components
- Maintaining the source control system
- Maintaining a build system

Information targeted for developers like Dave is in *Developing Portals with Oracle WebCenter Portal and Oracle JDeveloper*.

System Administrator

Syed is a *system administrator* who fields requests from IT employees and business users to set up new machines; clone or back up existing applications systems and databases; install patches, packages, and applications; and perform other administration-related tasks. As the system administrator, Syed works with other tools such as Fusion Middleware Control and command line tools. He leverages Enterprise Manager to configure portal settings, and also configures integrations such as WebCenter Content and other Fusion Middleware products and Oracle applications.

In WebCenter Portal's Portal Builder, he has permissions such as those granted to the default `Administrator` role, which provides exclusive access to administer and set global options for all portals (including the Home portal).

For more information about application level roles and permissions, see the "About Application Roles and Permissions" section in *Administering Oracle WebCenter Portal*.

System Administrator Tasks

Tasks that are typical of a system administrator like Syed include:

- Uses Portal Builder administration to administer all portals (including import and export of portals) and security site-wide
- Uses Portal Builder administration to manage site-wide system pages, business role pages, and personal pages
- Uses Portal Framework application administration console to manage application-wide preferences, manage users and roles, manage assets, configure the content repository, create polls, register producers and external applications
- Leads security, taxonomy, metadata, workflow, governance
- Uses the management console for administrative functions
- Executes command line utilities for administrative functions
- Installs and configures production versions of developers' efforts
- Performs patching of the production versions and the operating system
- Creates clones and backups of the production versions
- Performs restores of production versions
- Monitors the operating system for issues with the production version
- Deploys and redeploys applications

Information targeted for system administrators like Syed is in *Administering Oracle WebCenter Portal* and *WebLogic Scripting Tool Command Reference*.

Part I

Getting Started

Part I contains the following chapters:

- Chapter 1, "Introduction to Oracle WebCenter Portal for Developers"
- Chapter 2, "Setting Up Your Development Environment"
- Chapter 3, "Working Productively in Teams"
- Chapter 4, "Preparing Your Application for WebCenter Portal Tools and Services"

1 Introduction to Oracle WebCenter Portal for Developers

This guide is the primary resource for developers using JDeveloper to create Portal Framework applications, portlets, and custom portal components.

This chapter includes the following topics:

- Section 1.1, "What Is the Purpose of this Guide?"
- Section 1.2, "What Is My Role as a WebCenter Portal Developer?"

1.1 What Is the Purpose of this Guide?

This developer's guide discusses developing Portal Framework applications, portlets, and custom portal components using Oracle JDeveloper. Many of the tasks described in this guide involve activities that require Java, CSS, Application Development Framework (ADF), Expression Language (EL), and related experience.

Major activities described in this guide include:

Setting Up Your Environment

See chapters on setting up your environment and your team environment in Part I, "Getting Started."

Building Portals with WebCenter Portal Framework

A WebCenter Portal Framework application is a standard ADF web application that includes portal features, like navigation, pages, page templates, content, and more. The chapters in Part II, "Building WebCenter Portal Framework Applications" explain how to create Framework applications and develop assets like skins, templates, and navigation components.

Several parts of this guide contain chapters devoted to working with portal pages, content, look and feel, collaborative features, and so on.

- Part III, "Customizing Your Application and Extending Customization Options" discusses creating, customizing, and editing portal pages and customizing task flows used in your portal.
- Part IV, "Integrating and Publishing Content" explains how to integrate content into your portal by connecting to content repositories and working with content display components, like Content Presenter. The part also includes chapters on integrating wikis and blogs into the portal.
- Part IV, "Integrating and Publishing Content" explains how to integrate content into your portal by connecting to content repositories and working with content

display components, like Content Presenter. The part also includes chapters on integrating wikis and blogs into the portal.

- Part V, "Enabling Communication and Collaboration" discusses integrating features like discussions, mail, and presence into the portal.
- Part VI, "Working with People Connections" explains how to integrate people connections features into the portal. People connections provide social networking tools for use in enhancing connection and communication within a project team and throughout an enterprise. It does this through a set of features that include Activity Stream, Connections, Feedback, Message Board, Profile, and Publisher.
- Part VII, "Helping Users Find Content" discusses how to add links, tags, search, and activity tracking to the portal.
- Part VIII, "Helping Users Keep Track" discusses adding features like analytics, lists, notifications, and related features to the portal.

Developing Custom Components and Extending WebCenter Portal

WebCenter Portal Framework applications can be integrated with other applications, like Seibel, Oracle E-Business Suite, and PeopleSoft. You can use JDeveloper to create custom components, like task flows and managed beans, that can be deployed to the Portal Server and used in Portal Builder. These topics are covered in the chapters of Part IX, "Extending WebCenter Portal and Portal Framework Applications."

Working with Portlets and Pagelets

Portlets provide a means of presenting data from multiple sources in a meaningful and related way. Portlets can display excerpts of other web sites, generate summaries of key information, perform searches, and access assembled collections of information from a variety of data sources. Because several different portlets can be placed on a single page, users benefit from a single-source experience even though, in reality, the content may be derived from multiple sources. See the chapters of Part X, "Working with Portlets and Pagelets," for detailed information.

Pagelets are sub-components of a Web page accessed through Pagelet Producer that can be injected into any proxied application. Any application on a Pagelet Producer resource that returns markup can be registered as a pagelet, which can then be displayed in a portal or Framework application, or any other Web application. See the chapters of Part X, "Working with Portlets and Pagelets," for detailed information.

Delivering Personalized Content

Personalization delivers targeted content based on both user and application context for Portal Framework applications, and WebCenter Portal pages using Expression Language (EL) expressions. See Part XI, "Delivering Personalized Content."

Securing Your Portal

The security chapter describes security mechanisms and features provided in a Framework application, and how you can use Oracle ADF Security to handle authentication and authorization. See Part XII, "Completing Your WebCenter Portal Application." This part also includes guidlines for creating multi-language portals.

1.2 What Is My Role as a WebCenter Portal Developer?

In some cases, a portal requires custom components that do not exist out-of-the-box or cannot easily be created with the browser-based Portal Builder. For example, design requirements might call for page templates, page styles, and skins that are branded and organized in a precise way. In this case, you may need to use ADF Faces and CSS to achieve the desired look and feel, and JDeveloper is well-suited to such development. In another use case, custom components may be required that allow for interaction between portal elements and data (for example, using ADF task flows or portlets with event handling). Many such use cases exist.

As a WebCenter Portal developer, you may be asked to create and configure:

- Custom portal extensions like task flows, data controls, and backing beans
- Portal infrastructure components like page templates and page styles
- Personalization components like custom data providers, function providers, and property set locators
- JSR 286 portlets (also called "Java portlets")
- WebCenter Portal Framework applications
- WebCenter Portlet Producer applications

Large-scale portal development projects, like intranets and extranets, require the effort of a multi-role team. The team may include user interface experts, application specialists, QA engineers, Java developers, and others who participate in the portal's overall development and maintenance. See also Section 3, "Working Productively in Teams."

2 Setting Up Your Development Environment

This chapter provides guidance and tips to help you get started using JDeveloper for WebCenter Portal development activities.

This chapter includes the following topics:

- Section 2.1, "Introduction"
- Section 2.2, "General Setup Tasks"
- Section 2.3, "Setup Tasks Specific to WebCenter Portal Framework Applications"
- Section 2.4, "Setup Tasks Specific to WebCenter Portlet Producer Applications"
- Section 2.5, "Setting Up JDeveloper for Personalization"

2.1 Introduction

This chapter distinguishes between tasks that are general and tasks that are application-specific. General tasks apply no matter what kind of application you are developing. For instance, installing JDeveloper and the WebCenter Portal Extension are general setup tasks. Other tasks described in this chapter apply only if you are developing specific kinds of applications, like WebCenter Portal Server Extension or WebCenter Portal Framework applications.

2.2 General Setup Tasks

This section describes setup tasks that do not depend on what kind of application you are developing.

- Section 2.2.1, "Installing Oracle JDeveloper"
- Section 2.2.2, "Installing the WebCenter Portal Extension for JDeveloper"
- Section 2.2.3, "Setting the User Home Directory Environment Variable"
- Section 2.2.4, "Managing the Integrated WebLogic Server"
- Section 2.2.5, "Configuring WebCenter Back-End Services"
- Section 2.2.6, "Creating Application Resource Connections"
- Section 2.2.7, "Preparing for Team Development and Source Control"

2.2.1 Installing Oracle JDeveloper

Oracle JDeveloper provides an integrated development environment (IDE) for developing portals and custom portal components. For information on obtaining and installing Oracle JDeveloper, see the Oracle JDeveloper page on OTN at:

```
http://www.oracle.com/technetwork/developer-tools/jdev/overview/index.html
```

Once JDeveloper is installed, Oracle recommends that you increase the maximum PermGen size as follows:

1. Open the following file in a text editor:

   ```
   JDEV_HOME/jdev/bin/jdev.conf
   ```

   where *JDEV_HOME* is the location where JDeveloper is installed on your machine.

2. Set `AddVMOption -XX:MaxPermSize=512`.
3. Restart JDeveloper.

2.2.2 Installing the WebCenter Portal Extension for JDeveloper

The WebCenter Portal extension is an add-in that provides JDeveloper with the complete set of WebCenter Portal capabilities and features. To install the WebCenter Portal extension:

1. Start Oracle JDeveloper.
2. If the Select Default Roles dialog displays, select **Default Role** to enable all technologies, and click **OK**.
3. If a dialog opens asking if you want to migrate settings from an earlier version, click **No**.
4. From the **Help** menu, select **Check for Updates**.
5. Click **Next** in the Welcome page of the Check for Updates wizard.

   > **Note:** If you are behind a firewall, you may need to configure a proxy server to access the extensions. From the Updates wizard, a dialog will appear in which you can enter your HTTP Proxy Server settings. Click the **Help** button in any dialog for more information. For detailed information, see the "Proxy Settings and JDeveloper" topic in the Oracle JDeveloper online help.

6. On the Source page, select **Search Update Centers**.
7. Check **Oracle Fusion Middleware Products** and **Official Oracle Extensions and Updates** and click **Next**.
8. From the generated list, search for the **WebCenter Framework and Services Design Time** extension, select it, and then click **Finish**.
9. When prompted, restart JDeveloper.

For more information on obtaining and installing WebCenter Portal, see the Oracle WebCenter Portal page on OTN at:

http://www.oracle.com/technetwork/middleware/webcenter/portal/overview/index.html

See also the *Installation Guide for Oracle WebCenter Portal*.

2.2.3 Setting the User Home Directory Environment Variable

Oracle strongly recommends that you set an environment variable for the user home directory that is referenced by JDeveloper. By setting this variable, you can avoid receiving long pathname errors that are known to occur in some circumstances.

For detailed instructions on setting this variable on Windows, Linux, UNIX, and Mac OS X operating systems, see the "Setting the User Home Directory" section in the *Installation Guide for Oracle JDeveloper*.

2.2.4 Managing the Integrated WebLogic Server

This section discusses the Integrated WebLogic Server used by JDeveloper.

- Section 2.2.4.1, "What Is the Integrated WebLogic Server?"
- Section 2.2.4.2, "Starting and Stopping Integrated WebLogic Server"
- Section 2.2.4.3, "Configuring the JVM for the Integrated WebLogic Server"
- Section 2.2.4.4, "The WebCenter Preconfigured Server Readme File"

2.2.4.1 What Is the Integrated WebLogic Server?

The Integrated WebLogic Server is a runtime service that references an instance of Oracle WebLogic Server and is bundled with JDeveloper. The Integrated WebLogic Server allows developers to run, test, and debug WebCenter Portal Framework applications from within JDeveloper.

2.2.4.2 Starting and Stopping Integrated WebLogic Server

For detailed information managing the Integrated WebLogic Server, see the topic "Deploying to Integrated WebLogic Server" in the JDeveloper Online Help. Other options, such as running in debug mode and logging into the WebLogic Server Administration Console are also covered in that section.

2.2.4.3 Configuring the JVM for the Integrated WebLogic Server

Although it is not required, you have the option of changing the default Java Virtual Machine (JVM) settings the Integrated WLS in the `setDomainEnv.sh`. This file is located in JDEV_SYSTEM_DIRECTORY/DefaultDomain/bin.

The default memory values are:

```
-Xmx512m -XX:PermSize=128m -XX:MaxPermSize=512m
```

When creating or referring to the `JDEV_SYSTEM_DIRECTORY`, keep in mind that, on a Windows platform, a WebCenter domain name cannot contain spaces, and the domain cannot be created in a folder that has a space in its path. Also, pages in Portal Framework application are not rendered if there is a space in the path to the system directory in Oracle JDeveloper. Therefore, ensure that `DOMAIN_HOME` and `JDEV_SYSTEM_DIRECTORY` paths do not contain spaces.

2.2.4.4 The WebCenter Preconfigured Server Readme File

The WebCenter Preconfigured Server Read Me file contains valuable information about how to use Integrated WLS. In addition, the file contains links to preconfigured portlet producer test pages.

> **Note:** The links to the preconfigured portlet producers only work if the portlet producers are deployed to the server. The portlet producers are not deployed by default. You must deploy them before the links will resolve. For information on deploying the preconfigured producers, see Section 2.4.1.1, "Deploying the Preconfigured Portlet Producers."

You can access the Preconfigured Server Read Me file by selecting **WebCenter Portal Preconfigured Server Readme** from the Oracle JDeveloper Help menu.

2.2.5 Configuring WebCenter Back-End Services

To use certain Oracle WebCenter Portal components, you must install schemas into a supported database. This section discusses the schema installation for Oracle, SQL Server, and DB2 databases.

For information on which databases that WebCenter supports, see the document "Oracle Fusion Middleware Supported System Configurations" on OTN.

Table 2–1 lists the schemas that are used with WebCenter Portal and the methods by which you can install them. The Repository Creation Utility (RCU) is the recommended approach for all the schemas. However, for WebCenter Portal schema, you have the option of installing with a SQL script, as explained below.

Table 2–1 Database Schema Summary

Schema	Description	Installation Method
WebCenter	To use Tag, Links, Lists, Polls, and People Connections, you must have WebCenter Portal's schema installed in your database.	▪ RCU (preferred) ▪ SQL script (On Oracle databases only. See below for details.)
Portlets	For storing customizations in portlet producers.	RCU only
Activities	For Activity Graph and Analytics products.	RCU only
Discussions/WebCenter Portal Discussions Crawler	Used as the back end for discussions and announcements.	RCU only

2.2.5.1 Installing Schemas with RCU

Oracle recommends that you use RCU to install all WebCenter database schemas. For detailed information, see the "Creating Schemas" section in the *Repository Creation Utility User's Guide*.

2.2.5.2 Installing WebCenter Portal Schema with a SQL Script

To use Tag, Links, and People Connections, you must have the WebCenter Portal schema installed in your database.

To install the WebCenter Portal schema:

1. From the **Tools** menu, select **DataBase**, and then select **SQL Worksheet**.
2. In the Select Connection Dialog you can either select an existing connection or create a new connection. If you already have a database connection for an

administrator user to your database you can select that connection. If you don't have a connection then follow the next steps to create a new connection:

1. In the Select Connection dialog, click the plus icon to create a connection.
2. Use the Create Database Connection dialog to create a connection to the database where you will create the schema. This connection is not associated to the WebCenter Portal Framework Application.

Table 2–2 Create Database Connection Dialog Settings

Setting	Recommended Value
Create Connection In	IDE Connections
Connection Name	Use any name of your choice, for example: `my_connection`.
Connection Type	Oracle JDBC
Username	SYS
Password	Enter the SYS user password.
Role	SYSDBA
Driver	thin
Host Name	Enter the server name where the database is running. For example: `myserver.example.com`.
SID	Enter the database SID, for example: `mydbl01`.
JDBC Port	Enter the database port, for example: `1521`.

3. Click **Test Connection** to verify that the connection works.
4. Click **OK** to close the Create Database Connection dialog.

2.2.5.3 Installing WebCenter Portal Schema with a SQL Script

To use Tag, Links, and People Connections, you must have the WebCenter Portal schema installed in your database.

To install the WebCenter Portal schema:

1. From the **Tools** menu, select **DataBase**, and then select **SQL Worksheet**.
2. In the Select Connection dialog, click the pencil icon to edit the connection.

> **Note:** For information on creating database connections, see Section 2.2.6, "Creating Application Resource Connections."

3. Modify the connection to use an administrator username and password, such as `SYS` (using the `SYSDBA` role) then click **OK**.
4. Click **OK** to close the Select Connection dialog.
5. From the Tools menu, choose **SQL Worksheet**.
6. Enter the following SQL statement in the SQL Worksheet panel:

```
@@JDEV_HOME/jdeveloper/jdev/extensions/oracle.webcenter.install/sql/oracle/wc_
schema.sql
```

where `JDEV_HOME` is the location where JDeveloper is installed on your machine.

7. Click the **Execute Statemen**t icon, or press **F9**, to run the script.
8. At the prompt, enter `webcenter` as the name for the schema and a password for the schema, such as `welcome1`. The name of the schema *must* be `webcenter`.
9. If prompted for the Default Tablespace and Temporary Tablespaces, re-enter the default values `users` and `temp`, then accept them.

2.2.6 Creating Application Resource Connections

Connections allow applications to access external data and services. For example, if you wish to use the Content Presenter task flow to display content from an Oracle WebCenter Content Server repository, you need to configure a connection to the repository. If you intend to consume portlets from a portlet producer, you need to configure the producer connection.

> **Tip:** A good practice is to create and test your connections once and check them into your source control system. Then, other developers on your team can check out the connections and use them. This technique also allows your team to keep in sync whenever a connection changes.

This section discusses connections and describes the different ways to access the wizards for creating new connections. See also Section 2.2.6.3, "Where Can I Learn More About Connections?."

2.2.6.1 Where Are Connections Located?

Depending on how you invoke a wizard to create a connection, connections are placed in one of the following locations:

- Under Application Resources in the Application Navigator

  Connections created here can be used in the current application only. This is the most common way to create a repository connection.

  For certain features, you can drag and drop a connection from Application Resources onto a page to create different types of task flow regions. To learn more, refer to the individual chapters on tools and services for WebCenter Portal. See

- Under IDE Connections in the Resource Palette

  Connections created here can be reused across applications. To use these connections in an application, you just have to drag and drop the connection from the Resource Palette onto the Connections node in that application.

2.2.6.2 How Do I Access the Connection Wizards?

To access a connection wizard from the New Gallery:

1. From the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **Connections**, select the type of connection you want to create, and click **OK**.

   Depending on your selection, the **Create <*Connection_Type*> Connection** dialog opens.
3. The **Create Connection in** option is set to **Application Resources** by default.

   You can select **IDE Connections** to create a connection in the Resource Palette.

To access a connection wizard from the Application Navigator:

1. Right-click the **Connections** node under Application Resources and select **New Connection**, then select the connection type from the context menu.
2. Depending on your selection, the **Create <*Connection_Type*> Connection** dialog or wizard opens.

   The **Create Connection in** option is set to **Application Resources** by default.

To access a connection wizard from the Resource Palette:

1. Click the **New** icon in the Resource Palette, select **New Connection**, then select the connection type from the context menu.
2. Depending on your selection, the **Create <*Connection_Type*> Connection** dialog or wizard opens.

   The **Create Connection in** option is set to **IDE Connections** by default.

2.2.6.3 Where Can I Learn More About Connections?

For information about creating and consuming connections, see:

- Chapter 25, "Configuring Content Repository Connections"
- Chapter 63, "Consuming Portlets"
- Part IV, "Integrating and Publishing Content"
- Chapter 7, "Deploying and Testing Your Portal Framework Application"

2.2.7 Preparing for Team Development and Source Control

It's important to consider the overall team development environment. To be useful, a team development environment must be configured to allow developers to share common resources, like databases, content repositories, and source code. A well-planned team environment allows you to quickly and consistently develop, build, and update your portals.

> **Tip:** Typically, one member of the development team creates a new portal application in JDeveloper and checks it in to the source control repository. A team member can create any required database or content repository connections and check those in as well.

For more detailed information on team development topics like source control and file sharing, see Chapter 3, "Working Productively in Teams."

2.3 Setup Tasks Specific to WebCenter Portal Framework Applications

This section describes tasks that you only need to perform if you are creating WebCenter Portal Framework application.

- Section 2.3.1, "Preparing for Iterative Development in a Portal Framework Application"
- Section 2.3.2, "Additional Configurations"

2.3.1 Preparing for Iterative Development in a Portal Framework Application

This section discusses the iterative development feature for WebCenter Portal Framework applications.

Enabling iterative development lets you make changes to your portal application while it is running on the Integrated WebLogic Server and immediately see the effect of those changes by refreshing the browser. For more information on iterative development, see Section 8.7, "Understanding Iterative Development."

> **Note:** The iterative development option disables many performance optimization features, which can cause your application to run more slowly.

- Section 2.3.1.1, "Enabling Iterative Development"
- Section 2.3.1.2, "Turning Off Iterative Development"

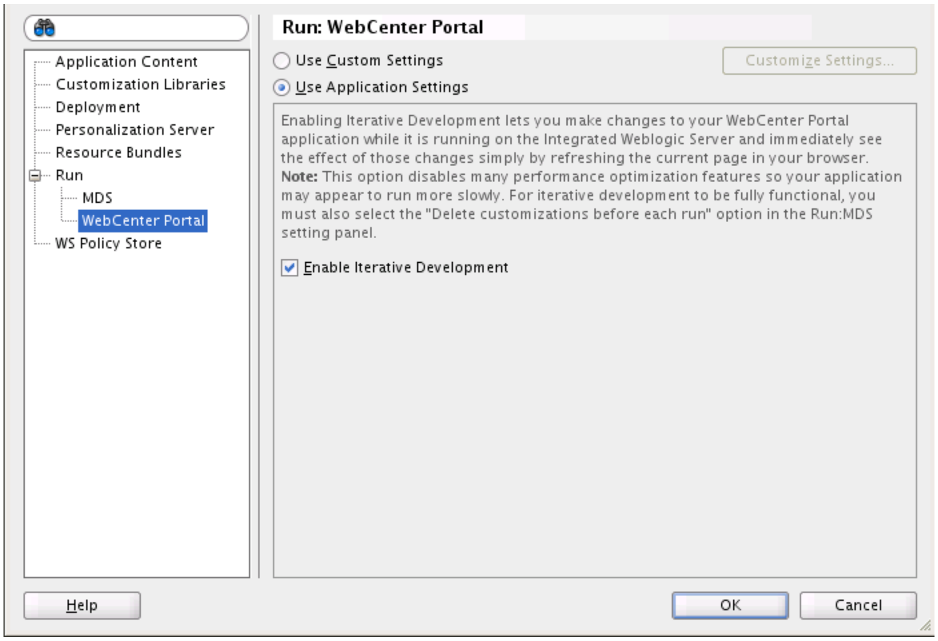
2.3.1.1 Enabling Iterative Development

This section explains how to enable iterative development, if it has been disabled. When you enable this feature, you are turning off all caching, which can cause your application to run more slowly.

> **Note:** The iterative development feature is enabled by default when you create a new Portal Framework application.

1. Select **Application Properties** from the Application menu.
2. Along the left side of the Application Properties dialog, expand the **Run** node.
3. Select **WebCenter Portal**.
4. Select **Enable Iterative Development**, as shown in Figure 2–1.

Figure 2–1 Enabling Iterative Development



Run: WebCenter Portal

○ Use Custom Settings

● Use Application Settings

Enabling Iterative Development lets you make changes to your WebCenter Portal application while it is running on the Integrated Weblogic Server and immediately see the effect of those changes simply by refreshing the current page in your browser. **Note:** This option disables many performance optimization features so your application may appear to run more slowly. For iterative development to be fully functional, you must also select the "Delete customizations before each run" option in the Run:MDS setting panel.

☑ Enable Iterative Development

5. Under the **Run** node in the left pane of the dialog, select **MDS**.

6. In the right pane, select **Delete customizations before each run**. Doing so clears the MDS of any runtime customizations every time the application is run.
7. Click **OK**.

2.3.1.2 Turning Off Iterative Development

This section explains how to turn off iterative development. Iterative development is enabled by default. It's a good practice to turn off iterative development for testing purposes before you deploy your application to a production server.

There are other several reasons why you might consider turning off iterative development, such as:

- Because turning on iterative development disables all caching, you might turn off this feature if you have a very large portal and the lack of caching is causing performance problems.
- When this feature is turned off, there is no difference between a portal instance that is running on the Integrated WebLogic Server and an instance that is deployed to a managed server.

To turn off iterative development:

1. Select **Application Properties** from the Application menu.
2. Along the left side of the Application Properties dialog, expand the **Run** node.
3. Select **WebCenter Portal**.
4. Unselect **Enable Iterative Development**.
5. Click **OK**.

2.3.2 Additional Configurations

Additional configurations that may be required for WebCenter Portal Framework applications are covered in Section 2.2.5, "Configuring WebCenter Back-End Services" and Section 2.2.6, "Creating Application Resource Connections."

2.4 Setup Tasks Specific to WebCenter Portlet Producer Applications

This section describes tasks that you only need to perform if you are creating WebCenter Portlet Producer application. For more information about WebCenter Portlet Producer applications, see Chapter 57, "Introduction to Portlets."

2.4.1 What You May Need to Know About Preconfigured Portlet Producers

WebCenter Portal provides a variety of ready-to-use portlets that you can add to your portal pages. This section provides a brief description of the preconfigured producers and the portlets they provide. It contains the following subsections:

- Section 2.4.1.1, "Deploying the Preconfigured Portlet Producers"
- Section 2.4.1.2, "Registering Deployed Portlet Producers"
- Section 2.4.1.3, "Accessing OmniPortlet and Web Clipping"
- Section 2.4.1.4, "The WSRP Sample Portlet Producers and Portlets"
- Section 2.4.1.5, "The PDK-Java Sample Portlet Producer and Portlets"

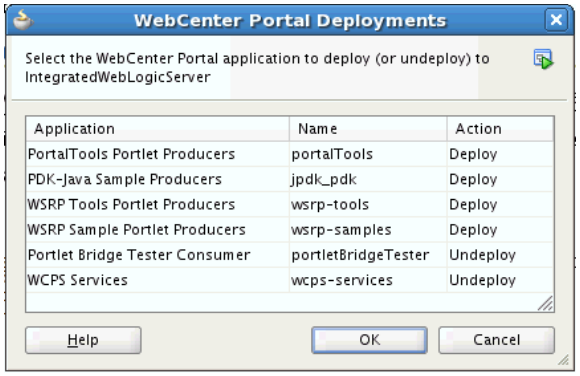
2.4.1.1 Deploying the Preconfigured Portlet Producers

The preconfigured portlet producers are not deployed by default – you must deploy them manually, as explained in this section.

> **Note:** These producer applications consume memory and require CPU time during deployment. This contributes to the WebLogic Server startup time and base memory footprint. For these reasons, it makes sense to only deploy the applications you need. For more information tuning the deployment of internal applications, see the "On-demand Deployment of Internal Applications" section in *Deploying Applications to Oracle WebLogic Server*.

1. If it is not running, start the Integrated WebLogic Server. The server must be running for this feature to be enabled.
2. From the Run menu, select **WebCenter Portal Deployments**.
3. In the WebCenter Portal Deployments dialog box, select the producer you wish to deploy and click **OK**. The dialog is shown in Figure 2–2. Each of the preconfigured producers is described in more detail in the following sections.

Figure 2–2 WebCenter Portal Deployments Dialog



Select the WebCenter Portal application to deploy (or undeploy) to IntegratedWebLogicServer

Application	Name	Action
PortalTools Portlet Producers	portalTools	Deploy
PDK-Java Sample Producers	jpdk_pdk	Deploy
WSRP Tools Portlet Producers	wsrp-tools	Deploy
WSRP Sample Portlet Producers	wsrp-samples	Deploy
Portlet Bridge Tester Consumer	portletBridgeTester	Undeploy
WCPS Services	wcps-services	Undeploy

2.4.1.2 Registering Deployed Portlet Producers

After a portlet producer is deployed, you can register it. Portlets from registered producers can then be selected from Oracle JDeveloper's Application Resources panel.

For information about registering portlet producers, see Chapter 63, "Consuming Portlets." For information about adding portlets to pages, see Section 63.5, "Adding Portlets to a Page."

2.4.1.3 Accessing OmniPortlet and Web Clipping

The Integrated WLS contains PortalTools, which provides access to the *design time at runtime* OmniPortlet and Web Clipping portlet. Design time at runtime means that users define portlet content after the portlet is placed on an application page and the page is run.

To access the OmniPortlet and Web Clipping portlet producers:

1. Start the Integrated WebLogic Server.
2. From the **Help** menu, select **WebCenter Preconfigured Server Readme**.

3. In the Readme file, go to the heading **Accessing the PortalTools Portlet Producers Test Pages**, and click the **PortalTools Welcome Page** link.

   This opens the PortalTools Welcome page.

   > **Note:** The Portal Tools Portlet Producers component must be deployed before the PortalTools Welcome page can be accessed through the WebCenter Preconfigured Server Readme page. For details, see Section 2.4.1.1, "Deploying the Preconfigured Portlet Producers."

4. On the PortalTools Welcome page, copy the URL of the Web Clipping Producer link, the OmniPortlet Producer link or the Sample Portlet Producer link, and use it as the producer URL in the Oracle PDK-Java Portlet Producer Registration Wizard.

   > **Note:** For information about registering a portlet producer, see Chapter 63, "Consuming Portlets."

Once you have registered a producer, its portlets become available on Oracle JDeveloper's Application Resources panel. In the Application Resources panel, under the Connections node, select a producer name to list its portlets, then drag a portlet onto a portal page. (For information about adding portlets to pages, see Section 63.5, "Adding Portlets to a Page.".)

The PortalTools Welcome page contains producer URLs for three producers:

- The **Web Clipping producer** provides the Web Clipping portlet, which is a browser-based declarative tool that enables dynamic reuse of content from another web source. When the source changes, the content in the Web Clipping portlet also changes. With the Web Clipping portlet, you use a web browser to navigate to the web page that contains the desired content. Using Web Clipping Studio, which is accessed through the portlet, drill down through a visual rendering of the target page to choose the desired content. For detailed information about the Web Clipping portlet, see Chapter 65, "Creating Content-Based Portlets with Web Clipping."

  > **Note:** Instead of using the Web Clipping portlet , consider using a clipper pagelet using Oracle WebCenter Portal's Pagelet Producer. For more information, see the "Managing the Pagelet Producer" chapter in the *Administering Oracle WebCenter Portal*.

- The **OmniPortlet producer** provides OmniPortlet, which is a declarative portlet-building tool that enables you to build portlets against a variety of data sources, including XML files, character-separated value files (for example, spreadsheets), web services, databases, and web page. OmniPortlet users can also choose a prebuilt layout for the data. Prebuilt layouts include tabular, news, bullet, form, chart, or HTML. For information about OmniPortlet, see Chapter 64, "Creating Portlets with OmniPortlet."

- The **Sample Portlet Producer** includes portlets built with OmniPortlet that are for demonstration purposes only. The portlet samples include a scrolling RSS portlet and a simple RSS portlet. Note that the sample producer is for demonstration and should not be used to create real-use portlet instances.

2.4.1.4 The WSRP Sample Portlet Producers and Portlets

The Integrated WLS includes sample WSRP portlet producers and portlets you can use with your application.

Note: You can find the source code for the sample portlets is in the following EAR file:

```
JDEV_
HOME/jdeveloper/webcenter/modules/oracle.portlet.server_
11.1.1/wsrp-samples.ear
```

where *JDEV_HOME* is the location where JDeveloper is installed on your machine.

To access WSRP sample portlet producers:

1. Start the Integrated WebLogic Server.
2. From the **Help** menu, select **WebCenter Portal Preconfigured Server Readme**.
3. In the Readme file, go to the heading **Accessing the WSRP Portlet Producers Test Pages**, and click the link for the **WSRP Tools Portlet Producers** or **Sample Portlet Producer**.

   Note: The portlet producers are not deployed by default. You must deploy a producer application before it can be accessed through the WebCenter Preconfigured Server Readme page. For details, see Section 2.4.1.1, "Deploying the Preconfigured Portlet Producers."

   Both links open different WSRP Producer Test Pages—one that has Parameter Form and Parameter Display portlets, the other for different WSRP producer versions of sample portlets.

4. Copy the Web Services Description Language (WSDL) URL for a WSRP producer—either WSRP v1 WSDL or WSRP v2 WSDL.

   Use the copied link as the producer URL in the WSRP Producer Registration Wizard.

   Note: For information about registering a portlet producer, see Chapter 63, "Consuming Portlets."

Depending on where the portlet producer connection was registered, its portlets appear either under Application Resources or in the Resource Palette. From here, you can drag and drop a variety of sample portlets onto your Portal Framework application pages.

2.4.1.5 The PDK-Java Sample Portlet Producer and Portlets

The Integrated WLS includes sample PDK-Java portlet producers and portlets you can use with your application. Use the PDK-Java sample portlets to familiarize yourself with the types of functionality that are available through PDK-Java portlets.

To access PDK-Java sample portlet producers:

1. Start the Integrated WebLogic Server.

2. From the **Help** menu, select **WebCenter Preconfigured Server Readme**.
3. In the Readme file, go to the heading **Accessing the PDK-Java Portlet Producers Test Pages**, and copy the link location for the **PDK-Java Sample Producer** or **PDK-Java Struts Sample Producer** link.

   Note: These producers must be deployed before they can be accessed through the WebCenter Preconfigured Server Readme page. For details, see Section 2.4.1.1, "Deploying the Preconfigured Portlet Producers."

   Use the copied link as the producer URL in the Oracle PDK-Java Portlet Producer Registration Wizard.

   Note: For information about registering a portlet producer, see Chapter 63, "Consuming Portlets.".

Depending on where the portlet producer connection was registered, its portlets appear either under Application Resources or in the Resource Palette. From here, you can drag and drop a variety of sample portlets onto your Portal Framework application pages.

2.4.1.6 The Portlet Bridge Tester Consumer

The tester is used to test portletized page or task flow in JDeveloper. The tester is deployed by default. For more information, see Section 58.4, "Testing a Portletized Page or Task Flow in JDeveloper."

2.4.1.7 WCPS Services

WebCenter Personalization Services is deployed by default, and is unrelated to portlet producers. For information about WebCenter Personalization, see Chapter 66, "Personalizing Oracle WebCenter Portal Applications."

2.5 Setting Up JDeveloper for Personalization

Personalization provides a dynamically derived user experience for your Portal Framework application. Personalization evaluates defined sources of input data, generates a decision based on that evaluation, and applies this information to a declaratively defined Personalization scenario. Personalization, for example, can return content or change application flow based on information about a user in a Human Resources database, targeting the application experience for that specific user. For more information, see Chapter 66, "Personalizing Oracle WebCenter Portal Applications."

Before you can develop and use personalization components you need to add certain components to your portal project. JDeveloper makes this process easy to do:

1. Be sure the WebCenter Portal Extension is installed into your JDeveloper environment. The WebCenter Portal Extension includes the required data integration component JAR files. See Section 2.2.2, "Installing the WebCenter Portal Extension for JDeveloper."
2. Create an application, such as a WebCenter Portal Framework application.

3. Add the WebCenter Personalization technology scope to your project. This technology scope adds the JDeveloper-specific tooling features, like the scenario editor, to the project.

    1. Right-click your project and select **Project Properties**.
    2. Select **Technology Scope** in the Project Properties dialog.
    3. Select **WebCenter Personalization** in the list of available scopes and move it to the Selected column.
    4. Click **OK**.

After you complete these steps, you are ready to develop and test personalization components in JDeveloper. For more information, see Chapter 66, "Personalizing Oracle WebCenter Portal Applications."

3 Working Productively in Teams

This chapter contains information for a team development environment, where developers are sharing files in Oracle JDeveloper. It includes information about source (or version) control systems, namely Subversion.

This chapter includes the following topics:

3.1 Using Source Control for WebCenter Portal Development

You can use source control in WebCenter Portal similar to the way you would use source control in any other development environment.

JDeveloper includes Subversion for source control. Oracle also provides free extensions to other source support systems, such as Concurrent Versions System (CVS), Dimensions, and ClearCase. You can install these extensions directly from inside JDeveloper through the **Help - Check for Updates** menu option, which is the recommended way to install extensions. If you cannot connect to the internet from your JDeveloper instance, then download the extension from Oracle Technology Network (OTN) at `http://www.oracle.com/technetwork/index.html`. Point the **Check for Updates** wizard to the local file you download.

> **Note:** You may need to configure a proxy server to access the extensions. For details, see the "Proxy Settings and JDeveloper" topic in the Oracle JDeveloper online help.

For more complete and extensive information about setting up and using SubVersion and other source control systems with JDeveloper, see the "Developing in Teams" topic in the Oracle JDeveloper online help.

3.2 Using Oracle Team Productivity Center

Oracle Team Productivity Center is an Application Lifecycle Management tool that enables software development teams to collaborate and work productively when developing portals using JDeveloper. This also is a free extension to JDeveloper.

Oracle Team Productivity Center integrates task, bug, and defect repositories, such as JIRA, Bugzilla, and its own built-in task repository into the IDE. It provides a chat interface inside JDeveloper and other team working benefits, such as recording details of files checked into the source control system against tasks and developer productivity aids, such as saving the context of your IDE.

For more information, or to download Oracle Team Productivity Center, go to Oracle Technology Network (OTN) at `http://www.oracle.com/technetwork/index.html`.

3.3 Deciding Which Files to Check in to Source Control

An important aspect of working with any source control system is understanding which files to check in and which actions might affect those files. In general, as you your team members begin creating new projects, you will see which files are created, and then can determine what you wish to check into source control. It's difficult to summarize all the possible interactions with files you may encounter; however, this section offers a few general tips.

Table 3–1 lists a few of the components with which developers typically interact, and provides links to more information about those components and their related files.

Table 3–1 Commonly Encountered Components

Component	For More Information...
Pages	For information about page metadata files, see the "Introduction to the ADF Metadata Files" section in the *Fusion Developer's Guide for Oracle Application Development Framework*.
Portlets	For information about portlet and producer metadata files, see Appendix A, "WebCenter Portal Files." See also, Section 59, " Building Standards-Based Java Portlets Using JSR 286."
Task Flows	For detailed information about ADF task flows, see the "Getting Started with ADF Task Flows" section in *Fusion Developer's Guide for Oracle Application Development Framework*.
Data Controls	See the *Fusion Developer's Guide for Oracle Application Development Framework* for detailed information about data controls.

For information on other features and related files you may wish to review when planning your source control strategy, see Appendix A, "WebCenter Portal Files." The appendix lists and describes Portal Framework files, system files, JDeveloper files, and others.

3.4 Implementing Common Requirements One Time

It is good practice for the project administrator to implement any common developer requirements one time and then check in that version for all to use. By planning ahead and having the administrator take care of these common requirements up front, you can reduce redundancy and error.

For example, suppose two developers must add OmniPortlet on different pages of a portal. If the project administrator has registered the OmniPortlet producer, then it is available for both of them to use. If not, then each developer likely registers the OmniPortlet producer separately, leading to unnecessary duplication and confusion.

Another example: suppose many developers need content from the same content repository. One person should set up and check in the needed connection first. Other developers then can simply reuse the same data control.

3.5 Portlet Producer Considerations

When working in a team environment, bear in mind the following considerations pertaining to portlet producers:

- Section 3.5.1, "Portlet Producer Connections"
- Section 3.5.2, "Combining Portlets from Different Portlet Producers"

3.5.1 Portlet Producer Connections

When building an EAR file for your project, connections are loaded for the entire portal rather than individual projects. For example, suppose you have a portal with two projects: P1 and P2. P1 has 100 registered producers and P2 has no producers. When you build an EAR file for either project, all 100 of P1's producer connections are loaded into `connections.xml`. Note, though, that you can also edit `connections.xml` manually.

When you run the predeployment tool to create a targeted EAR file, all of the connections in `connections.xml` must be accessible. Hence, in our example, the generation of a targeted EAR file for either project would fail if any of the 100 portlet producer connections for P1 are unavailable for some reason. Given this behavior, you must carefully consider how you plan to subdivide your overall development effort into portals and projects.

3.5.2 Combining Portlets from Different Portlet Producers

In some cases, you might have multiple developers building portlets and ultimately you want those portlets to be combined under a single portlet producer. The developers must be conscious of some potential issues.

- Portlet names and JSP paths could clash. Portlet developers should use prearranged class package names and JSP paths to avoid naming clashes when portlets are combined within one portlet producer in one portal.
- When you create a JPS portlet in the Portlet wizard, the directory for the portlet modes defaults to `portlet`*`n`*`\html\`*`mode_name`*, where *`n`* is a number that increments for each portlet you create. To avoid directory and file name clashes, portlet developers should change the directory name on the Content Type and Portlet Modes page of the Portlet wizard. Select the portlet mode and then change the directory name in the corresponding field to something unique.
- When you combine portlets into one portlet producer, you must manually merge the portlet descriptor files, avoiding identifier clashes as you do so as follows:
  - JPS portlet identifiers in the `portlet.xml` and `oracle-portlet.xml` files are generated automatically starting from `portlet1`. When you manually merge multiple portlet descriptor files into one, you must change any portlet identifiers that clash with one another.
  - Similarly, the PDK-Java portlet identifiers in `provider.xml` are automatically generated starting from `1`. When you manually merge multiple `provider.xml` files, you must change any portlet identifiers that clash with one another.

- You must manually merge any web descriptor (`web.xml`) changes; for example, security role information.
- For PDK-Java portlets, you also might need to manually merge `.properties` files.
- When using many different portlets, parts of files might not be checked in properly because they are overwritten by someone else or because JDeveloper does not pick up the changed files correctly. For example, you might deploy a portal with many types of portlets and see the following error in two of the three OmniPortlets:

  ```
  mdsId
  oracle/adf/portlet/OmniPortlet_1172537210873/ap/Portlet100_0b4156e9_0111_1000_
  8001_82235f273a39.pxml not found

  mdsId
  oracle/adf/portlet/OmniPortlet_1172537210873/ap/Portlet100_250498fc_0111_1000_
  8002_a9fe7286a54e.pxml not found
  ```

  If you receive error messages like these, then ensure that all `*.pxml` files from the development environment are copied over to the deployed environment.
- Your portlet customizations might not appear in your deployed environment. Make sure that the content of the `oracle\adf\portlet\<`*`portletInstanceName`*`>.pxml` file is correct and that it refers to the proper *`*.pxml`* files.

4

Preparing Your Application for WebCenter Portal Tools and Services

This chapter describes how to prepare your application to consume tools and services in Oracle WebCenter Portal.

This chapter includes the following topics:

- Section 4.1, "Understanding WebCenter Portal Tools and Services"
- Section 4.2, "Preparing Your Framework Application for Tools and Services"
- Section 4.3, "Customizing How Services Render Resources"
- Section 4.4, "Configuring General Settings"

4.1 Understanding WebCenter Portal Tools and Services

Oracle WebCenter Portal tools and services enrich portals and Web sites with social computing services, personal productivity services, online awareness and communications, content integration, and Web analytics.

This section summarizes the key technologies. This can help you determine which tools and services to implement and the best way to customize your user interface.

> **Note:** WebCenter Portal tools and services expose their functionality through task flows that you can add to the pages of your application. If these task flows do not quite meet your requirements, you can customize them to change their look and feel or functionality. For example, you can add text, change labels, remove regions or components, or show additional attributes. For more information, see Chapter 23, "Customizing WebCenter Portal Tools and Services Task Flows."

This section includes the following subsections:

- Section 4.1.1, "Understanding WebCenter Portal Horizontal Tools and Services"
- Section 4.1.2, "Understanding WebCenter Portal APIs"
- Section 4.1.3, "Using WebCenter Portal Data Controls"

4.1.1 Understanding WebCenter Portal Horizontal Tools and Services

Some tools and services in WebCenter Portal are considered *horizontal* in that they interact with other tools and services across an application.

Table 4–1 lists integration points in WebCenter Portal.

Table 4–1 Integration Points in WebCenter Portal

WebCenter Portal Tool or Service	RSS	Search	Tags	Links	Comments and Likes	Activity Stream	Activity Graph	Notifications	Analytics
Activity Graph						X	n/a		X
Announcements	X	X		X		X		X	
Blogs		X	X	X	X	X	X	X	X
Discussions	X	X	X	X	X (replies on topics)	X	X (replies)	X	
Documents, including wikis		X	X	X	X	X	X	X	X
Events		X partial		X		X		X	
Instant Messaging and Presence (IMP)								X	
Lists	X	X	X	X		X		X	
Mail								X	
Notes		X		X					
People Connections		X partial	X partial		X (Activity Stream, Message Board)	X (Message Board, Profiles, Feedback	X (Message Board)	X	X
Polls									
Recent Activities	X								
Search		n/a	X			X partial			X
Tags		X	n/a			X			

Note: Search (listed in the table) uses WebCenter Portal search adapters to search each available component. However, large-scale implementations should be configured to use Oracle SES search for best performance. Oracle SES searches applications for the following resources:

- Documents, including wikis and blogs
- Announcements and discussions

For more information, see Chapter 45, "Integrating Search."

4.1.2 Understanding WebCenter Portal APIs

This section describes the APIs available for WebCenter Portal tools and services.

Note the following considerations when multiple customization options are available:

- Use REST APIs to build a custom client for accessing WebCenter Portal; for example, an iPhone application that interacts with WebCenter Portal.

- REST APIs may provide the fastest and easiest way to customize the user interface and develop custom components. Consider using data controls or native APIs to build a custom user interface for accessing WebCenter Portal.
- Use data controls or native APIs to build a custom portal or composite Framework application.
- Use data controls or native APIs if you are proficient with Java, JDeveloper, and ADF. To use other languages, especially JavaScript, use REST APIs.

Table 4–2 lists tools and services with available APIs.

Table 4–2 Supported Technologies for Tools and Services

WebCenter Portal Tool or Service	Data Controls	Java APIs	REST APIs	Back End APIs
Activity Graph	Section 46.3.1, "Using the Recommendation Data Control"	*Java API Reference for Oracle WebCenter Portal*	Section 46.3.2, "Using the Activity Graph REST APIs"	
Analytics	Section 47.3.1, "Using SQL Data Controls"	*Java API Reference for Oracle WebCenter Portal*		
Announcements				Web Services with Oracle WebCenter Portal's Discussions Server (requires configuration, because WebCenter Portal is set up with custom authentication) See the Jive Forums documentation on the Oracle Fusion Middleware documentation library (in the WebCenter Portal product area)
Comments & Likes		*Java API Reference for Oracle WebCenter Portal*	Section 42.1, "Activity Stream REST API"	
Discussions			Section 33.3.8, "Using the Discussions REST API"	Web Services with Oracle WebCenter Portal's Discussions Server (requires configuration, because WebCenter Portal is set up with custom authentication) See the Jive Forums documentation on the Oracle Fusion Middleware documentation library (in the WebCenter Portal product area)
Documents (with wiki and blogs)	Chapter 26, "Working with Content Data Controls"	*Java API Reference for Oracle WebCenter Portal*	Chapter 42, "Using the People Connections REST APIs"	See Java API Reference for Oracle WebCenter Content Remote Intradoc Client (RIDC) Services Reference for Oracle WebCenter Content

Table 4–2 (Cont.) Supported Technologies for Tools and Services

WebCenter Portal Tool or Service	Data Controls	Java APIs	REST APIs	Back End APIs
Events			Section 48.3, "Using the Events REST API"	Web Services with Microsoft Exchange
General Settings		*Java API Reference for Oracle WebCenter Portal*		
Links			Section 43.3.1, "Using the Links REST API"	
Lists			Section 49.4, "Using the Lists REST API"	
Notifications	Section 50.3.2, "Using Notifications Data Controls"	*Java API Reference for Oracle WebCenter Portal*		
Pagelet Producer			Section 62.7.2.2, "Accessing Pagelets Using REST"	
People Connections	Section 40.1, "Using People Connections Data Controls"	*Java API Reference for Oracle WebCenter Portal*	Chapter 42, "Using the People Connections REST APIs" (for Profile and Activity Stream)	
Personalization		*Java API Reference for Oracle WebCenter Portal* (for developing custom Providers and Locators) Chapter 72, "Conductor API Reference"	Chapter 71, "Property Service REST APIs" Chapter 72, "Conductor API Reference"	
Polls	Section 36.3.4, "Using the Polls Data Controls"			
Resource Action Handler Framework		*Java API Reference for Oracle WebCenter Portal*		
Search	Section 45.3.5, "Using the Search Data Control" **Note**: Only Oracle SES search supports the search data control.	*Java API Reference for Oracle WebCenter Portal*	Section 45.3.4, "Using the Search REST APIs" **Note**: Only Oracle SES search supports the search REST APIs.	Web Services and Java APIs with Oracle Secure Enterprise Search
Tags		*Java API Reference for Oracle WebCenter Portal*	Section 44.3.2, "Using the Tags REST APIs"	

See Also: *Java API Reference for Oracle WebCenter Portal* for more information about Expression Language APIs

4.1.3 Using WebCenter Portal Data Controls

Several tools and services provide data controls for building a customized user interface with a Framework application or task flow. Deploying this task flow into an ADF library allows for a portable consumption of the task flow; for example, you could add it to a resource catalog for a page template in a portal in a WebCenter Portal application.

You do not need to integrate a tool or service before you can use its data control to edit the user interface. An application is configured for the respective tool or service when one of its data controls or task flows is used.

Note: Oracle ADF architecture provides data controls for the user interface to understand the structure of your data. Metadata describes data collections, properties, methods, and types. When you drag and drop attributes, collections, and methods onto a page, JDeveloper automatically creates the bindings from the page to the associated tools and services.

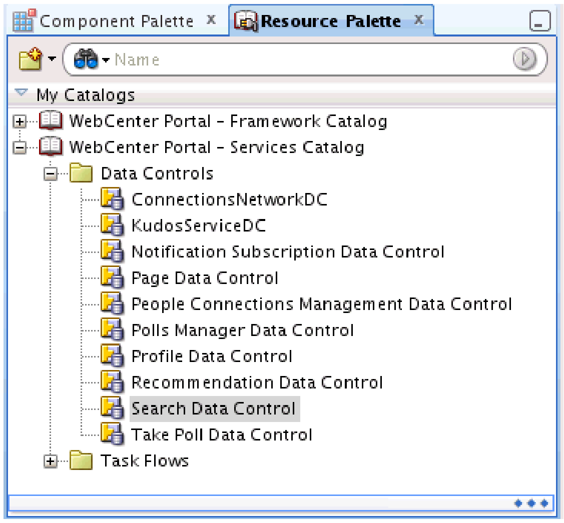
See *Fusion Developer's Guide for Oracle Application Development Framework* for detailed information about data controls.

Note: For ADF Web service data controls, connection details are not propagated from stage to production. For the data control to work, you must import the connections at the target instance.

To use a built-in data control:

1. In JDeveloper, create a WebCenter Portal Framework application with any connections required.
2. In the Resource Palette, expand My Catalogs, WebCenter Portal - Services Catalog, and Data Controls.
3. Right-click the data control and choose **Add to Project**.

Figure 4–1 Data Controls in the Resource Palette



Component Palette ×
Resource Palette ×
Name
My Catalogs
WebCenter Portal - Framework Catalog
WebCenter Portal - Services Catalog
Data Controls
ConnectionsNetworkDC
KudosServiceDC
Notification Subscription Data Control
Page Data Control
People Connections Management Data Control
Polls Manager Data Control
Profile Data Control
Recommendation Data Control
Search Data Control
Take Poll Data Control
Task Flows

4. Drag and drop methods and properties from the data control to an ADF JSF page.

> **Note:** There are two other ways to add data controls to your application:
>
> - From the Resource Palette, choose IDE connections, and navigate to the data control. Right-click the data control, and select **Add to Project**.
> - From Project Properties, choose Libraries and Classpath, and click the **Add Library** button. With this approach, you must know the JDeveloper library that contains the data control you want.

4.2 Preparing Your Framework Application for Tools and Services

This section describes the steps you must take to prepare your application to use WebCenter Portal tools and services. It includes the following subsections:

- Section 4.2.1, "How to Prepare Your Application to Consume Tools and Services"
- Section 4.2.2, "Setting Up a Database Connection"
- Section 4.2.3, "Setting Up an External Application Connection"

4.2.1 How to Prepare Your Application to Consume Tools and Services

You can configure any application to include a tool or service. When you create an application in JDeveloper, you can choose to base the application on a template. Although not a requirement, WebCenter Portal's Framework application template makes all the appropriate connection wizards and tag libraries readily visible and available in the New Gallery and Component palette. When you consume a task flow or component, the necessary libraries are automatically added to the project.

Depending upon the tool or service you plan to consume, your application must meet certain prerequisites. For example, if the tool must know the identity of users, then your application must provide some level of security with user authentication.

This section includes the following subsections:

- Section 4.2.1.1, "Implementing Security for Tools and Services"

- Section 4.2.1.2, "Setting Up SSL-Protected Connections"

4.2.1.1 Implementing Security for Tools and Services

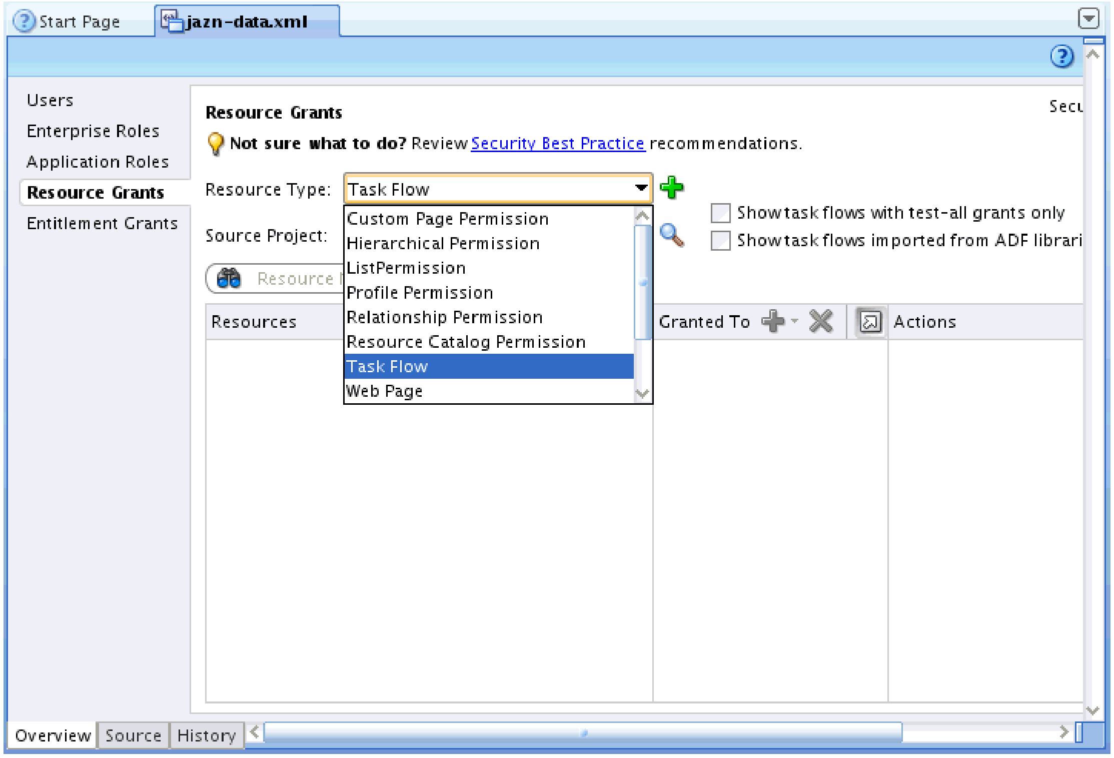
Some tools must know the identity of the user (for example, search needs the user's identity for saving searches). For these tools and services, you must at least configure your application to authenticate users such that they have distinct identities for the purposes of user customization and preferences.

ADF security is configured by default if you created your application using WebCenter Portal's Framework application template.

> **See Also:**
>
> - Section 74.3, "Configuring ADF Security" for details on how to implement a basic security solution for your Framework application
> - Chapter 74, "Securing Your WebCenter Portal Framework Application" for details on how to implement a complete security solution for your Framework application

After you configure ADF security for your application, you can open the `jazn-data.xml` file and modify your sample user's privileges for each task flow. To open the ADF Security Policies Editor, locate the file in the Application Resources panel and double-click its name, or select Application - Secure - Resource Grants (Figure 4–2). The Resource Type drop down controls the set of grants that are shown in the table. You can show only the grants for a particular permission type by selecting it from the list.

Figure 4–2 ADF Security Policies in the jazn-data.xml File



Resource Grants

Not sure what to do? Review Security Best Practice recommendations.

Resource Type: Task Flow

□ Show task flows with test-all grants only

□ Show task flows imported from ADF librari

4.2.1.2 Setting Up SSL-Protected Connections

If you are setting up a back-end connection in JDeveloper, and the connection is being made to an SSL-protected endpoint (with a valid certificate from a trusted certificate authority) then you need prepare your environment accordingly.

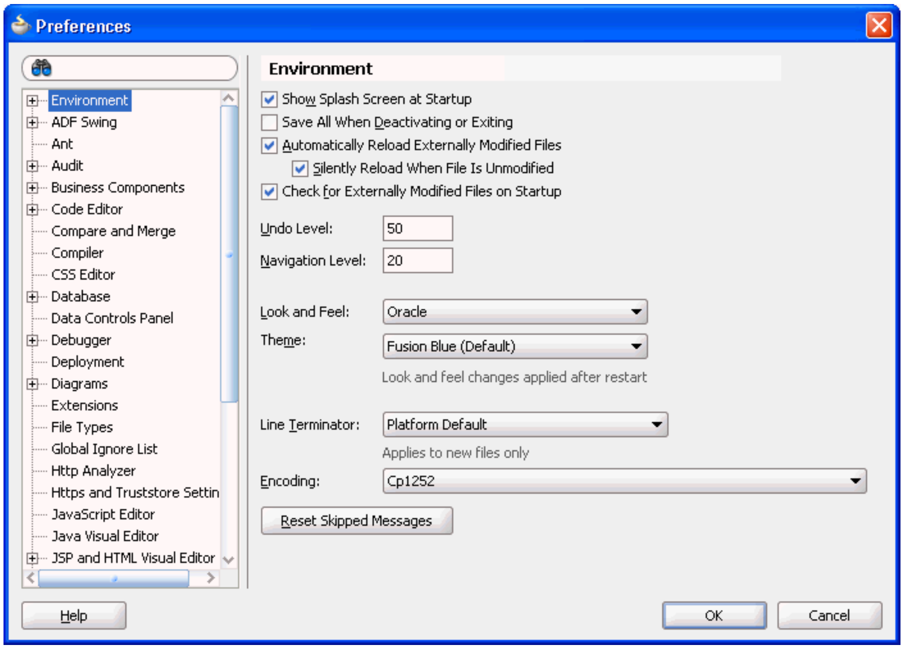
> **Note:** This Preferences setting change is required only for connections made using Integrated WLS as the default server. If you are deploying to a Managed Server, this settings change is not required.

To set preferences for SSL-protected connections:

1. From the JDeveloper tool bar, select **Tools > Preferences**.

   The Preferences dialog displays (Figure 4–3).

Figure 4–3 Preferences Dialog



Environment

☑ Show Splash Screen at Startup
☐ Save All When Deactivating or Exiting
☑ Automatically Reload Externally Modified Files
☑ Silently Reload When File Is Unmodified
☑ Check for Externally Modified Files on Startup

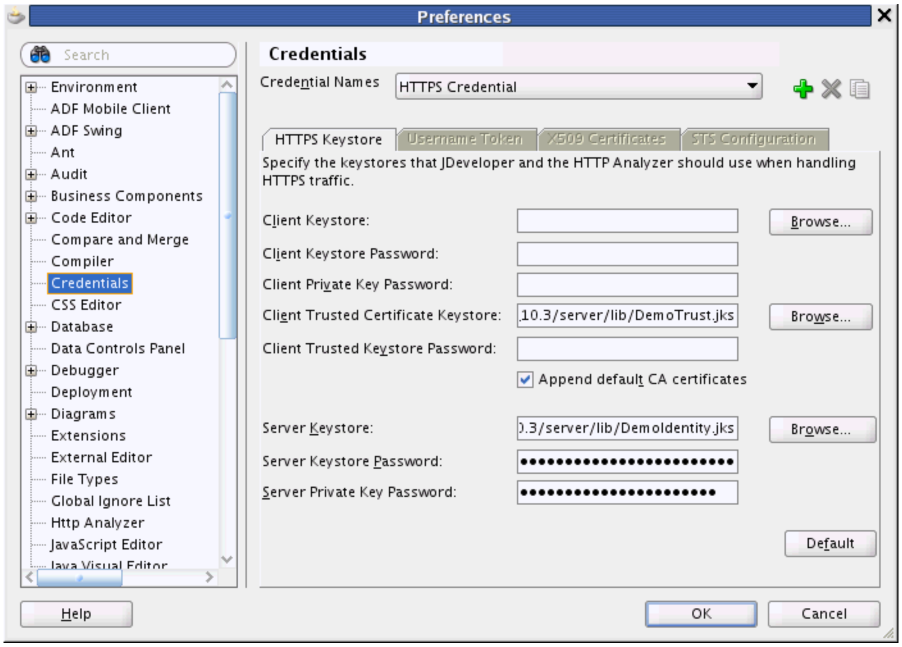
Undo Level: 50
Navigation Level: 20

Look and Feel: Oracle
Theme: Fusion Blue (Default)
Look and feel changes applied after restart

Line Terminator: Platform Default
Applies to new files only
Encoding: Cp1252

2. On the Preferences dialog, click **Credentials** (Figure 4–4).

Figure 4–4 Credentials Pane



Credential Names: HTTPS Credential

Specify the keystores that JDeveloper and the HTTP Analyzer should use when handling HTTPS traffic.

Client Keystore:

Client Keystore Password:

Client Private Key Password:

Client Trusted Certificate Keystore: 10.3/server/lib/DemoTrust.jks

Client Trusted Keystore Password:

☑ Append default CA certificates

Server Keystore:).3/server/lib/DemoIdentity.jks

Server Keystore Password: ••••••••••••••••••••••••

Server Private Key Password: ••••••••••••••••••••••

3. Change the value of **Client Trusted Certificate Keystore** to:

   <*JAVA_HOME*>/jre/lib/security/cacerts

   where <*JAVA_HOME*> is the location of the Java home directory.

4. Click **OK**.

4.2.2 Setting Up a Database Connection

Many tools and services require a connection to a database schema where relevant information is stored. For example, with links, relationship mapping information, such as what object is linked to what other object, is stored in the database.

Table 4–3 lists the tools and services that require a database connection.

Table 4–3 Associated Data Source

Tool or Service	Database Schema
Activity Graph	ACTIVITIES schema
Activity Stream	WEBCENTER schema
Analytics	ACTIVITIES schema
Blogs	WEBCENTER schema
Comments	WEBCENTER schema
Documents (including wikis and blogs) that want to include Comments and Activity Stream	WEBCENTER schema
Links	WEBCENTER schema
Lists	WEBCENTER schema

Table 4–3 (Cont.) Associated Data Source

Tool or Service	Database Schema
Oracle Portal Adapter	PORTAL schema (name of the Oracle Portal schema) For more information, see the section "Setting Up the Environment to Use the Federated Portal Adapter" in the *Administrator's Guide for Oracle Portal*.
People Connections	WEBCENTER schema
Polls	WEBCENTER schema
Tags	WEBCENTER schema
Announcements	DISCUSSIONS schema
Discussions	DISCUSSIONS schema

See Also:

- Section 2.2.5, "Configuring WebCenter Back-End Services" for information about installing the schemas
- The "Deploying the Application to a WebLogic Managed Server" section in *Administering Oracle WebCenter Portal* for data source considerations when deploying your application to a production environment

To create the database connection:

1. In the Application Navigator, expand the **Application Resources** panel.
2. Right-click **Connections**, then click **Database.**
3. Enter the following information for your database connection:
   - **Connection Name**: `webcenter/CustomPortal` or `activities/CustomPortal`

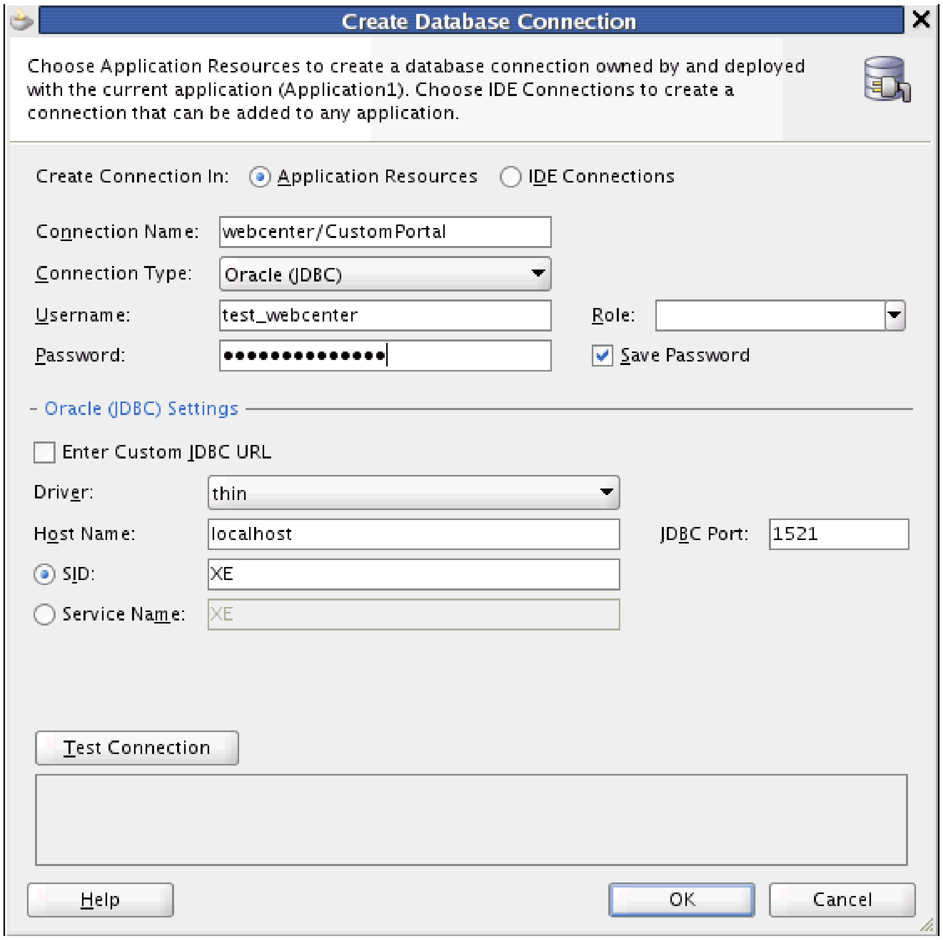
     Note: Oracle recommends that you use these names for ease of deployment to a Framework managed server.

     - If your application contains task flows that use the WebCenter Portal schema, then name the database connection `webcenter/CustomPortal`.
     - If the application contains task flows that use the Activities schema, then name the database connection `activities/CustomPortal`.

   - **Connection Type**: `Oracle (JDBC)`
   - **Username:** `username`
   - **Password**: `password`
   - **Host**: *host where you install the WebCenter Portal schema*; for example, `localhost`
   - **JDBC Port:** *port*; for example, `1521`
   - **SID**: *system identifier for the database with the same JDBC*; for example, `ORCL`

> **Note:** If the **Save Password** checkbox is not selected, then when deploying from JDeveloper to a managed server or the Integrated WebLogic Server, you must manually create the data source after deployment.
>
> For detailed information on how to create a JDBC data source for Oracle WebLogic Server, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

Figure 4–5 Database Connection



Create Database Connection

Choose Application Resources to create a database connection owned by and deployed with the current application (Application1). Choose IDE Connections to create a connection that can be added to any application.

Create Connection In: ● Application Resources ○ IDE Connections

Connection Name: webcenter/CustomPortal

Connection Type: Oracle (JDBC)

Username: test_webcenter

Role:

Password: ••••••••••••••

☑ Save Password

Oracle (JDBC) Settings

□ Enter Custom JDBC URL

Driver: thin

Host Name: localhost

JDBC Port: 1521

● SID: XE

○ Service Name: XE

4. Click **OK**.

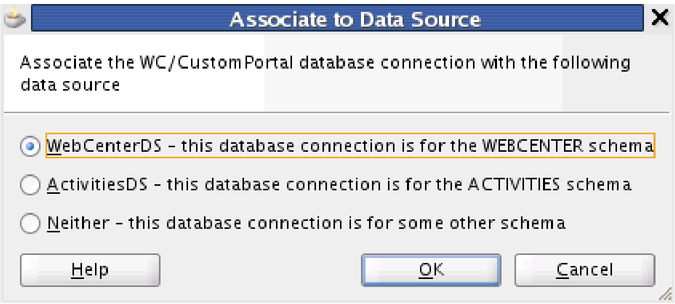
5. In the Associate to Data Source dialog, select the appropriate schema.

   - If you named the connection `webcenter/CustomPortal`, then select to associate this connection to the WebCenter Portal schema.

   - If you named the connection `activities/CustomPortal`, then select to associate this connection to the Activities schema.

   Click **OK** (Figure 4–6).

Figure 4–6 Associating to Data Source from the Connection Wizard



Associate to Data Source

Associate the WC/CustomPortal database connection with the following data source

● WebCenterDS - this database connection is for the WEBCENTER schema

○ ActivitiesDS - this database connection is for the ACTIVITIES schema

○ Neither - this database connection is for some other schema

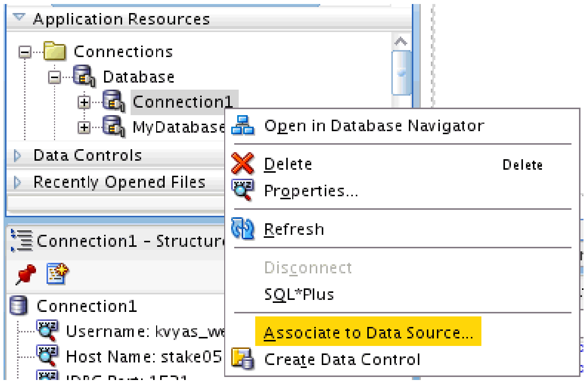
The data source association applies separately to each project in the workspace. If there is more than one WebCenter Portal project in the workspace, then the dialog displays a dropdown list allowing the user to choose which project to configure.

> **Note:** While you can set up the connections to back-end servers at design time in Oracle JDeveloper, you can later add, delete, or modify connections in your deployed environment using Enterprise Manager Fusion Middleware Control.
>
> See the guide *Administering Oracle WebCenter Portal* for more information.

4.2.2.1 Associating Existing Database Connections

For existing database connections, you can associate data sources by right-clicking the connection and selecting **Associate to Data Source** (Figure 4–7).

Figure 4–7 Associating to Data Source for Existing Connections



4.2.3 Setting Up an External Application Connection

When a tool or service interacts with an application that handles its own authentication, you can associate that application with an external application definition to allow for credential provisioning.

The following tools and services permit the use of an external application to connect with it and define authentication for it:

- Documents
- Events

- Instant Messaging and Presence
- Mail
- RSS Viewer (when using a secured RSS feed)

> **See Also:**
>
> - Chapter 28, "Integrating Documents," Chapter 34, "Integrating Instant Messaging and Presence," Chapter 35, "Integrating Mail," and Chapter 52, "Integrating RSS" for more information about setting up an external application
> - Section 74.13, "Working with External Applications" for more information about external applications in general

4.3 Customizing How Services Render Resources

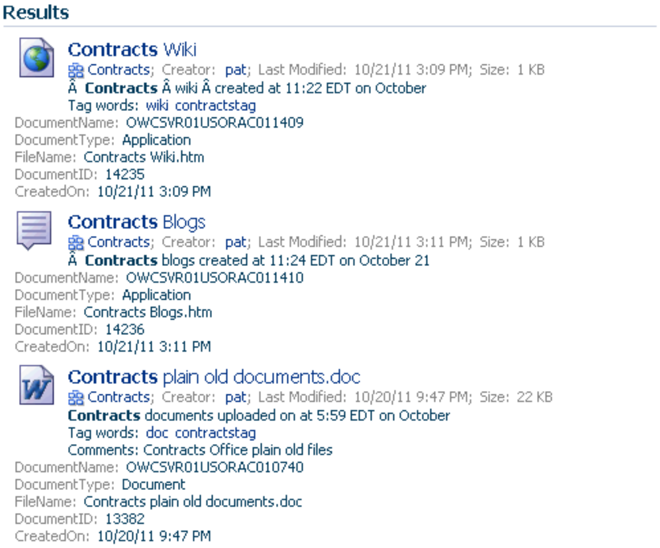
Many services used with WebCenter Portal provide access to resources. For example, search results can include links to documents, tags, activities, and other types of resources. This section explains how to specify the way such resources are rendered in the portal.

- Section 4.3.1, "Overview of Resource Rendering Options"
- Section 4.3.2, "Rendering Resources in the Same Browser Window"
- Section 4.3.3, "Rendering Resources in an ADF Inline Popup"
- Section 4.3.4, "Rendering Resources in a New Browser Window"
- Section 4.3.5, "Setting Rendering Behavior with the resourceActionBehavior Tag"
- Section 4.3.6, "Updating adf-config.xml in Deployed Framework Applications"

4.3.1 Overview of Resource Rendering Options

Figure 4–8 shows sample results for a search. There are numerous clickable elements in the results, including links to user profiles, documents, tags, blogs, and wiki pages.

Figure 4–8 Sample Search Results



Results

Contracts Wiki
Contracts; Creator: pat; Last Modified: 10/21/11 3:09 PM; Size: 1 KB
Â **Contracts** Â wiki Â created at 11:22 EDT on October
Tag words: wiki contractstag
DocumentName: OWCSVR01USORAC011409
DocumentType: Application
FileName: Contracts Wiki.htm
DocumentID: 14235
CreatedOn: 10/21/11 3:09 PM

Contracts Blogs
Contracts; Creator: pat; Last Modified: 10/21/11 3:11 PM; Size: 1 KB
Â **Contracts** blogs created at 11:24 EDT on October 21
DocumentName: OWCSVR01USORAC011410
DocumentType: Application
FileName: Contracts Blogs.htm
DocumentID: 14236
CreatedOn: 10/21/11 3:11 PM

Contracts plain old documents.doc
Contracts; Creator: pat; Last Modified: 10/20/11 9:47 PM; Size: 22 KB
Contracts documents uploaded on at 5:59 EDT on October
Tag words: doc contractstag
Comments: Contracts Office plain old files
DocumentName: OWCSVR01USORAC010740
DocumentType: Document
FileName: Contracts plain old documents.doc
DocumentID: 13382
CreatedOn: 10/20/11 9:47 PM

For Portal Framework applications, most services render their resources directly in the browser window.

The possible resource rendering behaviors available within WebCenter Portal are:

- **Full-screen rendering in the same browser window.** This option is the default for most services. The resource is opened in a viewer task flow by navigating from the browser to the resource using the same browser window. See Section 4.3.2, "Rendering Resources in the Same Browser Window."
- **ADF inline popup.** This option opens the resource in an inline popup (a dialog-like window that pops up and is contained within the current browser window.) See Section 4.3.3, "Rendering Resources in an ADF Inline Popup."
- **New browser window.** This option renders the resource in a new browser window. See Section 4.3.4, "Rendering Resources in a New Browser Window."

4.3.2 Rendering Resources in the Same Browser Window

By default, most resources are rendered full-screen in the same browser window.

> **Note:** In some special cases, resources are intentionally rendered by default in an inline popup dialog, as explained in Section 4.3.5, "Setting Rendering Behavior with the resourceActionBehavior Tag."

To explicitly set the default rendering to the browser window, you can do the following:

1. In the Application Navigator, open the **Application Resources** list.
2. Open the Descriptors folder and then open the **ADF META-INF** folder.
3. Open the `adf-config.xml` file in the editor and add a `<resource-handler>` element, as shown in Example 4–1. In this example, the DefaultResourceActionHandler (the default class to which rendering is delegated) specifies the desired behavior. If you were to remove the `<resource-handler>` element from `adf-config.xml` entirely, the behavior would be exactly the same. The behavior specified in Example 4–1 applies to all services.

Example 4–1 Specifying In-Browser Rendering

```
<wpsC:adf-service-config
xmlns="http://xmlns.oracle.com/webcenter/framework/service">
   <resource-handler
       class="oracle.webcenter.framework.resource.view.DefaultResourceActionHandler"/>
</wpsC:adf-service-config>
```

4.3.3 Rendering Resources in an ADF Inline Popup

To change the default rendering from the browser window to an ADF inline popup dialog, do the following:

1. In the Application Navigator, open the **Application Resources** list.
2. Open the Descriptors folder and then open the **ADF META-INF** folder.
3. Open the `adf-config.xml` file in the editor and add a `<resource-handler>` element, as shown in Example 4–2. In this example, the

DefaultResourceActionHandler (the default class to which rendering is delegated) is overridden by the `display-as-popup=true` attribute.

Example 4–2 Specifying ADF Inline Popup for Rendering

```
<wpsC:adf-service-config
xmlns="http://xmlns.oracle.com/webcenter/framework/service">
   <resource-handler
       class="oracle.webcenter.framework.resource.view.DefaultResourceActionHandler"
       display-as-popup="true" />
</wpsC:adf-service-config>
```

If the user clicks the **Maximize** button in an inline popup, then the currently specified default handler is invoked. For DefaultResourceActionHandler, the resource appears full-screen in the browser. If PopUpResourceActionHandler is specified in `adf-config.xml`, then it displays in a new browser window. See also Section 4.3.4, "Rendering Resources in a New Browser Window."

4.3.4 Rendering Resources in a New Browser Window

To change the default rendering from within the browser window to a new browser window, do the following:

1. In the Application Navigator, open the **Application Resources** list.
2. Open the Descriptors folder and then open the **ADF META-INF** folder.
3. Open the `adf-config.xml` file in the editor and add the `<resource-handler>` element, as shown in Example 4–3. In this case, rendering is delegated to the PopUpResourceActionHandler class.

Example 4–3 Specifying a Separate Browser for Rendering

```
<adf-service-config
xmlns="http://xmlns.oracle.com/webcenter/framework/service">
    <resource-handler
class="oracle.webcenter.framework.resource.view.PopUpResourceActionHandler" />
</adf-service-config>
```

4.3.5 Setting Rendering Behavior with the resourceActionBehavior Tag

Rendering behavior that is set in `adf-config.xml` can be overridden on the resource link itself using the `resourceActionBehavior` tag and setting the `useResourcePopup` attribute to values of `always`, `never` or `appDefined`.

WebCenter Portal uses this technique for targeted cases where a full navigation does not make sense. For example, search results may include the resource's author. When you click this user name link, you see the popup summary profile of the author without navigating away from the search result.

If `useResourcePopup` is not set, or if it is set to `appDefined` on the resource link, then the `display-as-popup` attribute in `adf-config.xml` is honored.

> **Note:** In cases where WebCenter Portal services override the `<resource-handler>` by design, the `useResourcePopup` tag is set to `always` in their `resourceActionBehavior` tags. You can change this by customizing the task flow itself.

4.3.6 Updating adf-config.xml in Deployed Framework Applications

In deployed applications, the `<resource-handler>` settings in `adf-config.xml` can be added and updated using WLST commands. For command syntax and examples, see the sections, "setWebCenterServiceFrameworkConfig" and "getWebCenterServiceFrameworkConfig" in *WebLogic Scripting Tool Command Reference*.

4.4 Configuring General Settings

Optionally, you can enable users to set the time zone, the date and time format, the language (locale), and the accessibility mode for the tools and services you add to your application. You can provide these capabilities through WebCenter Portal General Settings. This contains values that you can access either directly from the JSF page(s) in your Framework application or indirectly through an API. General Settings covers the following areas:

- **Time Zone:** By default, displays the time defined by the server running the application. This is based on `java.util.Timezone`; for example, `GMT+0800`. It also supports the format `Region/Country`; for example, `Europe/Amsterdam`.
- **Date/Time:** By default, configured to the style `java.text.DateFormat.SHORT`. This is based on `java.text.DateFormat`; for example, `java.text.DateFormat.MEDIUM`. Supported values are `SHORT`, `MEDIUM`, `LONG` and `FULL`.
- **Language:** By default, defined by the locale of the user's browser. This is based on `java.util.Locale`; for example, `fr-CA`.
- **Accessibility Settings:** A value to use with the `accessibility-mode` setting in the `trinidad-config.xml` file. Valid values are `default`, `inaccessible`, or `screenReader`.
- **Application Skin:** A value to use with the `skin-family` setting in the `trinidad-config.xml` file. This is based on the Trinidad `skin-family` attribute. Valid values are defined by skins included with the application.

To use this directly from your application, use Expression Language in your JSF pages to access the `generalSettings` managed bean. The style is based on the `java.util.Timezone`, and the pattern is based on `java.text.SimpleDateFormat`.

When you add `generalSettings` as the value attribute of an ADF component, for example `af:activeOutputText`, you can open the Expression Builder, then navigate to **JSF Managed Beans > generalSettings** to view the preference values for the bean.

General Settings supports both pattern-based and style-based formats. If a pattern is not specified, then the style is used. By default, the patterns are not specified or null.

Figure 4–9 shows the Insert EL Expression dialog with General Settings.

Figure 4–9 Expression Builder for the generalSettings JSF Managed Bean

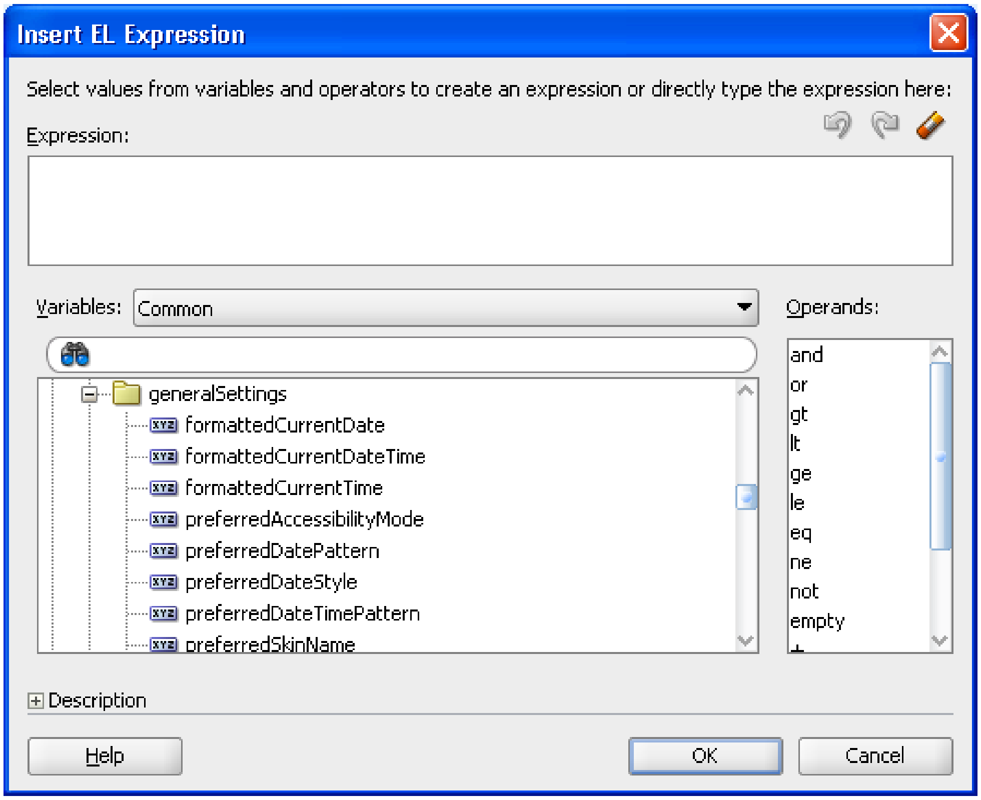


Table 4–4 describes the preference values for General Settings.

Table 4–4 General Settings Managed Bean Preference Values and Descriptions

General Settings Preference Value	Description
`formattedCurrentDate`	Displays the current date in the user's selected locale.
`formattedCurrentDateTime`	Displays the current date and time in the user's selected locale.
`formattedCurrentTime`	Displays the current time in the user's selected locale.
`preferredAccessibilityMode`	Preferred accessibility mode (`default`, `inaccessible`, or `screenReader`) for use in the `accessibility-mode` setting in `trinidad-config.xml`.
`preferredDateStyle`	Java date style to be used in `dateStyle` attributes when displaying dates and times.
`preferredTimeStyle`	Java time style to be used in `timeStyle` attributes when displaying dates and times.
`preferredDatePattern`	Java date pattern to be used when displaying dates, and not times.The pattern must be a valid `java.text.SimpleDateFormat` pattern; for example: `dd-MMM-yyyy`. This takes precedence over `preferredDateStyle`.
`preferredTimePattern`	Java time pattern to be used when displaying times, and not dates. This takes precedence over `preferredTimeStyle`.
`preferredDateTimePattern`	Java date/time pattern to be used when displaying dates and times. This takes precedence over `preferredDateStyle` and `preferredTimeStyle`.
`userTimeZone`	Java time zone to be used in `timeZone` attributes when displaying dates and times.
`preferredSkinName`	Preferred skin name to use with the `skin-family` setting in `trinidad-config.xml`.

For example, to display the current date and time in the user's selected locale, time zone, and format, add the following to your page:

Example 4–4 Code for Displaying Current Date and Time in User's Locale

```
<af:outputText value="#{generalSettings.formattedCurrentDateTime}"/>
```

Or, to display a specific date and time:

Example 4–5 Code for Displaying Specified Date and Time

```
<af:outputText value="#{row.dateTimeValue}">
    <af:convertDateTime type="both"
                        dateStyle="#{generalSettings.preferredDateStyle}"
                        timeStyle="#{generalSettings.preferredTimeStyle}"
                        timeZone="#{generalSettings.userTimeZone}"
                        locale="#{facesContext.externalContext.requestLocale}" />
                        pattern="#{generalSettings.preferredDateTimePattern}"
    </af:outputText>>
```

To take advantage of the preferred accessibility mode, you must add an EL (Expression Language) expression to the application's `trinidad-config.xml` file to set the accessibility mode; for example:

Example 4–6 Setting the Accessibility Mode in trinidad-config.xml

```
<accessibility-mode>#{generalSettings.preferredAccessibilityMode}</accessibility-m
ode>
```

4.4.1 Building a Preferences User Interface

You can build a user interface using the General Settings API to enable users to either accept the default settings or apply their desired settings. The API contains the same preference values described in Table 4–4.

Any tool or service in WebCenter Portal that displays a date and time uses the settings configured in General Settings. For information on using the General Settings API to build a preferences user interface, see the Javadoc for `oracle.webcenter.generalsettings`. Specifically, the `oracle.webcenter.generalsettings.model` package contains APIs to get and set preference values for each of the settings. Use these APIs to build a custom user interface to allow users to view and set their preferred values.

> **See Also:** *Java API Reference for Oracle WebCenter Portal*

4.4.2 Using General Settings to Specify the User's Locale

By default, ADF obtains the user's locale from the user's browser settings. You can change this behavior to have the user's preferred locale be set in the application using a Preferences UI.

To make the behavior change, include `oracle.webcenter.generalsettings.model.filter.GeneralSettingsLocaleFilter` as a servlet filter in `web.xml` and `adfBindings`. This servlet filter sets the default locale (ADF Locale) from the General Settings locale preference instead of from the user's browser.

Add the General Setting locale filter to `web.xml` with the following rules:

Define the filter. For example:

```
      <filter>
         <description>
            WebCenter General Settings locale setting.
         </description>
         <filter-name>
            generalSettingsLocaleFilter
         </filter-name>
         <filter-class>

oracle.webcenter.generalsettings.model.filter.GeneralSettingsLocaleFilter
         </filter-class>
      </filter>
```

Add the filter after the `adfBindings` filter with the same servlet-name. For example:

```
      <filter-mapping>
         <filter-name>
            generalSettingsLocaleFilter
         </filter-name>
         <servlet-name>Faces Servlet</servlet-name>
      </filter-mapping>
```

If this filter *is not* set, then the locale is sourced first from the client browser locale setting, and then from the ADF locale setting.

If this filter *is* set, then the locale is sourced from the General Settings. If the General Settings locale preference does not exist, then it reverts to the non-filter default behavior.

Part II

Building WebCenter Portal Framework Applications

This part contains the following chapters:

5

Understanding WebCenter Portal Framework Applications

This chapter introduces the architecture, components, and features of a WebCenter Portal Framework application.

> **Note:** Oracle recommends creating new portals using Portal Builder, rather than Portal Framework. While custom Portal Framework applications may provide a greater degree of flexibility when developing your portal solution, such flexibility typically forfeits product supportability and the ability to upgrade to new WebCenter Portal releases. Using Portal Builder avoids these constraints without sacrificing complexity or scalability. Building portals using Portal Builder is covered in *Building Portals with Oracle WebCenter Portal*.

This chapter includes the following topics:

- Section 5.1, "What Is a WebCenter Portal Framework Application?"
- Section 5.2, "Creating a WebCenter Portal Framework Application"
- Section 5.3, "Exploring the Features of a WebCenter Portal Framework Application"
- Section 5.4, "How are WebCenter Portal Framework Application Files Organized?"
- Section 5.5, "What Is the Portal Life Cycle?"
- Section 5.6, "Developing Your Portal's Look and Feel"
- Section 5.7, "Changing Default Portal Preferences"
- Section 5.8, "Using Iterative and Round-Trip Development Techniques"
- Section 5.9, "Running and Testing a Portal"
- Section 5.10, "WebCenter Portal Framework Applications at Runtime"
- Section 5.11, "Changing the Default Home Page and Login/Logout Target Pages"
- Section 5.12, "Customizing Session Timeouts"
- Section 5.13, "Basic Portal Development Tasks"

5.1 What Is a WebCenter Portal Framework Application?

A WebCenter Portal Framework application is a standard ADF web application that includes portal features, like navigation, pages, page templates, content, and more. This chapter discusses these features in detail.

5.2 Creating a WebCenter Portal Framework Application

> **Note:** Oracle recommends creating new portals using Portal Builder, rather than Portal Framework. While custom Portal Framework applications may provide a greater degree of flexibility when developing your portal solution, such flexibility typically forfeits product supportability and the ability to upgrade to new WebCenter Portal releases. Using Portal Builder avoids these constraints without sacrificing complexity or scalability. Building portals using Portal Builder is covered in *Building Portals with Oracle WebCenter Portal*.

JDeveloper makes it easy to create a new WebCenter Portal Framework application. A wizard guides you through the details and creates a workspace with the required project structures and files. You develop, deploy, and test your portal from within this workspace.

The basic steps for creating a framework application and the resulting project structures are described in Chapter 6, "Creating WebCenter Portal Framework Applications."

5.3 Exploring the Features of a WebCenter Portal Framework Application

Oracle WebCenter Portal Framework adds a number of portal-specific features to an ADF web application. These features are included by default when you create a new application using the WebCenter Portal Framework Application template.

This section discusses some of the main portal features you'll need to know about.

- Section 5.3.1, "Summary of Features"
- Section 5.3.2, "Understanding Pages, Page Templates, and the Portal Page Hierarchy"
- Section 5.3.3, "Securing WebCenter Portal Framework Pages"
- Section 5.3.4, "Understanding the Navigation Model and the Navigation Registry"
- Section 5.3.5, "Understanding Resource Catalogs and the Catalog Registry"
- Section 5.4.4, "Showing Hidden Files in the Application Navigator"

5.3.1 Summary of Features

The basic features provided in a Portal Framework application include:

- **Page hierarchies** – A page hierarchy organizes pages into a tree structure, with a parent-child relationship between pages. This hierarchical structure allows the convenient propagation or inheritance of security settings from pages to sub pages. See Section 5.3.2, "Understanding Pages, Page Templates, and the Portal Page Hierarchy."

- **Navigation models** – A navigation model provides the back-end data to the navigation user interface that is displayed in the portal. Navigation models are highly flexible, with a wide set of APIs that control navigation to pages, task flows, external sites, portlets, and specific content items. See Section 5.3.4, "Understanding the Navigation Model and the Navigation Registry."
- **Navigation Registries** – A navigation *registry* defines the set of elements that a user can add to a navigation at runtime using the Resource Manager. For information on the Resource Manager, see the "Managing Assets for a Portal Framework Application" section in the *Administering Oracle WebCenter Portal*. See also Chapter 10, "Developing a Navigation Model."
- **Delegated administration** – Delegated administration provides a mechanism for securing portal resources based on user roles. For example, you can allow users in one role (managers, for instance) to access all portal features, but deny certain features to users in another role (employees, for instance). Page hierarchies are the primary container for delegated administration. In both the JDeveloper and browser-based environments, you apply delegated administration to a page hierarchy, and the specific security assignments are automatically propagated down through the hierarchy through pages and sub pages. See Chapter 74, "Securing Your WebCenter Portal Framework Application."
- **Customization** – Users can customize their own portal pages by, for example, adding or removing portlets, changing skins, or rearranging the portal layout. See Section 15, "Creating Pages and Adding Resources."
- **Page templates** – Page templates allow you to define entire page layouts and apply them to pages to create a consistent layout across the portal. For more information, see Section 5.6, "Developing Your Portal's Look and Feel." See also the "Using Page Templates" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.
- **Catalogs and the Catalog Registry** – Catalogs are arbitrary collections of task flows, portlets, content items, and other elements that can be added to an application at runtime. See Chapter 14, "Developing Resource Catalogs."
- **Catalog Registries** – A catalog *registry* defines the set of items that are available for inclusion in your resource catalog. See Chapter 14, "Developing Resource Catalogs."
- **Skins** – Skins define the colors, fonts, images, and some dimensional details like heights and widths, of your application components to present a consistent look and feel across the portal. See Chapter 13, "Developing Skins."
- **Portal Preferences** – You can change default preferences for a portal, including default navigation model, page template, and other components. See Section 5.7, "Changing Default Portal Preferences."

JDeveloper tooling includes editors for creating and modifying page hierarchies, navigation models, catalogs and the catalog registry, page templates, page styles, skins, and delegated administration. In addition, browser-based tools are provided to allow end users and administrators to perform some of these functions. See also Section 5.10.2, "Browser-Based WebCenter Portal Administration Console."

5.3.2 Understanding Pages, Page Templates, and the Portal Page Hierarchy

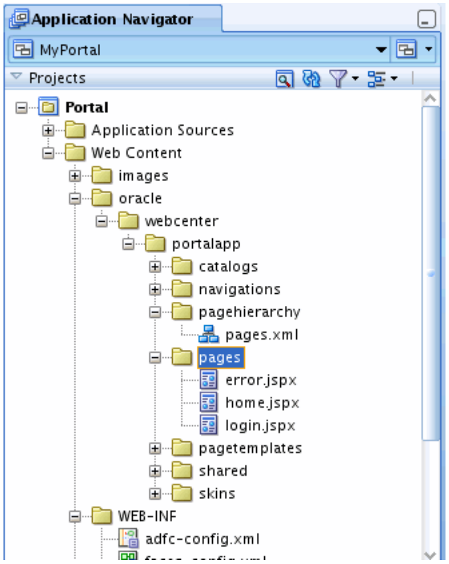
This section introduces three related pieces of an Oracle WebCenter Portal Framework application: pages, page templates, and page hierarchies.

A portal consists of one or more *pages*, and pages play a crucial role in a portal's structure and organization. Generally, a page is a container for one or more entities like task flows, portlets, and content. Pages also typically include a navigation interface, like a navigation tree, tabs, or bread crumbs. In a Portal Framework application, you can find a set of default pages in the Portal project under the folder `oracle/webcenter/portalapp/pages`, as shown in Figure 5–1.

> **Note:** For important information on the organization of files in Portal Framework applications, see Section 5.4, "How are WebCenter Portal Framework Application Files Organized?"

> **Note:** For pages to be used in the page hierarchy, they must be located under `oracle/webcenter/portalapp`.

Figure 5–1 Contents of the pages Folder

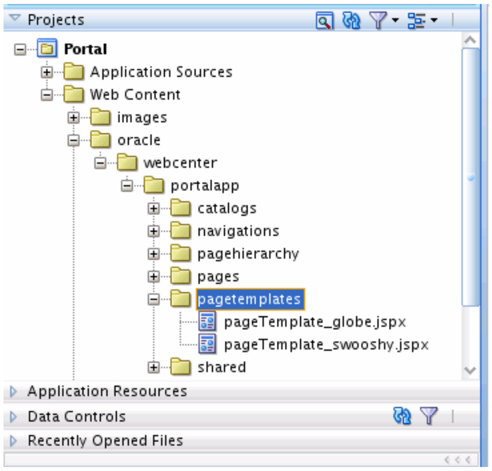


A *page template* lets you specify view elements that you wish to be common to all of your pages. A page template is a JSPX file that includes ADF layout components and other elements. Typically, page templates define a page layout, with headers, footers, and content areas. In addition, the page template usually specifies the positioning and style of the navigation UI for your pages. For example, if you want all of your pages to include the same set of tabs, or if you want each page to have a tree navigation panel and bread crumbs, you can add these components to the template.

> **Tip:** Page templates are referenced by the pages that use them. If you change the underlying page template, all the pages that reference the template automatically inherit the change.

You can find the page template folder in `oracle/webcenter/portalapp/pagetemplates`, as shown in Figure 5–2. Notice that the folder contains two default page templates that are included out of the box.

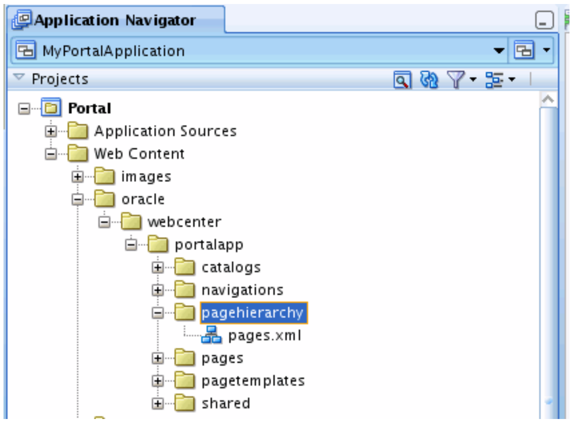
Figure 5–2 Contents of the pagetemplates Folder



A *page hierarchy* is a logical structure that arranges pages through a set of parent-child relationships, where any page can have one or more sub pages. This hierarchical model not only helps define the overall structure of the portal, but also allows child pages to inherit the security policies specified by their parent. The ability for pages to propagate security policies down the hierarchy is particularly convenient for very large portals with dozens or even hundreds of pages: you don't have to set security for every page. Note that when you create a new page, its security policy is automatically set based on where it resides in the page hierarchy.

You can find the page hierarchy files in the `oracle/webcenter/portalapp/pagehierarchy` folder, as shown in Figure 5–3.

Figure 5–3 Contents of the pagehierarchy Folder



Note: The page hierarchy files are XML files that contain the metadata that define the page hierarchy structure. It is not recommended that you attempt to edit these files directly; rather, use the Page Hierarchy editor to create and work with page hierarchies, as explained below.

A basic page hierarchy model is included with applications created from the WebCenter Portal Framework Application template. You can modify the page hierarchy with the Page Hierarchy editor in JDeveloper. To access this editor:

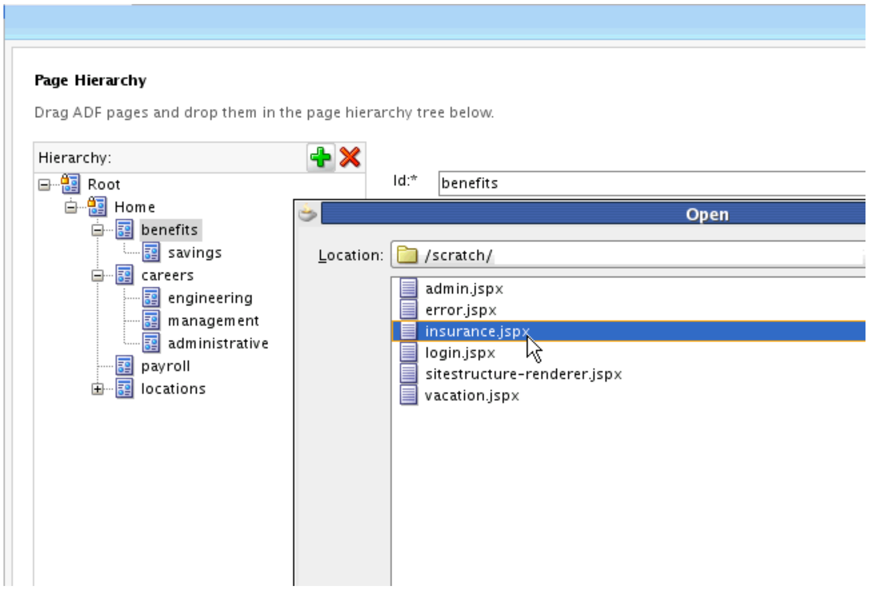
1. Open the portal project in the Application Navigator, as shown in Figure 5–3.
2. Right-click the `pagehierarchy` folder.
3. Select **Edit Page Hierarchy** from the menu.

> **Tip:** You can also bring up the Page Hierarchy editor by right-clicking a portal page file (JSPX file) and selecting **Edit Page Hierarchy** from the menu or by opening a page hierarchy file directly.

After you have created pages for your portal, use the editor to build up the site structure. You can drag and drop pages (one or several at a time) from anywhere in the `oracle/webcenter/portalapp` folder in the Application Navigator directly into the Page Hierarchy editor and position them in the hierarchy as you wish.

Alternatively, you can use the **Add** button located above the hierarchy pane. Clicking this button pops up a dialog that allows you to choose a page from within your project. This page is added as a child of the page that is currently selected in the editor, as shown in Figure 5–4.

Figure 5–4 Adding a Page to the Page Hierarchy



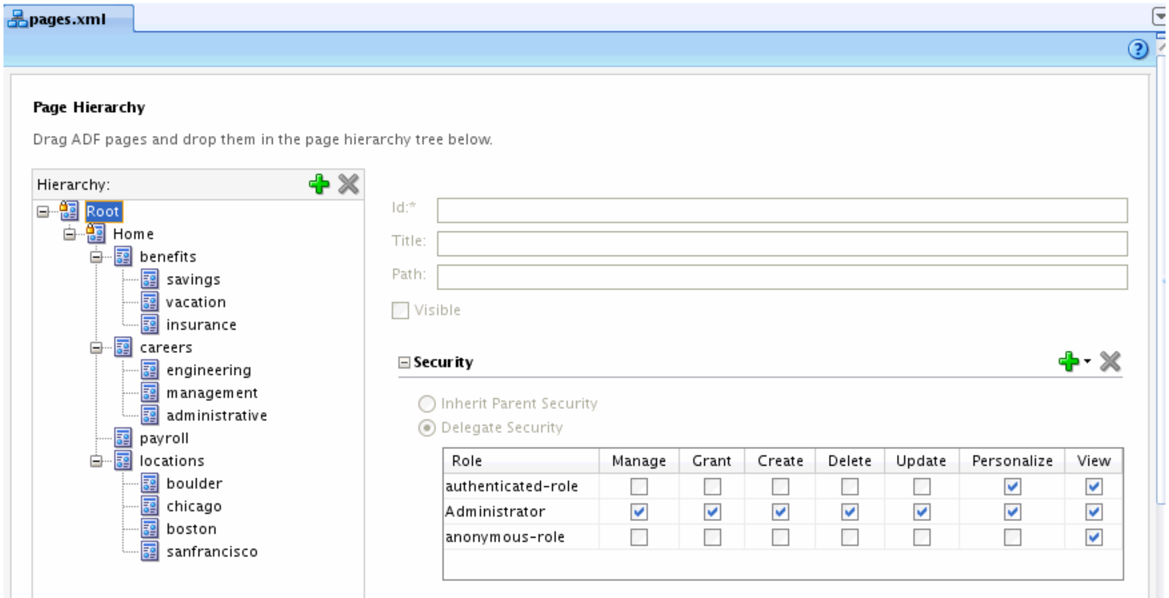
In the editor, you can rearrange page nodes within the tree display simply by dragging and dropping them. For large hierarchies, you may also find it useful to use the Change Parent dialog by right-clicking a page in the hierarchy and choosing **Change Parent Page**. This dialog allows you to choose a new parent for the selected page from a separate window, instead of having to scroll through a hierarchy that may be too large to view all at once.

> **Tip:** Right-click a node in the Page Hierarchy editor and select **Go to Page** to open the associated JSPX (portal page) file.

> **Note:** For each new level you create in the page hierarchy, a `pagehierarchy/pages/*Pages.xml` file is created. These files contain a reference to the pages in that level. For more information, see Section 74.6.2, "Building a Page Hierarchy."

Figure 5–5 shows the structure of a simple human resources site that includes top level pages Benefits, Careers, Payroll, and Location. The Benefits, Careers, and Location pages each have multiple child pages.

Figure 5–5 Page Hierarchy Editor



Page Hierarchy

Drag ADF pages and drop them in the page hierarchy tree below.

- Root
  - Home
    - benefits
      - savings
      - vacation
      - insurance
    - careers
      - engineering
      - management
      - administrative
    - payroll
    - locations
      - boulder
      - chicago
      - boston
      - sanfrancisco

Id:*

Title:

Path:

☐ Visible

Security

○ Inherit Parent Security

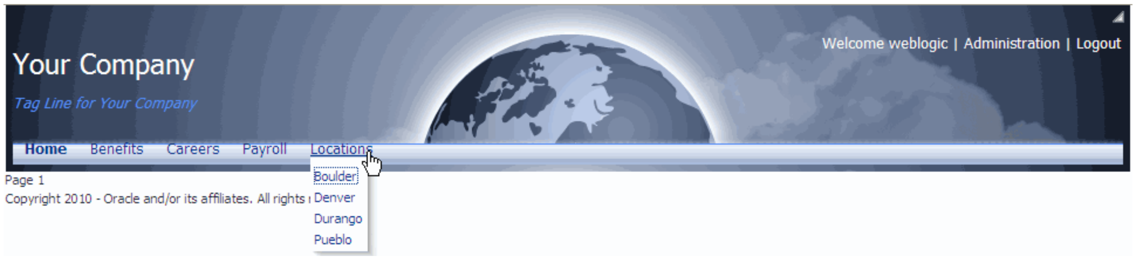
● Delegate Security

Role	Manage	Grant	Create	Delete	Update	Personalize	View
authenticated-role	☐	☐	☐	☐	☐	☑	☑
Administrator	☑	☑	☑	☑	☑	☑	☑
anonymous-role	☐	☐	☐	☐	☐	☐	☑

Notice how this hierarchy is realized when you run the portal, shown in Figure 5–6. In this example, the pages use the default page template, which includes a navigation bar. The bar is rendered as tab-like links across the page. Because this navigation UI was added to the page template, it will appear consistently on all pages that use the template. In addition to the default navigation component, you could add a navigation tree, bread crumbs, or other styles of navigation UI to the page template. In many cases, the template will include two or more navigation components.

For more information on page templates, see Section 5.6, "Developing Your Portal's Look and Feel." For more information on the default navigation model and on creating navigation models and user interfaces, see Section 10, "Developing a Navigation Model."

Figure 5–6 Portal Navigation Bar



Your Company
Tag Line for Your Company
Welcome weblogic | Administration | Logout
Home
Benefits
Careers
Payroll
Locations
Boulder
Denver
Durango
Pueblo
Page 1
Copyright 2010 - Oracle and/or its affiliates. All rights

For more information on page hierarchies, see Section 74.6.2, "Building a Page Hierarchy."

5.3.3 Securing WebCenter Portal Framework Pages

Note: See also Section 6.5, "How Is Framework Application Security Configured by Default?"

At design time, you can set up security for your portal's pages in the Page Hierarchy editor. As mentioned previously, the page hierarchy defines the structural relationships between pages (parent-child) and it allows for child pages to inherit the security policies of their parents.

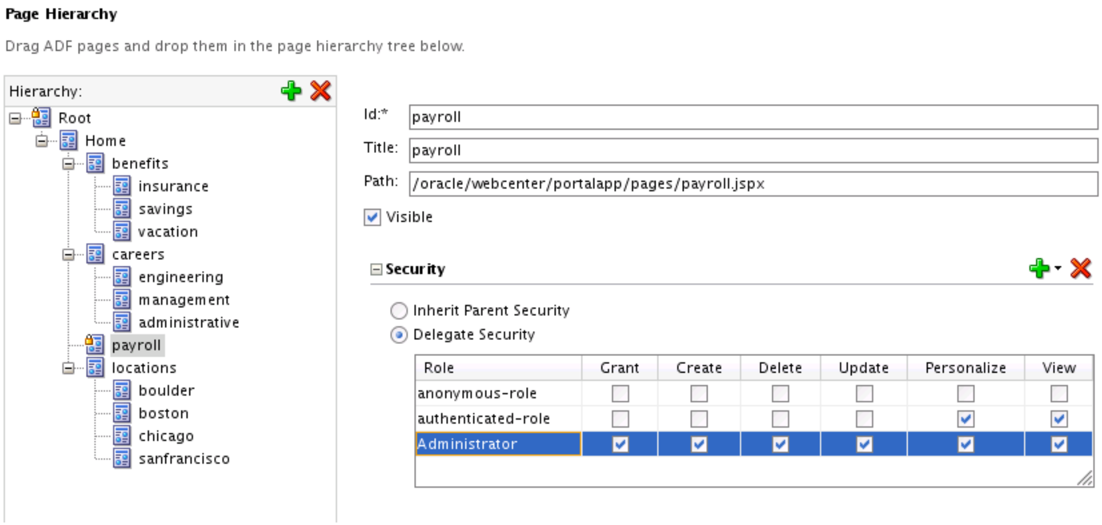
Note: You can secure pages either through the ADF page security model or through the hierarchical WebCenter Portal page security model. When a page is added to the page hierarchy, it implies that it's secured through the hierarchical security model. See also Section 74.6, "Using the Page Hierarchy Security Editor."

As shown in Figure 5–7, the Page Hierarchy editor includes a Security section that lets you specify role-based security policies for pages. The security interface lets you decide whether you want the policies to be inherited or delegated. If you specify inheritance, then the security policies for that page will be inherited from its parent page. If you delegate security, then that policy will override the parent's security and the policy will be propagated to all child pages that are inheriting security.

Tip: A small padlock icon appears next to pages for which the inherited security settings are overwritten. In other words, you'll see this icon to indicate pages that have delegated security set on them.

For example, in Figure 5–7, the Payroll page is configured so that Administrators have full access to the page, while authenticated users can only view and personalize the page. Anonymous users cannot access the page at all. Later, in Section 5.3.4, "Understanding the Navigation Model and the Navigation Registry," we'll discuss how the security policy set for a page also affects the appearance of the navigation UI. In this example, because the Payroll page is only available to Administrators and authenticated users, the navigation UI will only show the Payroll page link to authenticated users and Administrators. For all other users, the Payroll link will not show up at all.

Figure 5–7 Security Setting for the Payroll Page



Page Hierarchy

Drag ADF pages and drop them in the page hierarchy tree below.

Hierarchy:

- Root
  - Home
    - benefits
      - insurance
      - savings
      - vacation
    - careers
      - engineering
      - management
      - administrative
    - payroll
    - locations
      - boulder
      - boston
      - chicago
      - sanfrancisco

Id:* payroll

Title: payroll

Path: /oracle/webcenter/portalapp/pages/payroll.jspx

☑ Visible

Security

○ Inherit Parent Security

● Delegate Security

Role	Grant	Create	Delete	Update	Personalize	View
anonymous-role	☐	☐	☐	☐	☐	☐
authenticated-role	☐	☐	☐	☐	☑	☑
Administrator	☑	☑	☑	☑	☑	☑

5.3.4 Understanding the Navigation Model and the Navigation Registry

It's important to distinguish the navigation model from the page hierarchy. First, the page hierarchy specifies a parent-child relationship between pages. As discussed previously, pages can have one or more child pages. Secondly, the page hierarchy allows for security policies to be inherited from parent pages to child pages, or sub pages, down through the hierarchy. Note that page hierarchy only specifies a relationship between pages; other resources, like task flows, portlets, and external links cannot be included in a page hierarchy.

The page hierarchy provides a security inheritance model that allows administrators to easily control security on portals that have a very large number of pages. For example, if your portal has 100 pages, you can specify security policies on the root of the page hierarchy, and all 100 pages will inherit those policies. Then, if you wish to modify the settings on any page below the root, you can do that, and those settings will propagate to any of that page's sub-pages. You can also override the inherited settings and apply security settings to individual pages anywhere in the hierarchy.

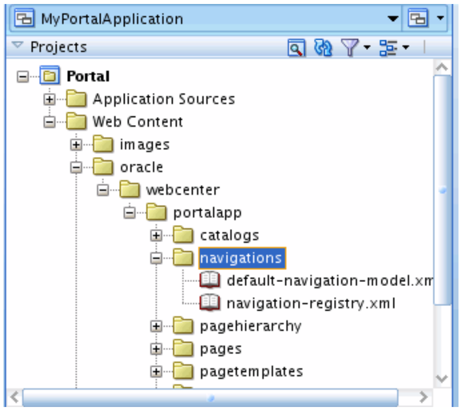
The navigation model, by contrast, defines a navigational structure, keeps track of navigational data, and provides that data to the view layer of the application. While a page hierarchy only consists of pages, a navigation model can consist of a variety of resources, like task flows, pages, external links, and others.

It's important to note that the navigation model is aware of the security policies that have been applied to the elements (pages, links, task flows, and so on) that the navigation model controls. If the authenticated user is not authorized to see a particular page, the navigation model, by default, hides any navigational links to that page. For any resources that do not have security defined in the portal, like external links, the developer has to control visibility manually. One way to do this is to add an EL expression to the page or page template to control visibility (show/hide) of the resource. For more information, see Chapter 10, "Developing a Navigation Model."

For example, if your portal pages include a tree navigation UI, that UI asks the navigation model questions like: what pages or other elements can the user navigate to and what is the current navigational state of the portal. The first question informs which links the UI can display. The second informs the UI how to display those links. If the navigation view is a tree, the model tells the UI, for example, which page is currently selected. This allows the tree UI to display the node representing that page correctly, as an open folder for example, or as a selected page.

In JDeveloper, use the Navigation Editor to modify the navigation model. To open the editor, double-click the file `default-navigation-model.xml` in the `navigations` folder, shown in Figure 5–8.

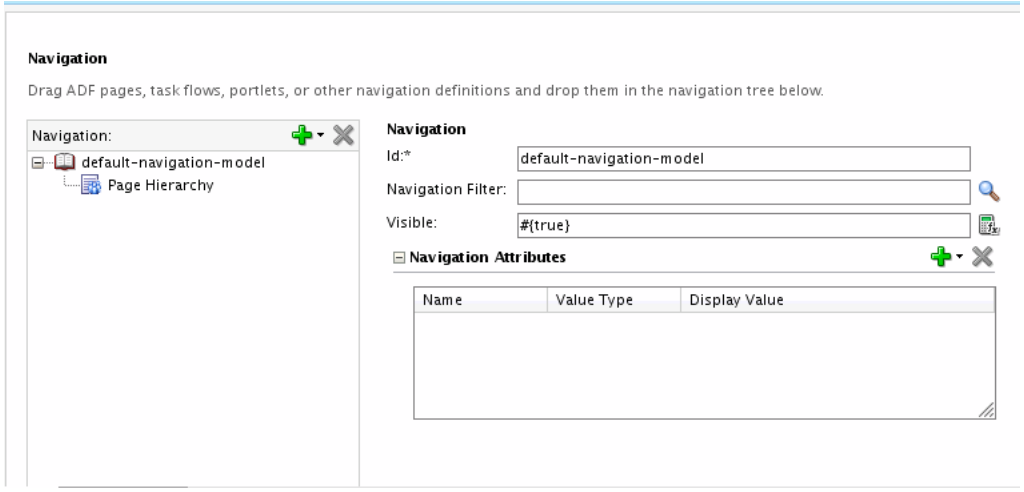
Figure 5–8   Contents of the navigations Folder



The `navigation-registry.xml` file is used by the Resource Manager when a user creates or edits a navigation model. The registry defines the superset of all items that are available to be included in a model that you create or edit. You can create multiple navigation models for an application, but an application can only have one navigation registry file. For more information on the navigation model, the Navigation Editor, and the registry, see Chapter 10, "Developing a Navigation Model."

The default navigation model, shown in Figure 5–9, includes one node called Page Hierarchy. By default, this node points to the default page hierarchy file, `pages.xml`, in the pagehierarchy folder. This node tells the navigation model to refer to the page hierarchy's structure and communicate that structure to the navigation UI so that it can be rendered. As seen previously in Figure 5–6, the default UI displays the page hierarchy as tab-like links. The information provided by the model allows each link to display its sub-page links in a drop-down menu whenever the mouse pointer hovers over it.

Figure 5–9   The Default Navigation Model



Drag ADF pages, task flows, portlets, or other navigation definitions and drop them in the navigation tree below.

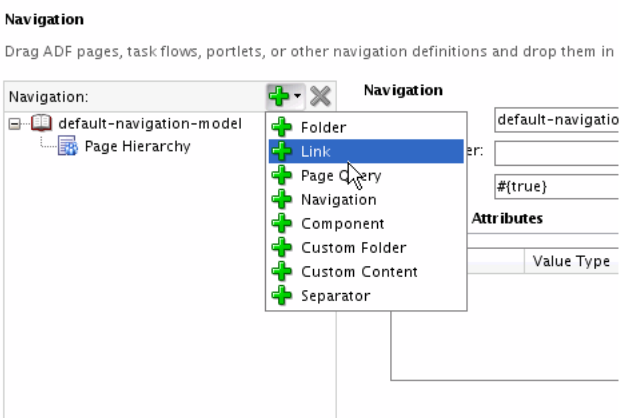
Id:* default-navigation-model

Navigation Filter:

Visible: #{true}

The navigation model can include several kinds of navigation elements. As we've seen, the model can include both page hierarchies and single pages. But you can also create navigation to other elements, like links to external web pages or specific content.

Figure 5–10 Adding a Link to the Navigation Model



For more information, see Chapter 10, "Developing a Navigation Model."

5.3.5 Understanding Resource Catalogs and the Catalog Registry

A catalog specifies a collection of an otherwise unrelated group of elements, like layout components, task flows, portlets, documents, and others, that an authorized user can add to a portal at runtime. Oracle WebCenter Portal's Composer uses catalogs at runtime to determine which elements an authorized user can add to a portal page.

The Portal Framework application template includes a default resource catalog (`default-catalog.xml`) and a catalog registry file (`catalog-registry.xml`). These files are located in `oracle/webcenter/portalapp/catalogs`.

When a user edits pages at runtime using Composer, the default catalog file specifies all of the items that are available to be added to a page. The catalog registry file is used by the Resource Manager when a user creates or edits a resource catalog. The registry defines the superset of all items that are available to be included in a catalog that you create or edit.

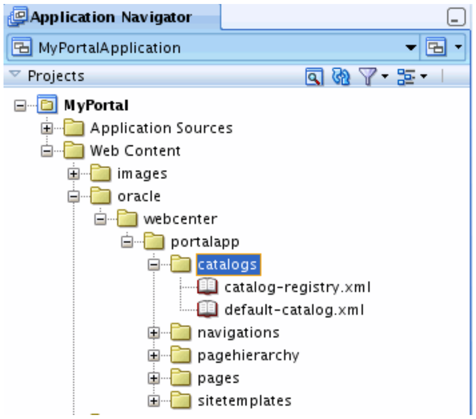
You can create multiple catalogs for an application, but an application can only have one catalog registry file. For more information, see Chapter 14, "Developing Resource Catalogs."

At development time, you can edit existing catalogs using the Resource Catalog editor. To open the editor, open the catalog file (for example, `default-catalog.xml`) in the `catalogs` folder in Application Navigator, as shown in Figure 5–11.

To create a new catalog, select **New** from the File menu. In the New Gallery dialog, select the **All Technologies** tab, then select **Portal Framework** under the Web Tier node. Then, select **Resource Catalog** and click **OK**. Use the Create Application Resource Catalog dialog to create the new catalog.

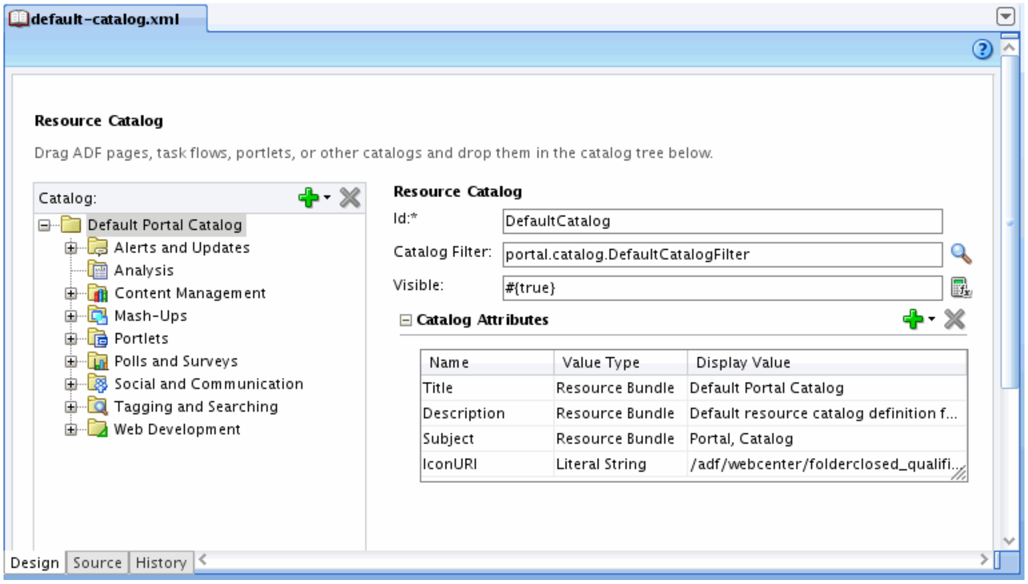
> **Tip:** You can also edit navigation registries using the Resource Catalog editor.

Figure 5–11 Contents of the catalogs Folder



The Resource Catalog editor is shown in Figure 5–12.

Figure 5–12 Resource Catalog Editor in JDeveloper



Resource Catalog

Drag ADF pages, task flows, portlets, or other catalogs and drop them in the catalog tree below.

Resource Catalog

Id:* DefaultCatalog

Catalog Filter: portal.catalog.DefaultCatalogFilter

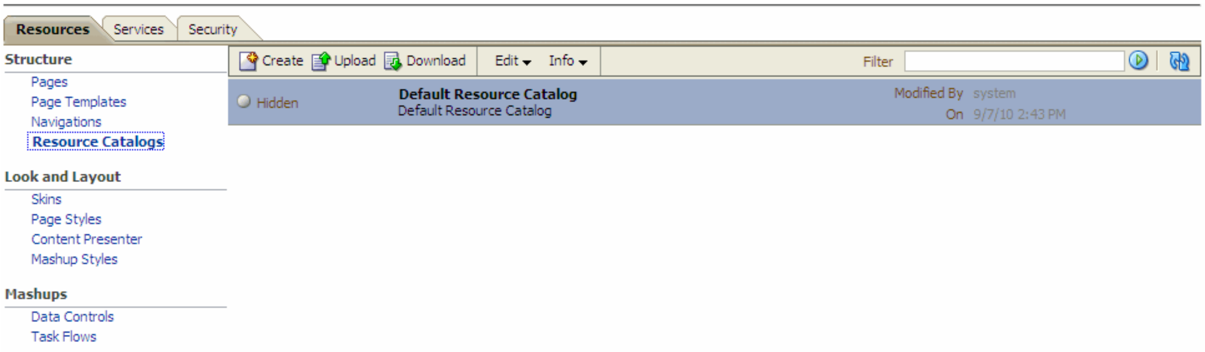
Visible: #{true}

Catalog Attributes

Name	Value Type	Display Value
Title	Resource Bundle	Default Portal Catalog
Description	Resource Bundle	Default resource catalog definition f...
Subject	Resource Bundle	Portal, Catalog
IconURI	Literal String	/adf/webcenter/folderclosed_qualifi...

Figure 5–13 shows the resource catalog editor in the runtime administration tool.

Figure 5–13 Resource Catalogs Editor at Runtime



Hidden

Default Resource Catalog
Default Resource Catalog

Modified By system
On 9/7/10 2:43 PM

For example you can create separate catalogs for each of several departments.

Tip: Individual catalog entries can be shown or hidden based on user roles.

5.4 How are WebCenter Portal Framework Application Files Organized?

When you run through the Portal Framework application wizard, a large number of project artifacts are configured and installed in the project directory. JDeveloper presents a streamlined view of your project in the Application Navigator. You can also view your portal project directly on your filesystem.

- Section 5.4.1, "Understanding the Organization of a WebCenter Portal Framework Application"
- Section 5.4.2, "Viewing Your Portal Project on the Filesystem"
- Section 5.4.3, "Viewing Your Portal Project in JDeveloper"
- Section 5.4.4, "Showing Hidden Files in the Application Navigator"

5.4.1 Understanding the Organization of a WebCenter Portal Framework Application

This section explains how a Portal Framework application is organized, and why it is organized the way it is.

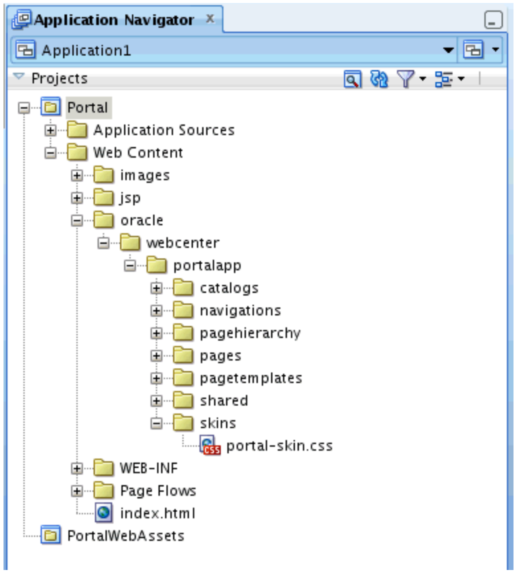
5.4.1.1 How Is a WebCenter Portal Framework Application Organized?

When you create a new Portal Framework application in JDeveloper, a large number of files are automatically placed in the project. You can see these files organized in the Application Navigator view in JDeveloper.

Looking at the Application Navigator, the first thing you will notice is that a Framework application consists of two projects. The first is called (by default) **Portal**, as shown in Figure 5–14. You can change this name when you create the application or anytime afterwards. Most of the files in a project are placed in the `<application_root>/<project_root>/public_html/oracle/webcenter/portalapp` directory.

The second project is called **PortalWebAssets**. The PortalWebAssets project includes static application resources like HTML and image files. By separating the static resources into a separate project, it is possible to deploy those resources to a dedicated server. For more information, see Section 6.4, "Understanding the PortalWebAssets Project."

Figure 5–14 WebCenter Portal Framework Application in the Application Navigator



5.4.1.2 Why Is a WebCenter Portal Framework Application Organized the Way It Is?

It is important to understand the following distinctions between files that are stored in your application:

> **Note:** It is important to understand these distinctions because some files, like XML files, you might not expect to find under `public_html`. (Because in a standard Web application, most files under this directory are directly URL accessible from a browser once the application is deployed.) Developers must keep in mind that portal files require this particular structure; you must not attempt to create portal artifacts in other locations.

- Files located in the `<application_root>/<project_root>/public_html/oracle/webcenter/portalapp` directory:
  - are deployed to the Metadata Services (MDS) repository.
  - can be registered as portal resources and managed at runtime with the Resource Manager.
  - are generally secured using WebCenter Permissions (if they are portal resources).
- Files located elsewhere under `<application_root>/<project_root>/public_html`:
  - are deployed to the application WAR file.
  - cannot be registered as portal resources and therefore cannot be managed with the Resource Manager.
  - are secured using the native permission class of the artifact.

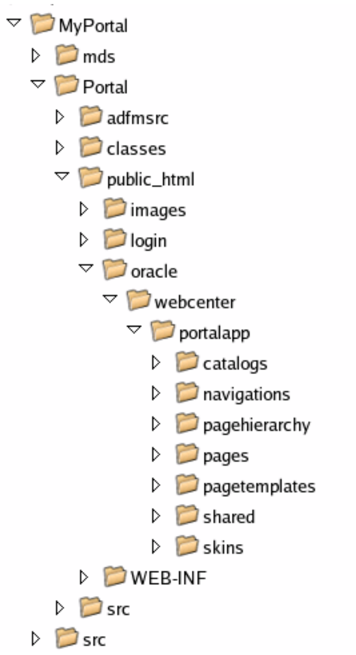
It is important to understand that a Portal Framework application is structured this way so that you can make informed decisions when you create your own pages. In some cases, specifically with JSPX pages, you might not want to create a page under `oracle/webcenter/portalapp`. It depends on the intended use of the page in your application.

5.4.2 Viewing Your Portal Project on the Filesystem

The simplest way to locate your project files on the file system is to select a file or folder in the Application Navigator and then select **Copy Path** from the Edit menu. This function places the path to the file or folder on the clipboard, which you can then paste into a command shell or file browser.

Figure 5–15 shows the filesystem organization of a sample Portal Framework application. Many of the project's files are organized under the `public_html` folder.

Figure 5–15 Sample WebCenter Portal Framework Application on the Filesystem



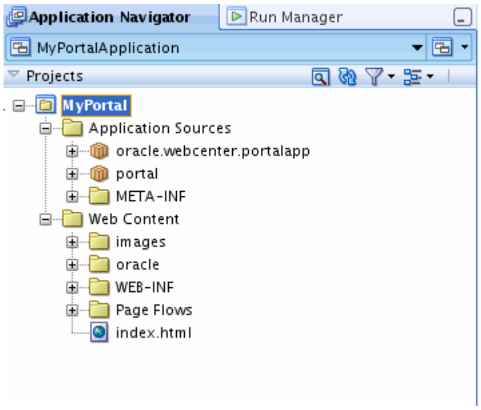
As you will see, JDeveloper presents a somewhat different, more streamlined view of your project, as discussed in the next section, Section 5.4.3, "Viewing Your Portal Project in JDeveloper."

5.4.3 Viewing Your Portal Project in JDeveloper

The intent of the project view in JDeveloper is to present the project files that a developer is likely to work with. These files include pages, page hierarchies, navigation models, page templates, catalogs, XML configuration files, Java source files, images, and so on.

In JDeveloper, portal projects are organized into two folders: Application Sources and Web Content, as shown in Figure 5–16.

Figure 5–16 Organization of a Portal Project in JDeveloper



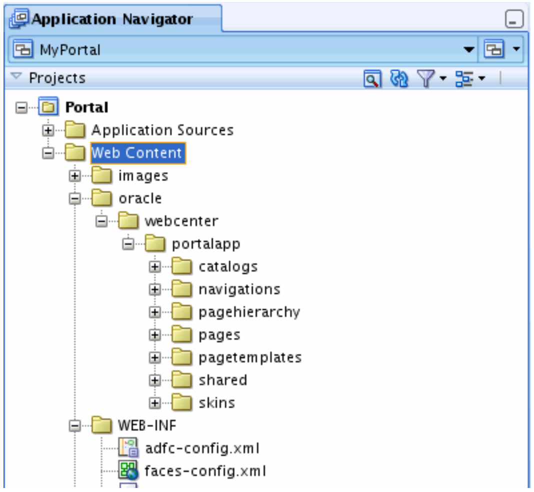
The **Application Sources** folder is primarily a repository for source code and page definition files. In addition to any Java classes you write for your application, Application Sources includes:

- **oracle.webcenter.portalapp** – Includes XML definition files for pages, page templates, page catalogs, navigations. A page definition file specifies ADF bindings, page parameters, and permission settings. For example, the page definition file specifies the page's parent and child pages, if any. The file also specifies security policy information, like the operations that are permitted on the page. Default page definition files are created automatically when you add a portal page to a page hierarchy.
- **portal** – Includes resource bundles, source code, and other Java artifacts.
- **META-INF** – Includes files for specifying data bindings and page template metadata.

The **Web Content** folder contains all of the files that make up your web project, like pages, page hierarchies, navigation models, and so on. These are the files that you will actively create and modify as you develop your Portal Framework application.

Figure 5–17 shows the basic structure of the Web Content folder. Note that many of the files you will create and modify are located in the `oracle/webcenter/portalapp` sub folder. This folder's contents – catalogs, navigations, page hierarchy, pages, skins, and pagetemplates – make up the basic components of a portal. For detailed information on these portal components, see Section 5.4.1, "Understanding the Organization of a WebCenter Portal Framework Application."

Figure 5–17 The Web Content Folder



> **Tip:** If you prefer to view the local file system hierarchy in the Application Navigator, click the **Navigator Display Options** icon in the Projects panel and select **Group by Directory**.

The **PortalWebAssets** project includes static application resources like HTML and image files. By separating the static resources into a separate project, it is possible to deploy those resources to a dedicated server. For more information, see Section 6.4, "Understanding the PortalWebAssets Project."

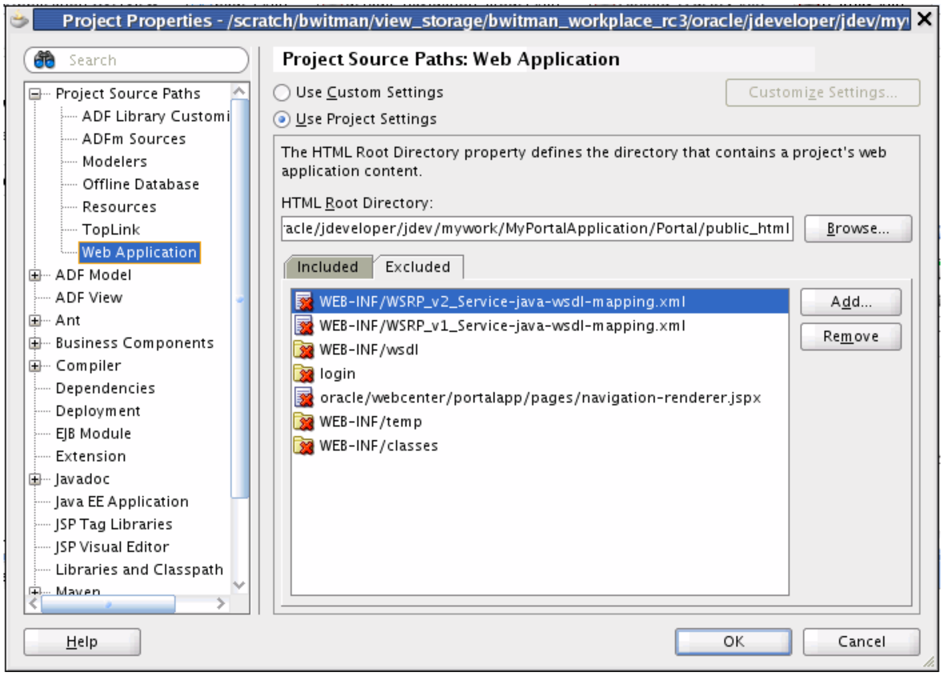
5.4.4 Showing Hidden Files in the Application Navigator

By default, a few files are excluded from view in the Application Navigator. These files are excluded because it is unlikely you'll ever need to edit them. However, because there are some use cases where you might want to edit them, you need to be able to add them back to the JDeveloper UI.

To locate the excluded files:

1. Right-click the project folder and select **Project Properties** from the menu.
2. In the Project Properties dialog, select **Web Application** under the Project Source Paths node.
3. Select the Excluded tab, as shown in Figure 5–18.

Figure 5–18 The Exclude Tab



Project Source Paths: Web Application

○ Use Custom Settings

● Use Project Settings

The HTML Root Directory property defines the directory that contains a project's web application content.

HTML Root Directory: acle/jdeveloper/jdev/mywork/MyPortalApplication/Portal/public_html

WEB-INF/WSRP_v2_Service-java-wsdl-mapping.xml
WEB-INF/WSRP_v1_Service-java-wsdl-mapping.xml
WEB-INF/wsdl
login
oracle/webcenter/portalapp/pages/navigation-renderer.jspx
WEB-INF/temp
WEB-INF/classes

4. Select an element from the excluded list and click **Remove** to remove it from the excluded list. As a result, the element is automatically included in the appropriate folder in the Application Navigator.

As an example, the `navigation-renderer.jspx` file is used to render resources in the context of a page template. If you wanted to change the way an external URL is displayed within a page, you would first remove the `navigation-renderer.jspx` file from the excluded list in order for it to appear under the `pages` folder in the Application Navigator. Then, you could open the page and edit it as desired.

5.5 What Is the Portal Life Cycle?

The portal life cycle describes the creation process of a portal from development through staging and testing to a production server. Many actors participate in the life cycle including software developers, content modelers, content contributors, IT administrators, portal site administrators. For detailed information on managing all the stages of the portal life cycle, see Chapter 8, "Understanding the WebCenter Portal Framework Application Life Cycle."

5.6 Developing Your Portal's Look and Feel

You can design the look and feel by adding certain presentation elements, such as banners, navigations, and footers, around the content area. Once you settle on a look and feel that is suitable for your portal structure, you can save these settings as a page template, which can be used to create a portal. In addition, you may want use the same settings across pages in your portal. With the use of page templates and page styles, you can achieve some consistency across pages in your portal. See Chapter 5.6, "Developing Your Portal's Look and Feel."

You can also develop custom skins for your portal. A skin is a style sheet based on the CSS 3.0 syntax specified in one place for an entire application. Instead of providing a style sheet for each component in your application or inserting a style sheet on each page, you can create one skin for the entire application. Every component automatically uses the styles as described by the skin. When you use a skin, you do not have to make design-time changes to portal pages to change their appearance. See Chapter 13, "Developing Skins."

Although the basic look and feel design can be created in JDeveloper at design time, the Resource Manager enables administrators and users with the appropriate privileges to continue developing the portal's look and feel after the application has been deployed. For example, the Resource Manager lets you add and remove pages, add navigation user interfaces, and change the page templates, skins, and page styles. For more information about these and other Resource Manager features, see Chapter 15, "Creating Pages and Adding Resources."

5.7 Changing Default Portal Preferences

A Portal Framework application includes a set of preferences that specify certain default portal components. This section describes these preferences and explains how to change their default values.

5.7.1 What Are the Default Portal Preferences?

Table 5–1 lists the portal preferences and their default configuration files.

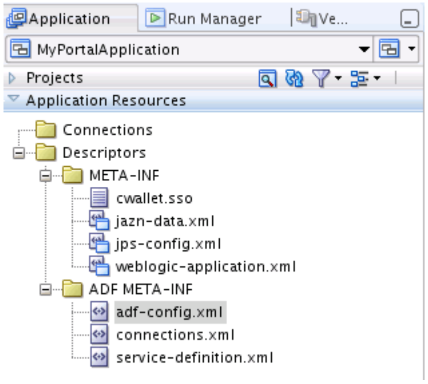
Table 5–1 Default Preferences

Preference	Default Setting
Navigation Model	`/oracle/webcenter/portalapp/navigations/default-navigation-model.xml`
Resource Catalog	`/oracle/webcenter/portalapp/catalogs/default-catalog.xml`
Page Template	`/oracle/webcenter/portalapp/pagetemplates/pageTemplate_globe.jspx`
Navigation Renderer	`/oracle/webcenter/portalapp/pages/navigation-renderer.jspx`
Skin	`portal`

5.7.2 How to Change the Default Preferences in JDeveloper

To change the default preferences in JDeveloper, directly edit the `adf-config.xml` file. To locate this file in JDeveloper, open the **Application Resources** part of the Application Navigator. Then, open the **Descriptors** folder and the **ADF META-INF** folder, as shown in Figure 5–19.

Figure 5–19 Location of the adf-config.xml File in JDeveloper



For example, to change the default navigation model file, edit the value of this preference:

```
<portal:preference id="oracle.webcenter.portalapp.navigation.model"
   desc="Default Navigation Model"
   value="/oracle/webcenter/portalapp/navigations/default-navigation-model.xml"
   resourceType="navigation" display="true"
/>
```

Preferences can also be changed at runtime under the **Configurations** tab of the Administration page. From this page, you can configure the default page template, skin, resource catalog, and navigation component in a runtime application. For details, see the "Configuring Defaults for Portal Framework Applications" section in the *Administering Oracle WebCenter Portal*.

5.8 Using Iterative and Round-Trip Development Techniques

Iterative development is a productivity feature that helps speed up the development process. Iterative development lets you make and save changes to your Portal Framework application in JDeveloper while the app is running on the Integrated WebLogic Server and immediately see the effect of those changes simply by refreshing the current page in your browser. The iterative development feature is enabled by default in a Framework application. For information on enabling the iterative development feature in Portal Framework applications, see Section 2.3.1, "Preparing for Iterative Development in a Portal Framework Application." See also Section 8.7, "Understanding Iterative Development."

Round-trip development refers to features and techniques that allow you to retrieve resources from a deployed, runtime portal back to JDeveloper for maintenance or enhancement. After modifying a resource in JDeveloper, you can use the Resource Manager to upload the resource back to the deployed portal. WebCenter Portal's round-trip development features provide a simple, convenient way to modify portal resources without redeploying the entire application.

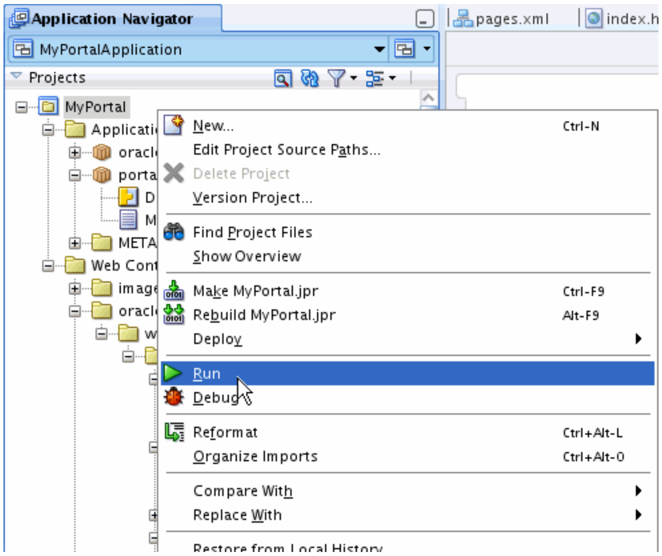
5.9 Running and Testing a Portal

JDeveloper provides several ways to run a Portal Framework application for testing purposes in the Integrated WebLogic Server in JDeveloper:

- Right-click the portal project name in the Application Manager and select **Run**, as shown in Figure 5–20. If the server is not running, this action starts the server and (re)deploys the application.

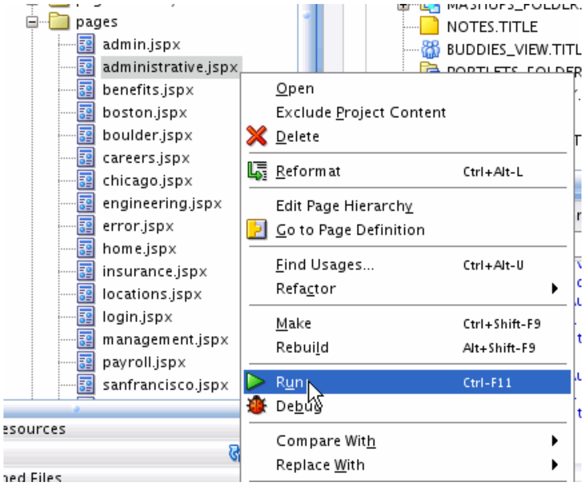
  > **Tip:** You can change the default portal home page. For details, see Section 5.11, "Changing the Default Home Page and Login/Logout Target Pages."

Figure 5–20 Running the Portal



- Right-click a page in the pages folder in the Application Manager and select **Run**, as shown in Figure 5–21. If the server is not running, this action starts the server, (re)deploys the application, and displays the selected page.

Figure 5–21 Running a Page



- You can also run a portal by selecting **Run *portal name*** from the **Run** menu.

5.10 WebCenter Portal Framework Applications at Runtime

Oracle WebCenter Portal Framework provides a number of interesting runtime features. Runtime features refer to features that are accessible from a browser.

- Section 5.10.1, "Preserving Runtime Customizations on the Integrated WebLogic Server"
- Section 5.10.2, "Browser-Based WebCenter Portal Administration Console"
- Section 5.10.3, "How Security Settings Affect the Runtime Portal"
- Section 5.10.4, "Editing of Portal Resources Using Browser-Based Tools"

5.10.1 Preserving Runtime Customizations on the Integrated WebLogic Server

If you are using the Integrated WebLogic Server in a development environment (running the portal through JDeveloper) any changes you make to the portal at runtime (using the Resource Manager) are discarded upon redeployment by default. For example, if you use the Resource Manager to make changes like adding entitlements to a page, changing the layout, or modifying the navigation model, these changes will not be preserved the next time you redeploy the application. For more information on the Resource Manager, see Chapter 15, "Creating Pages and Adding Resources."

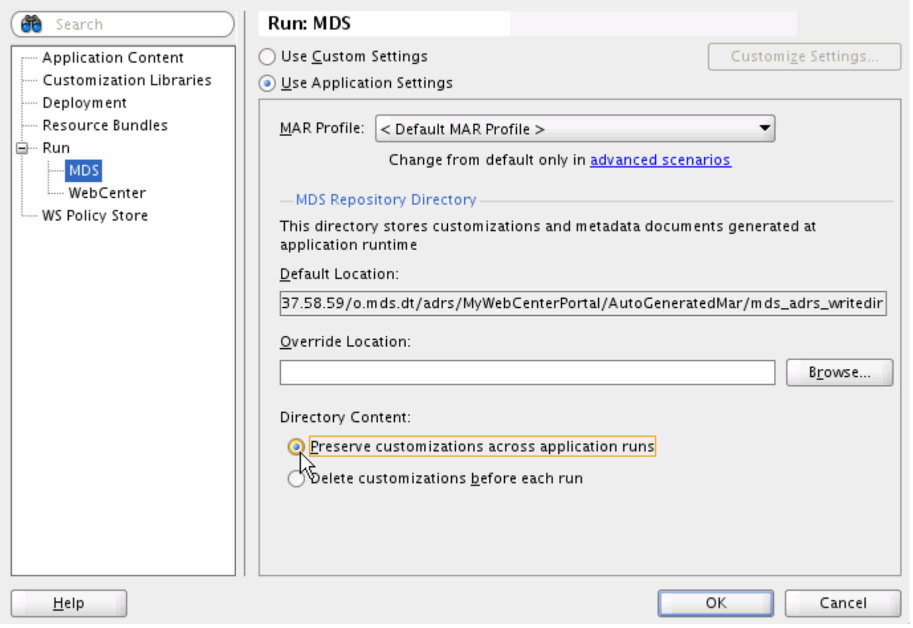
Note: The information in this section only applies to a portal that is running with the Integrated WebLogic Server in a development environment. When you deploy the portal to a production environment, runtime changes are never discarded.

Note: Customizations are not preserved by default as a convenience for developers working in the JDeveloper environment. When you modify a file at runtime, a new version of the file is written to the MDS write directory. This new version then takes precedence over the version in JDeveloper. At that point, if you change a setting in JDeveloper and refresh your browser, the change will not show up. Therefore, while you're working in JDeveloper, it's much more convenient and natural not to preserve runtime customizations.

It is possible to change the default behavior, and preserve runtime customizations between runs. For example, you may wish to do this to enable certain testing scenarios. To allow customizations to be preserved between application deployments (runs):

1. Select **Application Properties** from the Application Menu.
2. In the Application Properties dialog, select **MDS** under the Run node.
3. Under Directory Content, select **Preserve customizations across application runs** to disable the default, which is to discard customizations before each run. See Figure 5–22.

Figure 5–22 Selecting Preserve Customizations Across Application Runs



Run: MDS

○ Use Custom Settings

● Use Application Settings

MAR Profile: < Default MAR Profile >

Change from default only in advanced scenarios

MDS Repository Directory

This directory stores customizations and metadata documents generated at application runtime

Default Location:

37.58.59/o.mds.dt/adrs/MyWebCenterPortal/AutoGeneratedMar/mds_adrs_writedir

Override Location:

Directory Content:

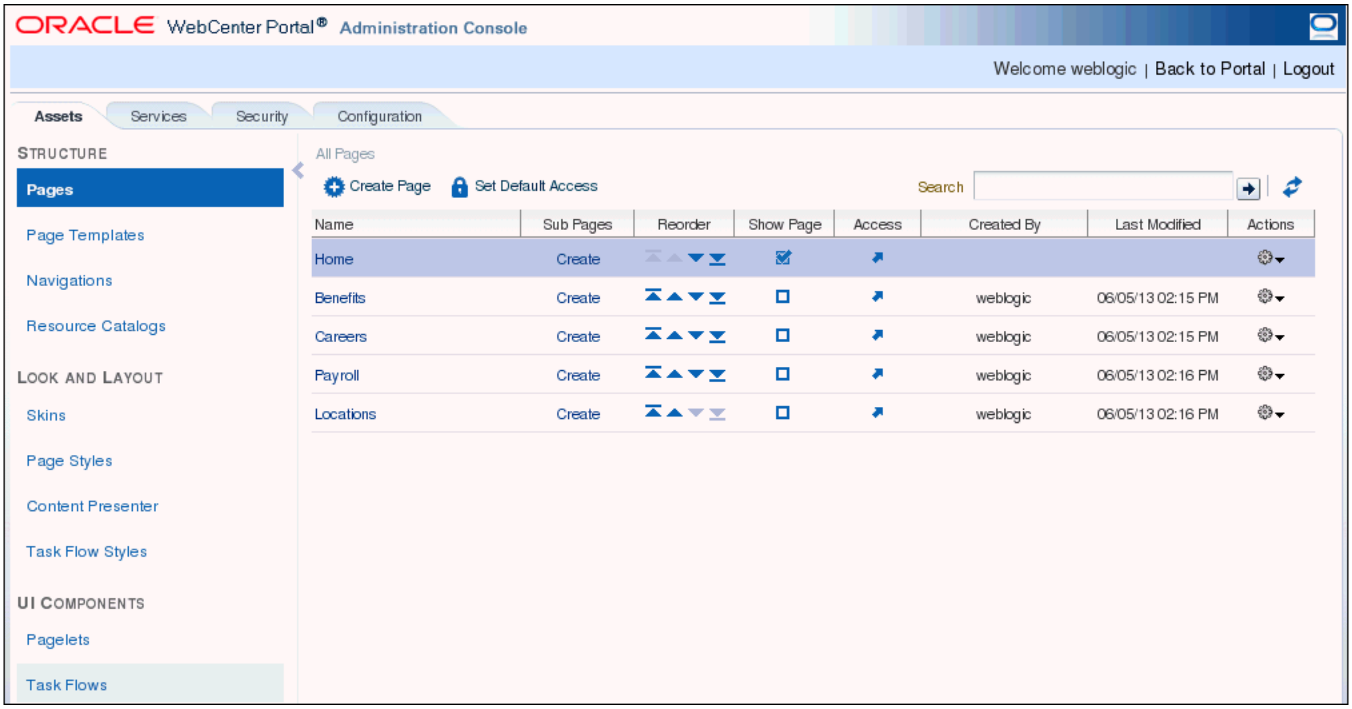
● Preserve customizations across application runs

○ Delete customizations before each run

5.10.2 Browser-Based WebCenter Portal Administration Console

WebCenter Portal Framework applications include a WebCenter Portal Administration Console that lets you work with resources, services, security, and portal configurations. The WebCenter Portal Administration Console is located at this URL: `http://`*`server`*`:`*`port`*`/`*`context_root`*`/admin`, and is shown in Figure 5–23.

Figure 5–23 The WebCenter Portal Administration Console



Name	Sub Pages	Reorder	Show Page	Access	Created By	Last Modified	Actions
Home	Create		☑				
Benefits	Create		□		weblogic	06/05/13 02:15 PM	
Careers	Create		□		weblogic	06/05/13 02:15 PM	
Payroll	Create		□		weblogic	06/05/13 02:16 PM	
Locations	Create		□		weblogic	06/05/13 02:16 PM	

> **Tip:** You can change the default URL for the WebCenter Portal Administration Console by editing the `<url-pattern>` attribute of the `<servlet-mapping>` element in the `web.xml` file. The default `<url-pattern>` is `admin`, but you can change it to something else if you want.

For more information on the Resource tab (the Resource Manager), see Section 5.10.4, "Editing of Portal Resources Using Browser-Based Tools" and Chapter 15, "Creating Pages and Adding Resources." Security topics are discussed in Chapter 74, "Securing Your WebCenter Portal Framework Application."

5.10.3 How Security Settings Affect the Runtime Portal

Role based security policies control which pages, resources, and navigational elements visitors can see and manipulate (create, delete, update, and so on). The design time (JDeveloper) page editor lets you set these policies on pages or hierarchies of pages, as discussed in Section 5.3.3, "Securing WebCenter Portal Framework Pages." Oracle WebCenter Portal Framework respects these security polices in the following ways:

- Pages (and certain other resources, like task flows) can only be viewed by users who are authorized to see them. The same principle holds for operations users can perform on pages, like Grant, Create, Delete, Update, and Personalize.
- Navigation to a resource (like a page or task flow) is hidden if that page is unavailable to the authenticated user. For example, if a user is not authorized to visit the **Payroll** page, the link to that page will not show up in any of the navigational user interfaces.
- Resources that are available within a Resource Catalog are adjusted based on security policies. If a user is not authorized to access a particular resource, such as a task flow, that resource will not appear in the Resource Catalog.

5.10.4 Editing of Portal Resources Using Browser-Based Tools

The WebCenter Portal Administration Console includes a Resources tab that lets you work with several portal-specific features at runtime:

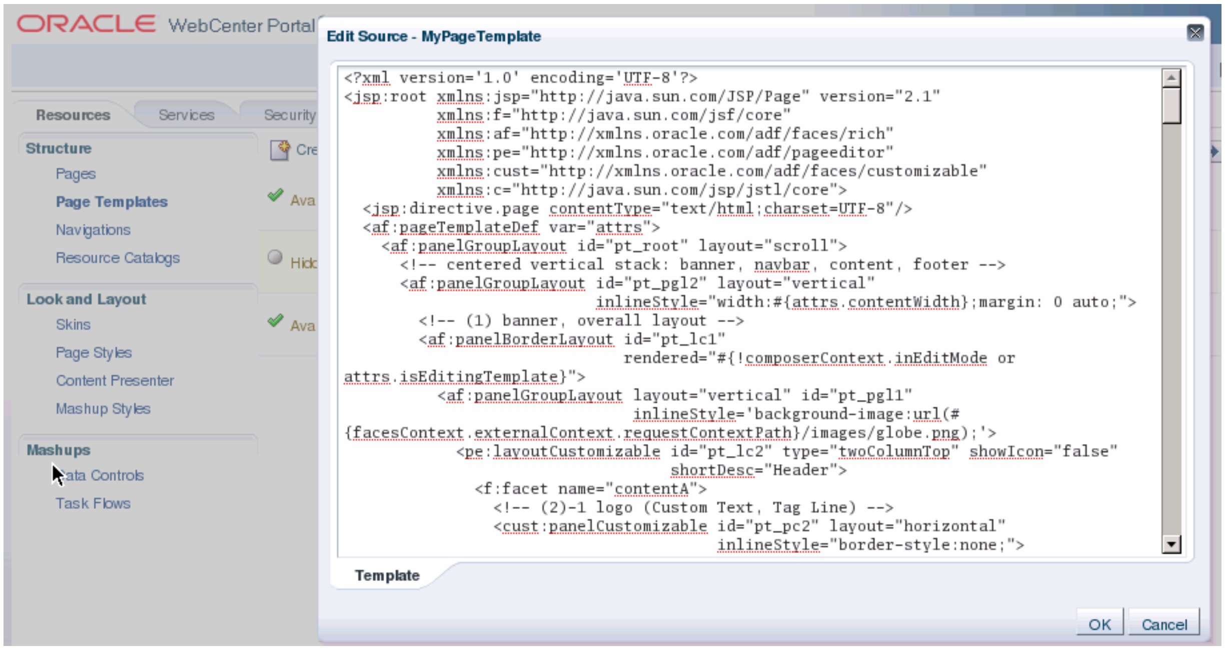
- Pages
- Page templates
- Navigation models
- Resource Catalogs
- Skins
- Page styles
- Content Presenter display templates
- Mashup styles
- Data controls
- Task flows

Using the Resource Manager, portal users can also download resources, or an entire application, from the runtime environment, edit them in JDeveloper, and then upload them back into the deployed application.

The Edit Source feature in the Resource Manager lets you edit the source code of resources in the runtime application. For example, if you upload a portal resource (like a page template), you can then edit it directly in the Resource Manager. Just select the resource, and choose Edit Source from the Edit menu. A source editing window appears, as shown in Figure 5–24.

> **Note:** Some resources, like the `default-navigation-model`, are not editable. If you want to edit these resources, make a copy first and edit the copy.

Figure 5–24 Editing a Page Template Source File at Runtime



```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
          xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"
          xmlns:c="http://java.sun.com/jsp/jstl/core">
  <jsp:directive.page contentType="text/html;charset=UTF-8"/>
  <af:pageTemplateDef var="attrs">
    <af:panelGroupLayout id="pt_root" layout="scroll">
      <!-- centered vertical stack: banner, navbar, content, footer -->
      <af:panelGroupLayout id="pt_pgl2" layout="vertical"
                           inlineStyle="width:#{attrs.contentWidth};margin: 0 auto;">
        <!-- (1) banner, overall layout -->
        <af:panelBorderLayout id="pt_lc1"
                              rendered="#{!composerContext.inEditMode or
attrs.isEditingTemplate}">
          <af:panelGroupLayout layout="vertical" id="pt_pgl1"
                               inlineStyle='background-image:url(#
{facesContext.externalContext.requestContextPath}/images/globe.png);'>
            <pe:layoutCustomizable id="pt_lc2" type="twoColumnTop" showIcon="false"
                                   shortDesc="Header">
              <f:facet name="contentA">
                <!-- (2)-1 logo (Custom Text, Tag Line) -->
                <cust:panelCustomizable id="pt_pc2" layout="horizontal"
                                        inlineStyle="border-style:none;">
```

5.11 Changing the Default Home Page and Login/Logout Target Pages

The file `oracle/portalapp/pages/home.jspx` is the default home page for a new Portal Framework application. This section explains how to change this default home page to another page or any navigable resource like a URL, portlet, or task flow.

- Section 5.11.1, "Understanding How the Home Page Is Specified"
- Section 5.11.2, "How to Change the Default Home Page"
- Section 5.11.3, "How Is the Default Index Page Specified?"
- Section 5.11.4, "Specifying the Target Page After a Login or Logout"

5.11.1 Understanding How the Home Page Is Specified

The default Portal Framework application includes an `index.html` file, which is located in the portal project directory. This index file contains the following redirect statement:

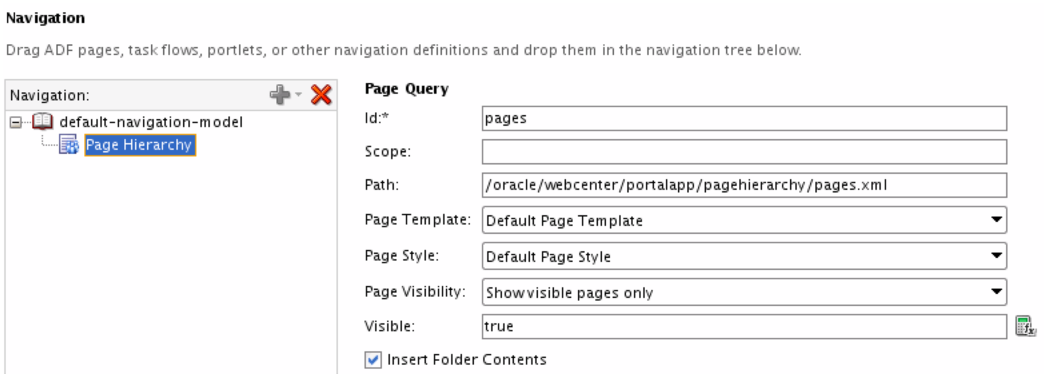
```
<meta http-equiv="refresh" content="0;url=./faces/wcnav_defaultSelection" />
```

Note: The redirect statement in `index.html` refers to the portal navigation model, not to a page as you might expect. Pointing the redirect to the navigation model allows the `currentSelection` attribute to be set properly, which allows the current selection to be highlighted in the user interface.

The URL element `pages_home` refers to the "home" page specified in the page hierarchy. (The prefix "`pages_`" is added to the folder name simply to ensure a unique ID.) As Figure 5–25 shows, the **Insert Folder Contents** checkbox is selected in the Navigation dialog. The **Insert Folder Contents** option replaces the specified folder ("`home`" in this case) with the *contents* of the folder. Therefore, in this example, the portal looks for a folder called "`home`" in the page hierarchy. Note too that Page Hierarchy is specified as an element in the navigation model.

To help you understand how the default portal home page is specified, note that in the navigation model a default node called `pages` is created by default. This node's navigation path points to the page hierarchy file, `pages.xml`, as shown in Figure 5–25.

Figure 5–25 The Default Navigation Model



Navigation

Drag ADF pages, task flows, portlets, or other navigation definitions and drop them in the navigation tree below.

Page Query

Id:* pages

Scope:

Path: /oracle/webcenter/portalapp/pagehierarchy/pages.xml

Page Template: Default Page Template

Page Style: Default Page Style

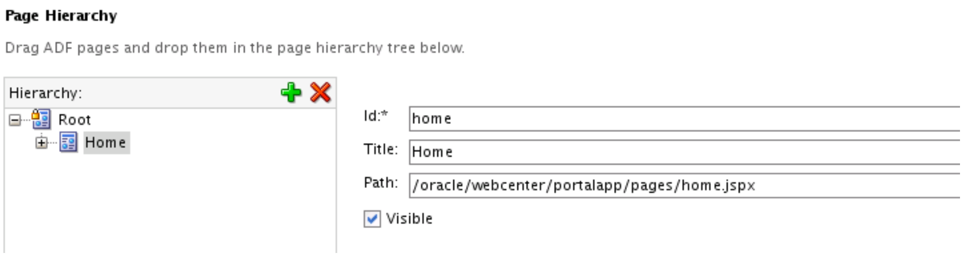
Page Visibility: Show visible pages only

Visible: true

☑ Insert Folder Contents

Upon navigating to `pages.xml`, the node called `home` is located, and that node's path is `/oracle/webcenter/portalapp/pages/home.jspx`, as shown in Figure 5–26.

Figure 5–26 The Default Page Hierarchy



Page Hierarchy

Drag ADF pages and drop them in the page hierarchy tree below.

Id:* home

Title: Home

Path: /oracle/webcenter/portalapp/pages/home.jspx

☑ Visible

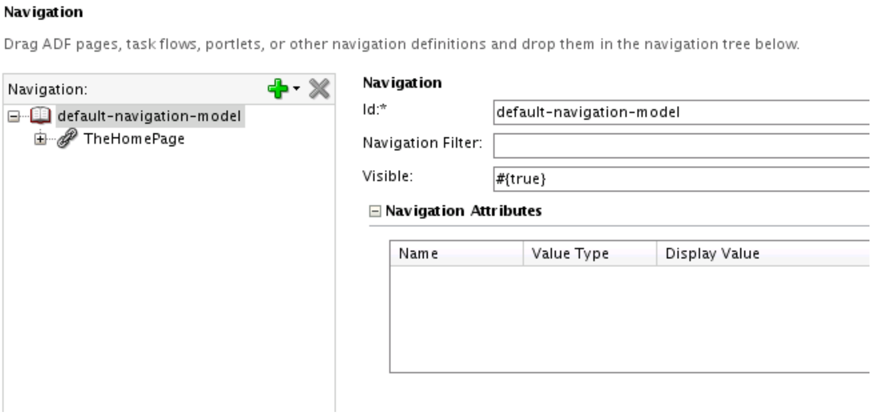
5.11.2 How to Change the Default Home Page

To change the default home page, simply change the redirect statement in `index.html` to the pretty URL of another resource that is referenced in the navigation model. For example, you might create a new home page and redirect to it – a common use case. Simply specify the new page to be your portal's home page by changing the redirect in `index.html` to the new page's pretty URL. (You can drag the new page in the navigation model to create a page link element.) For example, if the link ID in the navigation model is `TheHomePage`:

```
<meta http-equiv="refresh" content="0;url=./faces/wcnav_defaultSelection" />
```

where `.faces/wcnav_defaultSelection` is the pretty URL that points to the link element defined in the navigation model.

Figure 5–27 Navigation Model with New Home Page Element



Navigation

Drag ADF pages, task flows, portlets, or other navigation definitions and drop them in the navigation tree below.

Navigation:
- default-navigation-model
  - TheHomePage

Navigation

Id:* default-navigation-model

Navigation Filter:

Visible: #{true}

Navigation Attributes

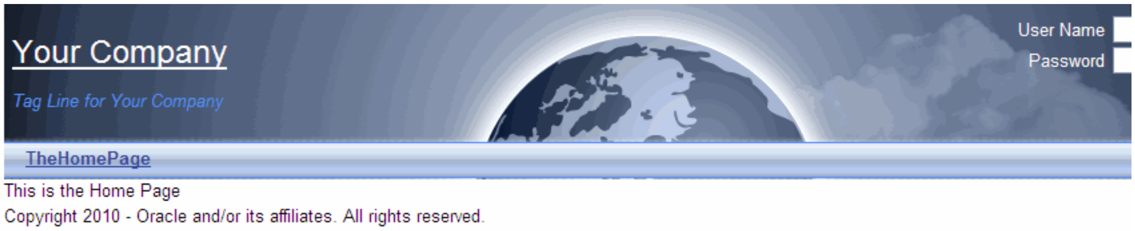
Name	Value Type	Display Value

Using this example, if access the portal in a browser using this URL:

```
http://myserver:myport/MyPortalApp-Portal-context-root
```

the portal will render a home page that contains the content from the new home page, as shown in Figure 5–28.

Figure 5–28 The Oracle Website Displays as the Content for the Portal Home Page



Your Company

Tag Line for Your Company

User Name

Password

TheHomePage

This is the Home Page

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5.11.3 How Is the Default Index Page Specified?

The default index page for the Integrated Weblogic Server instance is `index.html`. A new portal project includes this file, by default, in the `Web Content` folder.

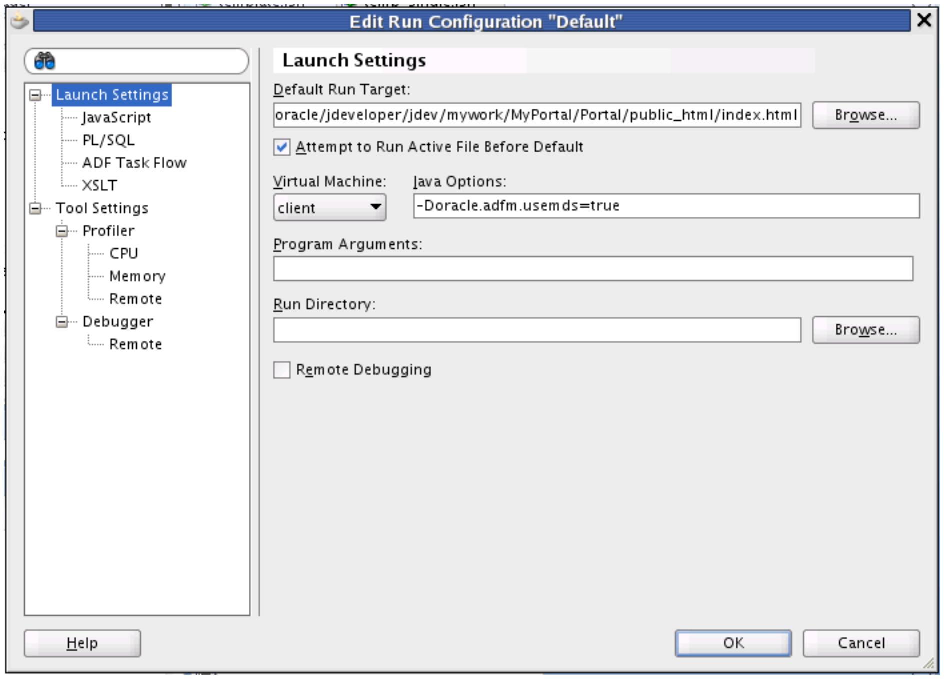
To change the default index file, `index.html`, to another file, you have two choices. One way to change this default index file is to edit the `<welcome-file-list>` element in the `web.xml` file:

```
<welcome-file-list>
    <welcome-file>/index.html</welcome-file>
</welcome-file-list>
```

Another way to change the default index page is to use the Edit Run Configuration "Default" dialog box. To access this dialog, open the project properties dialog, then, select the **Run/Debug/Profile** option. Click **Edit** to bring up the Edit Run

Configuration "Default" dialog where you can change the default index page, as shown in Figure 5–29.

Figure 5–29 Edit Run Configuration "Default" Dialog



Launch Settings

Default Run Target: oracle/jdeveloper/jdev/mywork/MyPortal/Portal/public_html/index.html

☑ Attempt to Run Active File Before Default

Virtual Machine: client

Java Options: -Doracle.adfm.usemds=true

Program Arguments:

Run Directory:

□ Remote Debugging

5.11.4 Specifying the Target Page After a Login or Logout

To specify the target page after a login or logout, edit the `<navigation-rule>` element in the `WebContent/WEB-INF/faces-config.xml` configuration file in your portal project, as shown in Example 5–1. You can change the target pages to any other navigation resource's pretty URL or Faces page.

Example 5–1 Specifying the Target Page for Login and Logout

```
<navigation-rule>
    <from-view-id>*</from-view-id>
    <navigation-case>
      <from-outcome>login_success</from-outcome>
      <to-view-id>/pages_home</to-view-id>
      <redirect/>
    </navigation-case>
    <navigation-case>
      <from-outcome>logout_success</from-outcome>
      <to-view-id>/pages_home</to-view-id>
      <redirect/>
    </navigation-case>
</navigation-rule>
```

For example, to redirect the user to a post-logout page follow these steps:

1. Create the post-logout page and add content to it. For example:

   ```
   /oracle/webcenter/portalapp/pages/postlogout.jspx
   ```

2. Modify the navigation rule in `faces-config.xml`. For example:

```
<navigation-case>
  <from-outcome>logout_success</from-outcome>
  <to-view-id>/oracle/webcenter/portalapp/pages/postlogout.jspx</to-view-id>
  <redirect/>
</navigation-case>
```

After a successful logout, the user is redirected to the specified page.

5.12 Customizing Session Timeouts

You can customize session timeout popups in a Portal Framework application by configuring the default timeout value. You can also customize the text that appears in the popup by modifying the resource strings.

This section contains the following topics:

- Section 5.12.1, "Customizing the Session Timeout Default Value"
- Section 5.12.2, "Customizing the Session Timeout Default Message"

5.12.1 Customizing the Session Timeout Default Value

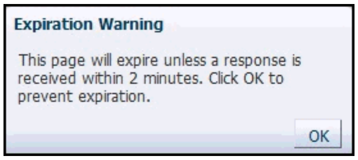
For better performance, Oracle recommends that the HTTP session timeout value for Portal Framework applications be set to a lower value (for example, 10 minutes) than the out-of-the-box value of 45 minutes. The lower number helps the server's performance, particularly during significant load. The longer the session time, the longer the server will have to hold memory until the inactive sessions expire.

Configuring the session timeout value to a lower number, for example, 10 minutes, can be done through the `web.xml` file:

```
<session-config>
  <session-timeout>10</session-timeout>
</session-config>
```

After this value is set, a warning popup appears, with a default value of two minutes, before the session is set to expire (Figure 5–30).

Figure 5–30 Timeout Warning Popup

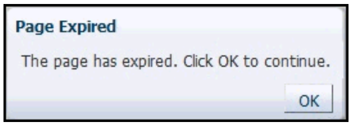


Expiration Warning

This page will expire unless a response is received within 2 minutes. Click OK to prevent expiration.

After the warning has expired, the message that the page has expired appears (Figure 5–31).

Figure 5–31 Page Expired Popup



Page Expired

The page has expired. Click OK to continue.

Although these messages are usually valid in many Portal Framework deployments, in the majority of Portal Framework applications, a session is equivalent to being logged in. For example, in the instance of a public user, the appearance of these messages may not be expected behavior. However, you can easily configure to disable these messages and keep them from appearing.

When a request is sent to the server, a session timeout value is written to the page and the session timeout warning interval is defined by the context parameter `oracle.adf.view.rich.sessionHandling.WARNING_BEFORE_TIMEOUT`.

Use the `oracle.adf.view.rich.sessionHandling.WARNING_BEFORE_TIMEOUT` context parameter to set the number of seconds prior to the session time out when a warning message is displayed. If the value of `WARNING_BEFORE_TIMEOUT` is less than 120 seconds, if client state saving is used for the page, or if the session has been invalidated, the feature is disabled. The session time-out value is taken directly from the session.

In Example 5–2, the `STATE_SAVING_METHOD` value is set to `client`, and the value correlates to the value needed for a page's `af:document` tag. This tag, has the `stateSaving` property set to default, which means it gets the value from the `init-context-param`. Notice that the `WARNING_BEFORE_TIMEOUT` value has been set to `0`. Out-of-the-box, the default value is 120 seconds.

Example 5–2 Session Timeout Warning Configuration

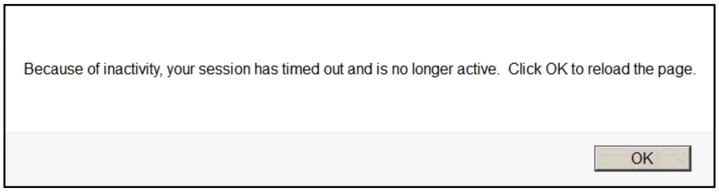
```
<context-param>
  <param-name>javax.faces.STATE_SAVING_METHOD</param-name>
  <param-value>client</param-value>
</context-param>

<context-param>
  <param-name>
     oracle.adf.view.rich.sessionHandling.WARNING_BEFORE_TIMEOUT
  </param-name>
    <param-value>0</param-value>
</context-param>
```

WARNING: Any value less than the default value of 120 seconds will disable the popup.

This configuration only prevents the warning message from appearing. Any subsequent page action, partial-page event, or navigation through an `af:commandLink` will produce the un-handled, `ViewExpiredException` (`ADF_FACES-60098`) in the `Faces, RESTORE_VIEW`, lifecycle (Figure 5–32):

Figure 5–32 Inactivity Timeout Message



Because of inactivity, your session has timed out and is no longer active. Click OK to reload the page.

The following log shows the details of this issue:

```
javax.faces.application.ViewExpiredException: viewId:/programs - ADF_
FACES-30108:The view state of the page has expired because of inactivity. Reload
the page.
at oracle.adfinternal.view.faces.lifecycle.LifecycleImpl._
restoreView(LifecycleImpl.java:650)
```

```
at oracle.adfinternal.view.faces.lifecycle.LifecycleImpl._
executePhase(LifecycleImpl.java:301)
at
oracle.adfinternal.view.faces.lifecycle.LifecycleImpl.execute(LifecycleImpl.java:1
86)
at javax.faces.webapp.FacesServlet.service(FacesServlet.java:265)
at
weblogic.servlet.internal.StubSecurityHelper$ServletServiceAction.run(StubSecurity
Helper.java:227)
at
weblogic.servlet.internal.StubSecurityHelper.invokeServlet(StubSecurityHelper.java
:125)
at weblogic.servlet.internal.ServletStubImpl.execute(ServletStubImpl.java:300)
at weblogic.servlet.internal.TailFilter.doFilter(TailFilter.java:26)
```

Note: For a Portal Framework application, the use of goLinks that use the pretty URL navigation model as the destination is preferred. goLinks will not have this particular issue, since the framework will handle creating a new state.

A way of handling this issue is to extend the Portal Framework application to support a custom exception handler. However, an alternative approach is discussed.

The solution is to use a servlet filter to handle the exception and then enable the application to control the recovery destination. For example, one scenario is to be able to either return to the page that the user was previously on, or navigate to the page that the user chooses through one of the (navigation model) page links. The following code supports this scenario:

```
import javax.servlet.Filter;
import javax.servlet.FilterChain;
import javax.servlet.FilterConfig;
import javax.servlet.ServletException;
import javax.servlet.ServletRequest;
import javax.servlet.ServletResponse;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class SessionExpiryFilter implements Filter {
    private FilterConfig _filterConfig = null;

    public SessionExpiryFilter() {
        super();
    }

    public void init(FilterConfig filterConfig) throws ServletException {
        _filterConfig = filterConfig;
    }

    public void doFilter(ServletRequest servletRequest,
                         ServletResponse servletResponse,
                         FilterChain filterChain) throws IOException,
                                                         ServletException {
        String requestedSession =
            ((HttpServletRequest)servletRequest).getRequestedSessionId();
        String currentWebSession =
            ((HttpServletRequest)servletRequest).getSession().getId();
        String requestURI =
            ((HttpServletRequest)servletRequest).getRequestURI();
        boolean sessionOk =
            currentWebSession.equalsIgnoreCase(requestedSession);
        System.out.println("currentWebSession == requestedSession? : " +
sessionOk);
        if (!sessionOk && requestedSession != null) {
            ((HttpServletResponse)servletResponse).sendRedirect(requestURI);
            System.out.println("redirecting to : " + requestURI);
        } else {
            filterChain.doFilter(servletRequest, servletResponse);
            System.out.println("session is OK");
        }
    }

    public void destroy() {
        _filterConfig = null;
    }
}
```

The code essentially compares the value of the session IDs. If the IDs do not match, then a redirect executes to the page that is determined by the `getRequestURI()`. Otherwise, the request is handled normally.

The following is how the servlet filter is registered with the application through the `web.xml` file:

```
<filter>
 <filter-name>AppSessionExpiryFilter</filter-name>
   <filter-class>ateam.sample.SessionExpiryFilter</filter-class>
 </filter>
<filter-mapping>
  <filter-name>AppSessionExpiryFilter</filter-name>
   <servlet-name>Faces Servlet</servlet-name>
</filter-mapping>
```

Note: Both the popup and inactive session error messages can be easily managed. However, since WebCenter ADF is an application framework, once the session has been timed out (invalidated), the state of the application is lost as well. This means any managed beans, ADF bindings, and so on, is reset to the initial state. In addition, any information that was being persisted in a managed bean is also lost.

5.12.2 Customizing the Session Timeout Default Message

To customize the session timeout default messages, you need to customize the default strings provided in the out-of-the-box session timeout popups. The steps to create custom resource strings, which will override the default values, are detailed in this section.

The default session timeout messages are shown in Figure 5–30 and Figure 5–31.

All the text-based resource strings (for example, Expiration Warning, and so on) are customizable. These resource strings are contained in a bundle (`RichBundle.java`), which is declared in the skin (`CSS`). In order to override the defaults, a custom resource bundle must be created and then declared in a custom skin.

Note: The custom skin declaration in the `trindad-skins.xml` should also declare to extend the default skin, so the other default resource strings can be picked up.

Example 5–3 is an example of the `trinidad-skins.xml`, which declares the custom resource bundle:

Example 5–3 Custom Resource Bundle in trinidad-skins.xml

```
<?xml version="1.0" encoding="windows-1252" ?>
<skins xmlns="http://myfaces.apache.org/trinidad/skin">
  <skin>
    <id>myskin.custom.desktop</id>
    <family>myskindemo</family>
    <render-kit-id>org.apache.myfaces.trinidad.desktop</render-kit-id>
    <style-sheet-name>css/myskindemo.css</style-sheet-name>
    <extends>fusionFx-v1.desktop</extends>
    <bundle-name>com.ateam.view.MyBundleOverride</bundle-name>
  </skin>
</skins>
```

After the skin is declared and selected in the `trinidad-skins.xml`, the last step is to create the resource bundle file that will hold the custom strings.

For this example, a java-based version for declaring the strings in the resource bundle is created. There are also other ways to declare the strings (for example, `.properties` and `.xliff`).

After the configuration to override the default bundle is done, the next step is to declare the strings themselves.

The five default resource strings used are as follows:

```
af_document.PRE_SESSION_TIMEOUT_CONFIRM_TITLE = Expiration Warning

af_document.PRE_SESSION_TIMEOUT_MSG = This page will expire unless a
response is received within {0} minutes. Click OK to prevent expiration.

af_document.PRE_SESSION_TIMEOUT_MSG_SECOND = This page will expire unless
a response is received within {0} seconds. Click OK to prevent expiration.

af_document.POST_SESSION_TIMEOUT_MSG = The page has expired af_
document.POST_SESSION_TIMEOUT_MSG_CONTINUE = Click OK to continue.

af_document.POST_SESSION_TIMEOUT_ALERT_TITLE = Page Expired
```

Example 5–4 shows an example of `MyBundleOverride.java`, which contains the custom resource strings.

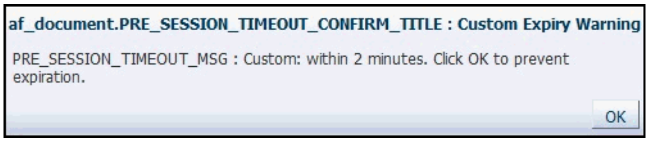
Example 5–4 Example of Custom Resource Strings

```
public class MyBundleOverride extends ListResourceBundle {
    @Override
    public Object[][] getContents() {
        return _CONTENTS;
    }

    static private final Object[][] _CONTENTS =
    {
      { "af_document.PRE_SESSION_TIMEOUT_CONFIRM_TITLE",
        "af_document.PRE_SESSION_TIMEOUT_CONFIRM_TITLE : Custom Expiry Warning" },
      { "af_document.PRE_SESSION_TIMEOUT_MSG",
        "PRE_SESSION_TIMEOUT_MSG : Custom: within {0} minutes. Click OK to prevent
expiration." },
      { "af_document.PRE_SESSION_TIMEOUT_MSG_SECOND",
        "PRE_SESSION_TIMEOUT_MSG_SECOND : Custom: This page will expire unless a
response is received within {0} seconds. Click OK to prevent expiration." },
      { "af_document.POST_SESSION_TIMEOUT_MSG",
        "POST_SESSION_TIMEOUT_MSG : This is a custom message from MyOverride
Bundle" },
      { "af_document.POST_SESSION_TIMEOUT_MSG_CONTINUE",
        "POST_SESSION_TIMEOUT_MSG_CONTINUE : Custom continue Message" },
      { "af_document.POST_SESSION_TIMEOUT_ALERT_TITLE",
        "POST_SESSION_TIMEOUT_ALERT_TITLE : Custom Page Expired Title" }
      };
}
```

Based on the examples provided in this section, the customized messages before and after a session timeout appear, as shown in Figure 5–33 and Figure 5–34:

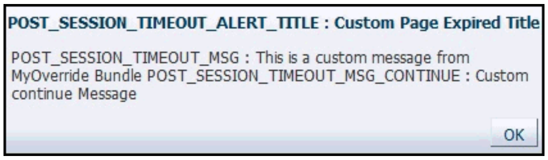
Figure 5–33   Custom Warning Message Before Timeout



af_document.PRE_SESSION_TIMEOUT_CONFIRM_TITLE : Custom Expiry Warning

PRE_SESSION_TIMEOUT_MSG : Custom: within 2 minutes. Click OK to prevent expiration.

Figure 5–34   Custom Message After Timeout



POST_SESSION_TIMEOUT_ALERT_TITLE : Custom Page Expired Title

POST_SESSION_TIMEOUT_MSG : This is a custom message from MyOverride Bundle POST_SESSION_TIMEOUT_MSG_CONTINUE : Custom continue Message

Tip: Clear the browser cache if you cannot view the updated strings.

5.13 Basic Portal Development Tasks

This section lists some of the basic tasks involved with developing Portal Framework applications.

- Set up an integrated team development environment with source control, a common database, and common content repository.
- Create a Portal Framework application using the WebCenter Portal Framework Application template.
- Design the overall structure of your portal, sketching out the top level pages and sub pages that will comprise your portal.
- Consider security for your portal. Decide which pages users will be allowed to visit. Create appropriate roles to accommodate these decisions.
- Begin thinking about your portal's overall look and feel, and begin working on a page template.
- Consider which WebCenter Portal features you want to include in your portal. For example, do you want to add a wiki or a blog or an activity stream? See Section 4.1, "Understanding WebCenter Portal Tools and Services."
- Create pages based on your overall portal structure. The pages can be blank at this point, but creating them now allows you to begin assembling the page hierarchy.

- Create a page hierarchy using the Page Hierarchy editor.
- Create a navigation model. Think about the kinds of resources you want users to be able to navigate to. Examples include pages, external URLs, task flows, and content folders.
- Add navigation UI to the page template. Oracle WebCenter Portal Framework provides several options for navigation UI. The most commonly used option is to use EL directly in the page template. WebCenter also provides navigation task flows and a Java API for navigation.
- Begin applying security policies to the page hierarchy. Start by applying policies to the root node of the hierarchy. Those policies will be inherited by all other pages in the hierarchy. Then, fine-tune the security settings on individual pages or on sub-branches of the overall hierarchy.
- Work on the pages themselves, adding and configuring portlets, task flows, content, and other features.

6 Creating WebCenter Portal Framework Applications

This chapter explains how to create a new WebCenter Portal Framework application and discusses the organization and contents of a Portal Framework application workspace in JDeveloper.

This chapter includes the following topics:

- Section 6.1, "Creating a New WebCenter Portal Framework Application"
- Section 6.2, "Understanding the WebCenter Portal Framework Application Template"
- Section 6.3, "Building a Portal"
- Section 6.4, "Understanding the PortalWebAssets Project"
- Section 6.5, "How Is Framework Application Security Configured by Default?"
- Section 6.6, "What Configuration Files Should I Know About?"
- Section 6.7, "Adding Excluded Files to the Application Navigator"
- Section 6.8, "Developing Framework Portal Applications for High Availability"
- Section 6.9, "Securing the Portal"

6.1 Creating a New WebCenter Portal Framework Application

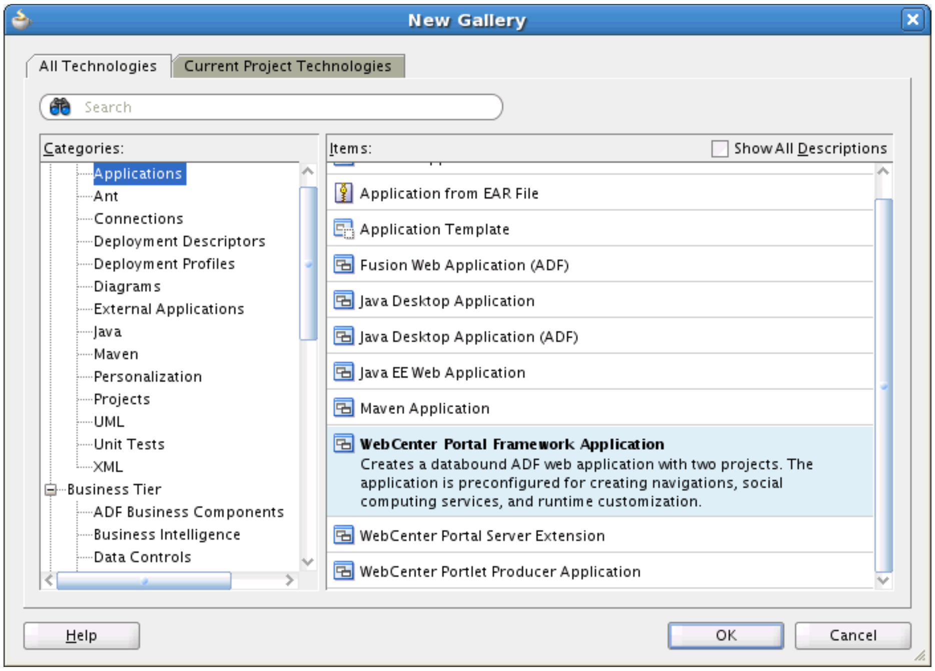
This section explains how to use the Create WebCenter Portal Framework Application wizard to create a new portal.

1. Access the application creation wizard. JDeveloper provides several ways for you to access this wizard. For example:

    - From the **File** menu, choose **New**. In the New Gallery dialog, expand **Applications**, select **WebCenter Portal Framework Application**, and click **OK**. For example, see Figure 6–1.

    > **Note:** When you select **WebCenter Portal Framework Application**, you are selecting an application *template* that populates the application with a pre-defined set of projects and files. For more information about this template, see Section 6.2, "Understanding the WebCenter Portal Framework Application Template."

Figure 6–1 New Gallery Dialog



Creates a databound ADF web application with two projects. The application is preconfigured for creating navigations, social computing services, and runtime customization.

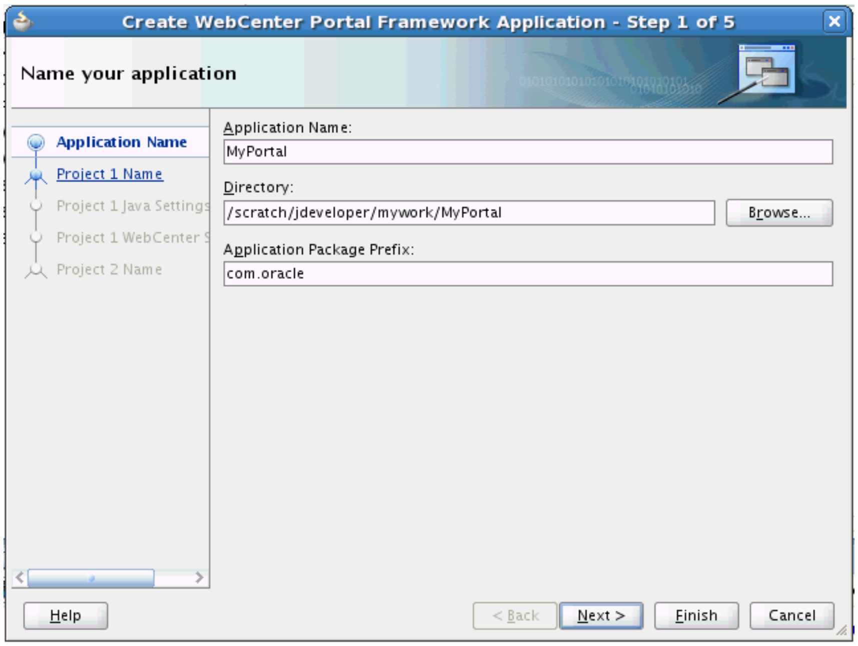
- From the Application menu, select **New**. In the dialog select **WebCenter Portal Framework Application**.
- If you have an existing application that is open, in the Application Navigator, right-click **<*Application-Name*>** and choose **New**. In the New Gallery dialog, expand **Applications**, select **WebCenter Portal Framework Application**, and click **OK**.
- If you have an existing application that is open, in the Application Navigator, from the **<*Application-Name*>** drop down menu, select **New Application**. In the New Gallery dialog, expand **Applications**, select **WebCenter Portal Framework Application**, and click **OK**.

Note: At this point, you are on the first page of the Create WebCenter Portal Framework Application wizard. The wizard includes five pages, which are explained in the following steps.

---

2. Enter a name for the application in the **Application Name** field, as shown in Figure 6–2.

Figure 6–2 Create WebCenter Portal Framework Application Wizard Step 1 of 5



Application Name: MyPortal

Directory: /scratch/jdeveloper/mywork/MyPortal

Application Package Prefix: com.oracle

3. In the **Directory** field, enter a path to the directory where you wish to store the application, or accept the default path.

   For example:

   ```
   C:\JDeveloper\mywork\Application1
   ```

   Optionally, click the **Browse** button to navigate to the desired directory.

4. If required, in the **Application Package Prefix** field, enter a prefix to use for packages created within this application.

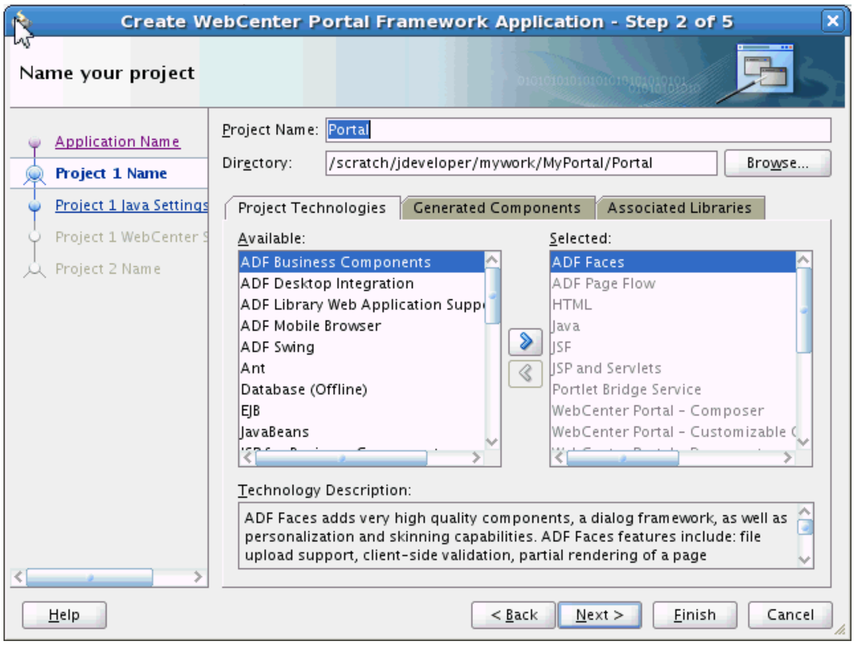
   Note: Depending on how you launched the wizard, you might see an Application Template list. If you do see this list, make sure **WebCenter Portal Framework Application** is selected.

   Tip: At this point, you could click **Finish** to create a project with default Framework features, including page hierarchies and navigations. We'll continue and review the rest of the wizard pages.

5. Click **Next**.

6. Enter a project name, as shown in Figure 6–3.

Figure 6–3 Create WebCenter Portal Framework Application Wizard Step 2 of 5



Create WebCenter Portal Framework Application - Step 2 of 5

Name your project

Project Name: Portal

Directory: /scratch/jdeveloper/mywork/MyPortal/Portal

Available:
- ADF Business Components
- ADF Desktop Integration
- ADF Library Web Application Supp
- ADF Mobile Browser
- ADF Swing
- Ant
- Database (Offline)
- EJB
- JavaBeans

Selected:
- ADF Faces
- ADF Page Flow
- HTML
- Java
- JSF
- JSP and Servlets
- Portlet Bridge Service
- WebCenter Portal - Composer
- WebCenter Portal - Customizable C

Technology Description:

ADF Faces adds very high quality components, a dialog framework, as well as personalization and skinning capabilities. ADF Faces features include: file upload support, client-side validation, partial rendering of a page

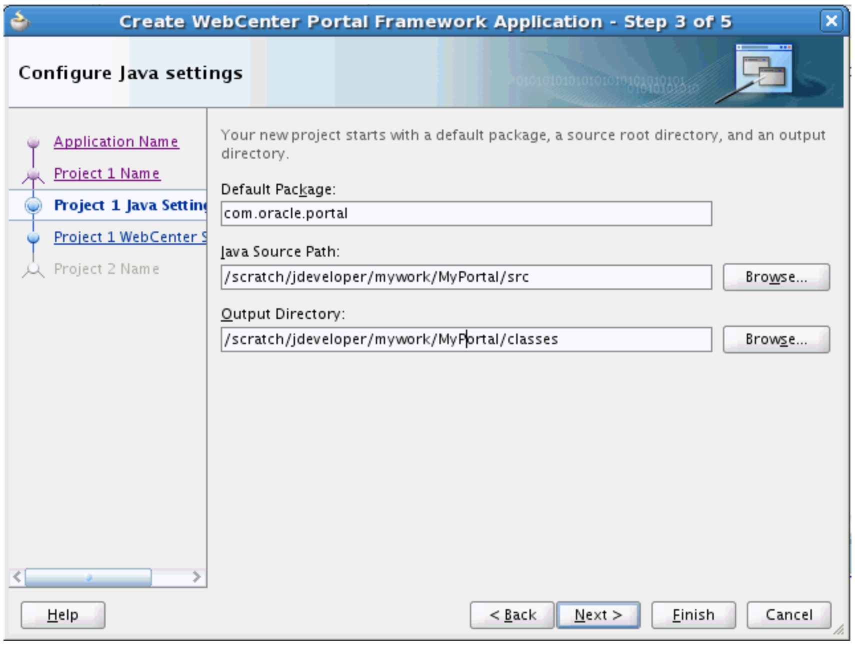
7. Enter a directory in which to place the project, or use the **Browse** button to select a directory.

8. If you wish, select the **Generated Components** and **Associated Libraries** tabs to view additional configuration files and libraries that will be added to the project. For more information, see Section 6.6, "What Configuration Files Should I Know About?"

9. Click **Next**.

10. If you wish, enter a Default Package name and directories for the default Java source files and output class files, as shown in Figure 6–4.

Figure 6–4 Create WebCenter Portal Framework Application Wizard Step 3 of 5



Create WebCenter Portal Framework Application - Step 3 of 5

Configure Java settings

Your new project starts with a default package, a source root directory, and an output directory.

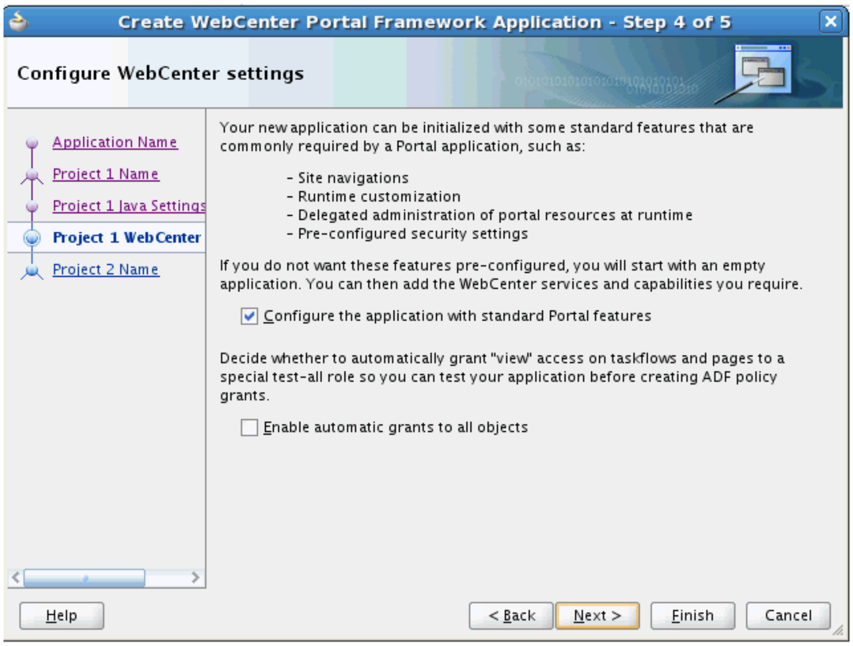
Default Package: com.oracle.portal

Java Source Path: /scratch/jdeveloper/mywork/MyPortal/src

Output Directory: /scratch/jdeveloper/mywork/MyPortal/classes

11. In the next wizard page, two check boxes appear, as shown in Figure 6–5. Generally, the default settings are recommended; however, see the following note for more information on this wizard page.

Figure 6–5 Create WebCenter Portal Framework Wizard Step 4 of 5



Create WebCenter Portal Framework Application - Step 4 of 5

Configure WebCenter settings

Your new application can be initialized with some standard features that are commonly required by a Portal application, such as:

- Site navigations
- Runtime customization
- Delegated administration of portal resources at runtime
- Pre-configured security settings

If you do not want these features pre-configured, you will start with an empty application. You can then add the WebCenter services and capabilities you require.

☑ Configure the application with standard Portal features

Decide whether to automatically grant "view" access on taskflows and pages to a special test-all role so you can test your application before creating ADF policy grants.

☐ Enable automatic grants to all objects

Note: If you want your application to include the features of Oracle WebCenter Portal Framework, like page hierarchies and navigations, leave the first box checked (**Configure the application with standard Portal features**). If you uncheck this box, the result is that you will create a traditional Oracle Fusion Web Application that does not contain Framework features.

Oracle recommends that you leave the first checkbox selected, unless you know for sure that you do not want to use the Oracle WebCenter Portal Framework features.

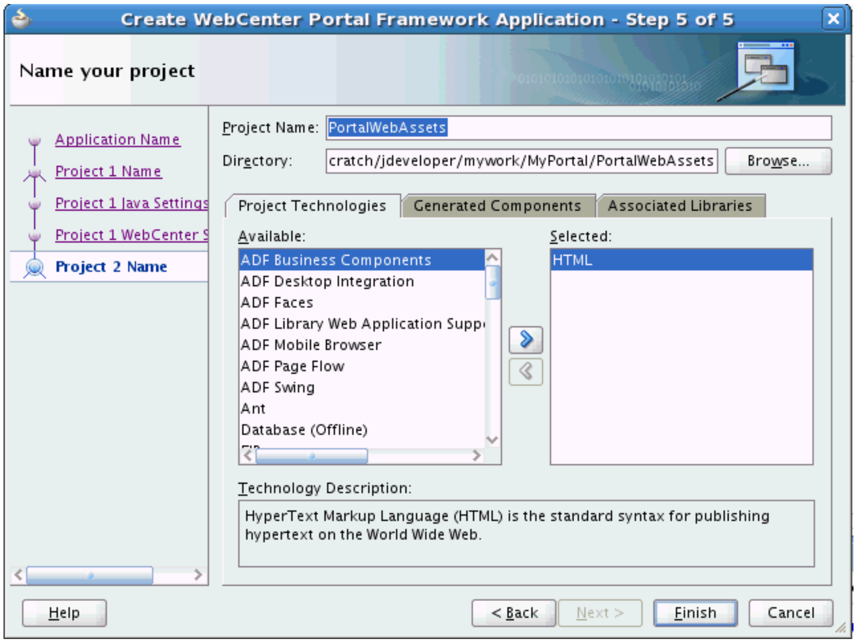
The second checkbox, **Enable automatic grants to all objects**, allows you to create a special role called test-all with View access on all taskflows and pages. This option is primarily added to make testing the application easier. It is unchecked by default.

---

12. Click **Next**.

13. In the final wizard page you are given a chance to configure the static application resources project. By default, this project is called PortalWebAssets. The project includes static application resources like HTML and image files. By separating the static resources into a separate project, it is possible to deploy those resources to a dedicated server. See For more information, see Section 6.4, "Understanding the PortalWebAssets Project."

Figure 6–6 Create WebCenter Portal Framework Application Wizard Step 5 of 5



Create WebCenter Portal Framework Application - Step 5 of 5

Name your project

Project Name: PortalWebAssets

Directory: cratch/jdeveloper/mywork/MyPortal/PortalWebAssets

Selected: HTML

Technology Description:

HyperText Markup Language (HTML) is the standard syntax for publishing hypertext on the World Wide Web.

14. Click **Finish** to create the WebCenter Portal Framework application.

6.2 Understanding the WebCenter Portal Framework Application Template

To readily find and use the appropriate components in your WebCenter Portal Framework application, you must ensure that the right technology scopes are set, tag libraries added, and required Java classes are added to the class path. Once you do this, relevant components are included in the Component Palette and relevant context menus become available in JDeveloper.

Fortunately, Oracle provides an out-of-the-box application template to ensure that scopes are set properly and the right tag and Java libraries are added to create WebCenter Portal Framework applications.

The **WebCenter Portal Framework Application** template populates the application with a *portal project* and a *static application resources* project. The portal project includes features like site navigation, page hierarchies, delegated administration, security, page templates, and runtime customization. A Framework application can consume portlets, incorporate content management services, and include WebCenter social computing services. The static application resources project includes static application resources like HTML and image files. By default, this project is called PortalWebAssets. By separating the static resources into a separate project, it is possible to deploy those resources to a dedicated server. See Section 6.1, "Creating a New WebCenter Portal Framework Application" and Section 6.4, "Understanding the PortalWebAssets Project."

> **Note:** In addition to populating the application with default files and folders, the template populates the Resource Palette with the **WebCenter Portal – Framework Catalog** and the **WebCenter Portal – Services Catalog**. The Services Catalog contains data controls and task flows that you can use to integrate WebCenter Portal tools and services in your application. The Framework Catalog contains a collection of components that are most commonly used for building portals. For more information see Chapter 14, "Developing Resource Catalogs."

6.3 Building a Portal

After you have created a new Portal Framework workspace, you can begin setting up navigation, adding pages, developing the look and feel, adding content, and working with other features or "assets." For a general overview of portal features, see Chapter 5, "Understanding WebCenter Portal Framework Applications." For more information on adding features to a portal, see Chapter 9, "Introduction to Portal Resource Management."

6.4 Understanding the PortalWebAssets Project

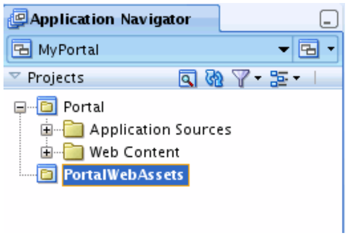
This section discusses the PortalWebAssets project. If you wish, you can place static resources like HTML files and images in this project. The PortalWebAssets project is created, by default, in new Portal Framework applications.

- Section 6.4.1, "Introduction"
- Section 6.4.2, "Decoupling the Static Application Resources Project"
- Section 6.4.3, "Deployment Options"
- Section 6.4.4, "Using EL to Manage Static Resources"

6.4.1 Introduction

Static resources for a web application, like HTML and image files, are typically bundled and deployed with the application. Requests for both dynamic and static resources are generally handled by the host application server. One way to optimize server performance is to separate the static resources from the application and deploy them on a different (possibly less expensive and more scalable) server. Portal Framework applications support this scenario with a static application resources project, which can include static resources like HTML and images. By default, this project is called PortalWebAssets, but you can rename the project if you wish. See Figure 6–7.

Figure 6–7 The PortalWebAssets Folder



To use the static resources project, simply add content (like HTML or image files) to the project. You can do this directly from the file system, by adding files under the `../PortalWebAssets/public_html` directory, or by adding in JDeveloper. For instance, to add an HTML file, select **New** from the File menu, and use the New Gallery wizard to create the resource.

> **Note:** CSS files used for skins must remain in the Portal Framework application project. Do not attempt to place skin CSS files in the static application resources project.

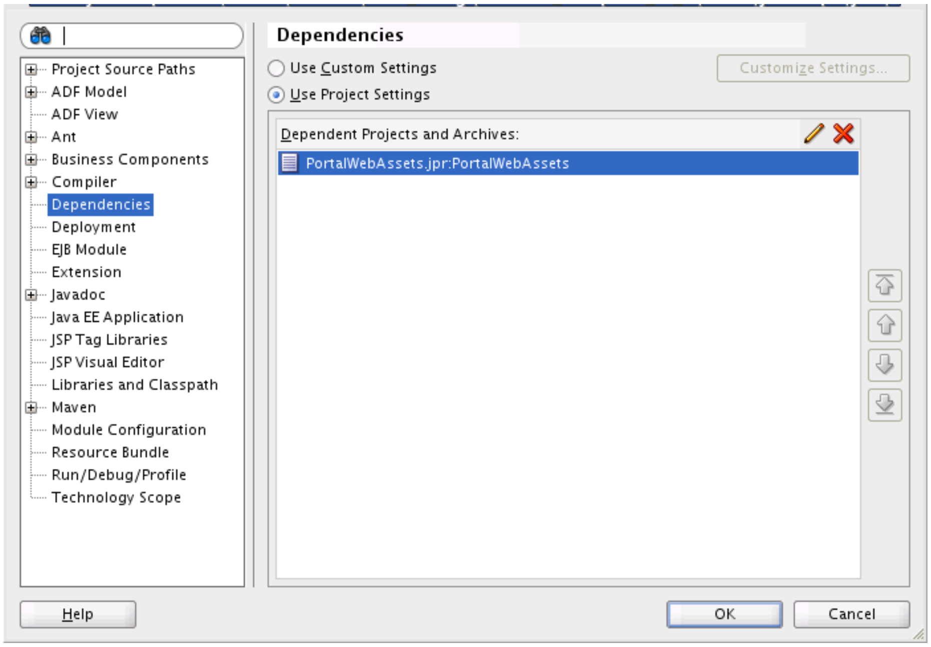
6.4.2 Decoupling the Static Application Resources Project

By default, a portal project includes the static application resources project (PortalWebAssets) as a dependency. This means they are built together and deployed to the same server. If you do not wish to deploy static resources to another server, then you do not need to take any action with respect to the static resources project.

If you wish to decouple the PortalWebAssets project from the Portal project, do the following:

1. Right-click the Portal project and select **Project Properties**.
2. In the Project Properties dialog, select the **Dependencies** node, as shown in Figure 6–8.

Figure 6–8 Project Dependencies Dialog



Dependencies

○ Use Custom Settings

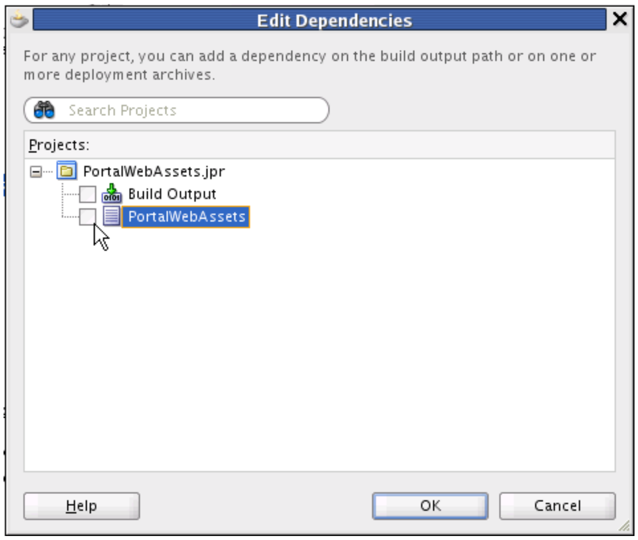
● Use Project Settings

Dependent Projects and Archives:

PortalWebAssets.jpr:PortalWebAssets

3. To remove the dependency, click the **Delete** button, or select the **Edit** button and deselect the project in the Edit Dependencies dialog, as shown in Figure 6–9.

Figure 6–9 The Edit Dependencies Dialog



Edit Dependencies

For any project, you can add a dependency on the build output path or on one or more deployment archives.

Projects:

PortalWebAssets.jpr

□ Build Output

□ PortalWebAssets

4. Generate two distinct archives (`Portal.ear` and `PortalWebAssets.jar`), and deploy them to separate servers. See Section 6.4.3, "Deployment Options."

6.4.3 Deployment Options

The `Portal.ear` file is typically deployed to the application's managed server. The `PortalWebAssets.jar` file can be deployed to any J2EE compliant server container, usually by creating a WAR deployment profile in the PortalWebAssets project and including it in an EAR deployment profile. Another, simpler, option is to unzip the JAR file into an Apache web server. See also Chapter 7, "Deploying and Testing Your

Portal Framework Application."

6.4.4 Using EL to Manage Static Resources

Developers can use EL expressions to dynamically generate the target URL for static resources. You have two options for using EL. With the first option, you need to define a base URL preference. The second allows you to map URLs dynamically.

6.4.4.1 Defining a Base URL Preference

This solution provides a single preference that uses a "base" URL to redirect resources to a desired server. With this option, EL expressions take a format that is illustrated by the following sample:

```
<af:image source="#{preferenceBean.baseResourceURL}/images/globe.png"/>
```

To configure this option, add a preference to the `adf-config.xml` file as follows:

```
<portal:preferences>
...
    <portal:preference id="oracle.webcenter.portalapp.baseresourceurl"
        desc="Default Base Resource URL EL"
        value=
       "#{request.scheme}://#{request.serverName}:#{request.serverPort}#{request.contextPath}"
       resourceType="BaseResourceURL" display="true"
    />
...
</portal:preferences>
```

The only limitation of this technique is that you can only map values to one server. There is only one preference value that can be returned. If you want to dynamically configure URLs, choose the technique described in the next section, Section 6.4.4.2, "Mapping URLs Dynamically."

6.4.4.2 Mapping URLs Dynamically

This solution lets you construct URLs dynamically through the ability to specify multiple namespaces. With this option, resources become a parameter to the preference, allowing the resources to be mapped to the correct namespace.

This solution supports two ADF component categories:

The first category includes static resources referenced by ADF Faces components. This type of call is illustrated by the following sample:

```
<af:image
source="#{preferenceBean.staticResourceURL['/oracle/webcenter/portalapp/static/ima
ges/globe.png']}"/>
```

The second category includes static resources referenced through the `inlineStyle` of ADF Faces components. This type of call is illustrated by the following sample:

```
<af:panelBorderLayout id="pt_pgl1"
inlineStyle='background-image:url(#{preferenceBean.staticResourceURL["/oracle/webc
enter/portalapp/static/images/globe.png"]});'>
```

The EL expression:

```
#{preferenceBean.staticResourceURL['<resource path>']}
```

performs a resource namespace lookup to derive the resource URL prefix. The input to the lookup is the path of the resource (for example:

/oracle/webcenter/portalapp/static/images/globe.png). To establish the mappings between resource namespaces and URLs, edit the <portal:resource-mappings> section of the adf-config.xml file.

To configure this option, add a preference to the adf-config.xml file as follows:

```
<portal:adf-portal-config>
    <portal:preferences>
    ...
    </portal:preferences>
    <portal:resource-mappings>
        <portal:resource-mapping path="/"
 url-prefix="#{request.scheme}://#{request.serverName}:#{request.serverPort}#{request.contextPath}"
       />
    </portal:resource-mappings>
</portal:adf-portal-config>
```

The lookup yields the prefix of the resource URL. The final value of the resource URL is derived by concatenating the URL prefix with the path to the resource. For example,

```
/oracle/webcenter/portalapp/static/images/globe.png
```

yields:

```
http://myserver/static_resources/oracle/webcenter/portalapp/static/images/globe.png
```

At development time, the url-prefix lookup always resolves to the application's context URL, for example: http://<server>:<port>/<context root>.

Example 6–1 shows a sample mapping configuration in adf-config.xml:

Example 6–1 Sample Namespace Lookup Mapping

```
<portal:adf-portal-config>
    <portal:preferences>
    ...
    </portal:preferences>
    <portal:resource-mappings>
        <portal:resource-mapping path="/oracle/webcenter/portalapp/static"
            url-prefix="http://myserver/static_resources"/>
        <portal:resource-mapping path="/mycompany/static/images"
            url-prefix="http://myserver/static_resources"/>
        <portal:resource-mapping path="/mycompany/myapp/static/images"
            url-prefix="http://myserver/static_resources/myapp2"/>
    </portal:resource-mappings>
</portal:adf-portal-config>
```

6.5 How Is Framework Application Security Configured by Default?

By default, a WebCenter Portal Framework application is configured with ADF security.

Default login and logout pages are also provided with the WebCenter Portal Framework Application template.

For more information on ADF security, see Chapter 74, "Securing Your WebCenter Portal Framework Application." See also the *Enabling ADF Security in a Fusion Web Application* section in the *Fusion Developer's Guide for Oracle Application Development Framework*.

6.6 What Configuration Files Should I Know About?

A number of automatically generated configuration files are placed under the WEB-INF and Page Flows folders of a portal project when you create a Portal Framework application.

This section briefly describes these file:

- Section 6.6.1, "The Framework Application Template Default web.xml File"
- Section 6.6.2, "The Framework Application Template Default faces-config.xml File"
- Section 6.6.3, "The Framework Application Template Default trinidad-config.xml File"
- Section 6.6.4, "The Framework Application Template Default adfc-config.xml File"

6.6.1 The Framework Application Template Default web.xml File

Part of Portal Framework application configuration is determined by the content of its Java EE application deployment descriptor file: web.xml. The web.xml file defines many application settings that are required by the application server.

> **Note:** Rather than being specified in web.xml, the context root path is assigned when the application is deployed.

Typical runtime settings include initialization parameters, custom tag library location, and security settings. Depending on the technology you use, other settings may be added to web.xml as appropriate.

> **Note:** For standard Java EE files like web.xml, there is usually a counterpart Oracle-specific file with additional Oracle-specific options, for example, weblogic.xml.

The web.xml file is located in the /public_html/WEB-INF directory relative to the project in your Portal Framework application.

When you first create your Portal Framework application, configuration settings for JSF servlet and mapping and for resource servlet and mapping are automatically added to the starter web.xml file.

The Faces Servlet entry inside <servlet></servlet> tags provides information about the JSF servlet, javax.faces.webapp.FacesServlet. This servlet manages the request processing life cycle for web applications that use JSF to construct the user interface. The configuration setting maps the JSF servlet to a symbolic name, *Faces Servlet*.

The resources entry inside <servlet></servlet> tags provides information about the ADF resource servlet used to serve up web application resources (images, style sheets, JavaScript libraries) by delegating to a ResourceLoader.

The <servlet-mapping></servlet-mapping> tags map the URL pattern to a servlet's symbolic name. You can use either a path prefix or an extension suffix pattern.

By default, JDeveloper uses the path prefix /faces/*. That is, when a URL, for example, http://localhost:8080/SRDemo/faces/index.jsp, is issued, the URL activates the JSF servlet, which strips off the faces prefix and loads the file /SRDemo/index.jsp.

Note: If you prefer to use the extension `jsf` for web pages instead of `jsp` or `jspx`, then you must set the `javax.faces.DEFAULT_SUFFIX` context parameter to `jsf`, for example:

```
<context-param>
   <param-name>javax.faces.DEFAULT_SUFFIX</param-name>
   <param-value>.jsf</param-value>
</context-param>
```

Then add a servlet mapping in `web.xml` that invokes the JSP servlet for files with the extension `jsf`.

To edit `web.xml` in Oracle JDeveloper, right-click `web.xml` in the Application Navigator and choose **Open** from the context menu. This opens `web.xml` in the Web Application Deployment Descriptor editor, in Overview mode. If you are familiar with configuration element names, then you can also use the XML editor to modify `web.xml`.

For information about the configuration elements you can use in the `web.xml` file, see the "Oracle ADF XML Files" section in the *Fusion Developer's Guide for Oracle Application Development Framework.*

6.6.2 The Framework Application Template Default faces-config.xml File

Use the `faces-config.xml` file to register a Portal Framework application's resources, such as custom validators and managed beans, and to define all page-to-page navigation rules. The default name of this file is `faces-config.xml`.

Depending on how resources are packaged, an application can have one or multiple `faces-config.xml` files. For example, you can create individual JSF configuration files for:

- Different areas of your application
- Each library containing custom components or renderers

For more information about creating multiple `faces-config.xml` files, see *Fusion Developer's Guide for Oracle Application Development Framework.*

Example 6–2 illustrates the default `faces-config.xml` file provided through the WebCenter Portal Framework Application template. This file is located in the `/public_html/WEB-INF` directory relative to the project in your Framework application.

Example 6–2 Default faces-config.xml File Provided Through the Framework Application Template

```
<?xml version="1.0" encoding="US-ASCII"?>
<faces-config version="1.2" xmlns="http://java.sun.com/xml/ns/javaee">
  <application>
    <default-render-kit-id>oracle.adf.rich</default-render-kit-id>

<view-handler>oracle.webcenter.portalframework.sitestructure.handler.CustomViewHandler</view-handle
r>
  </application>
  <lifecycle>
    <phase-listener>oracle.webcenter.skin.view.SkinPhaseListener</phase-listener>
  </lifecycle>
  <managed-bean>
    <managed-bean-name>preferenceBean</managed-bean-name>
```

```
<managed-bean-class>oracle.webcenter.portalframework.sitestructure.preference.PortalPreferences</ma
naged-bean-class>
    <managed-bean-scope>application</managed-bean-scope>
  </managed-bean>
  <navigation-rule>
    <from-view-id>*</from-view-id>
    <navigation-case>
      <from-outcome>login_success</from-outcome>
      <to-view-id>/pages_home</to-view-id>
      <redirect/>
    </navigation-case>
    <navigation-case>
      <from-outcome>logout_success</from-outcome>
      <to-view-id>/pages_home</to-view-id>
      <redirect/>
    </navigation-case>
  </navigation-rule>
</faces-config>
```

To edit the `faces-config.xml` file, double-click it in the Application Navigator. By default, the file is opened in the Editor window in *Diagram* mode, as indicated by the active **Diagram** tab at the bottom of the Editor window. When creating or modifying JSF navigation rules, Diagram mode enables you to visually create and manage page flows. For more information, see *Fusion Developer's Guide for Oracle Application Development Framework.*

To create or modify configuration elements other than navigation rules, use the Editor's Overview mode. Enter this mode by clicking the **Overview** tab at the bottom of the Editor window.

JSF allows multiple `<application>` elements in a single `faces-config.xml` file. When you use the JSF Configuration Editor, you can edit only the first instance. For any other `<application>` elements, you must edit the file directly using the XML editor. To use the XML editor, open the `faces-config.xml` file and go to the **Source** tab in the Editor window.

For reference information about the configuration elements you can use in the `faces-config.xml` file, see the "ADF Faces Configuration" section in the *Fusion Developer's Guide for Oracle Application Development Framework.*

6.6.3 The Framework Application Template Default trinidad-config.xml File

The default `trinidad-config.xml` file, available when you create a Portal Framework application, contains information about the application skin family. Additionally, it can contain information about the level of page accessibility support, page animation, time zone, enhanced debugging output, and the URL for Oracle Help for the Web (OHW). Like `faces-config.xml`, the `trinidad-config.xml` file has a simple XML structure that enables you to define element properties using JSF Expression Language (EL) or static values.

Example 6–3 illustrates the default `trinidad-config.xml` file provided through the WebCenter Portal Framework Application template. This file is located in the `/public_html/WEB-INF` directory relative to the project in your Framework application.

Example 6–3 Default trinidad-config.xml File Provided Through the Framework Application Template

```
<?xml version="1.0" encoding="US-ASCII"?>
<trinidad-config xmlns="http://myfaces.apache.org/trinidad/config">

  <skin-family>#{preferenceBean.defaultTrinidadSkin}</skin-family>
  <skin-version>v1</skin-version>
</trinidad-config>
```

In addition to the skin family, you can define the following application values in the `trinidad-config.xml` file:

- Page animation
- Level of page accessibility support
- Time zone
- Enhanced debugging output
- Oracle Help for the Web (OHW) URL

For reference information about the `trinidad-config.xml` file, see the "ADF Faces Configuration" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

6.6.4 The Framework Application Template Default adfc-config.xml File

The `adfc-config.xml` file is the configuration file for an ADF unbounded task flow. This file contains metadata about the activities and control flows contained in the unbounded task flow. The default name for this file is `adfc-config.xml`.

If **ADF Page Flow** is specified as a Selected Technology on the Technology Scope page of the Project Properties dialog, a new `adfc-config.xml` source file is automatically created within the project. The `adfc-config.xml` file is the main source file for an unbounded task flow.

The `adfc-config.xml` file is located in the `/public_html/WEB-INF` directory relative to the project in your Portal Framework application.

> **Note:** If you do not plan to use task flows in your Framework application, you can delete the `adfc-config.xml` file.

For more information about task flows and the `adfc-config.xml` file, see the "Oracle ADF XML Files" section in the *Fusion Developer's Guide for Oracle Application Development Framework.*

6.7 Adding Excluded Files to the Application Navigator

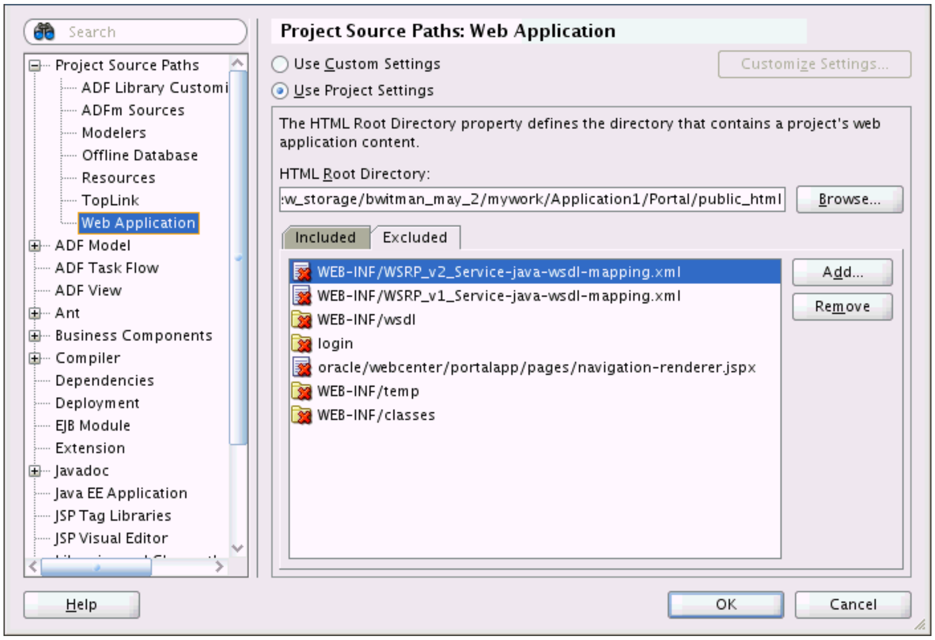
By default, a few files are excluded from view in the Application Navigator. These files are excluded because it is unlikely you'll ever need to edit them. However, because there are potentially some advanced use cases where you might want to edit them, you need to be able to add them back to the JDeveloper UI.

To locate the excluded files:

1. Right-click the project folder and select **Project Properties** from the menu.
2. In the Project Properties dialog, select **Web Application** under the Project Source Paths node.

3. Select the Excluded tab, as shown in Figure 6–10.

Figure 6–10 The Exclude Tab



Project Source Paths: Web Application

○ Use Custom Settings

● Use Project Settings

The HTML Root Directory property defines the directory that contains a project's web application content.

HTML Root Directory: :w_storage/bwitman_may_2/mywork/Application1/Portal/public_html

WEB-INF/WSRP_v2_Service-java-wsdl-mapping.xml
WEB-INF/WSRP_v1_Service-java-wsdl-mapping.xml
WEB-INF/wsdl
login
oracle/webcenter/portalapp/pages/navigation-renderer.jspx
WEB-INF/temp
WEB-INF/classes

4. Select an element from the excluded list and click **Remove** to remove it from the excluded list. As a result, the element is automatically included in the appropriate folder in the Application Navigator.

As an example, the `navigation-renderer.jspx` file is used to render resources in the context of a page template. If you wanted to change the way an external URL is displayed within a page, you would first remove the `navigation-renderer.jspx` file from the excluded list in order for it to appear under the `pages` folder in the Application Navigator. Then, you could open the page and edit it as desired.

6.8 Developing Framework Portal Applications for High Availability

High availability is very important in large WebCenter installations. It allows users to gracefully switch from one node to another node in the cluster. This allows user to keep their session in case a node goes down.

This section explains some guidelines to keep in mind to fully support an HA environment when implementing Framework Portal applications. Even if you are not implementing with HA in mind, these guidelines may help make your application perform better and with more stability.

The following subsections provide guidelines for implementing for a High Available environment:

- Section 6.8.1, "Introduction to High Availability for WebCenter Portal and JDeveloper"
- Section 6.8.2, "Serializing Managed Beans"
- Section 6.8.3, "Minimizing the Session Footprint"
- Section 6.8.4, "Application Configuration"
- Section 6.8.5, "Mutating Managed Beans"

- Section 6.8.6, "Replication Groups"

6.8.1 Introduction to High Availability for WebCenter Portal and JDeveloper

In order to know how we can implement a solution that supports High Availability (HA) we first need to understand how HA works and how WebLogic handles a fail-over.

Whenever you have configured a cluster of managed server for your application, WebLogic will replicate the HTTP session to a secondary machine. When the primary machine where the session is running on fails, WebLogic will point the user to the secondary machine and the user will be able to continue the work without losing hit data.

WebLogic duplicates those sessions by serializing the objects in the session and than transfers it to the secondary machine. Only the object that are stored in the session will be replicated. From an ADF perspective this means that managed bean with `pageFlowScope` and above will be replicated.

In order for this to work all object in the session need to be serializable. If not, the session cannot completely be replicated which means the user will lose data upon fail-over. WebLogic also need to be notified when the state of an object changes so it can propagate these changes to the secondary machine.

6.8.2 Serializing Managed Beans

One of the key items for a successful HA environment is that all object in the session are serializable. If objects cannot be serializable than WebLogic will not be able to replicate those object to the fail-over server.

ADF UI components are not serializable by design. This means that there are bindings in managed bean with PageFlowScope or SessionScope, the replication will fail.

If there is a need for referencing those UI components in managed bean than we recommend following the ComponentReference pattern which is described in following post: http://www.ateam-oracle.com/rules-and-best-practices-for-jsf-component-binding-in-adf/

In addition to this, if custom objects are referenced in the managed bean, you always have to make sure those objects implement the Serializable interface. If not, replication will fail and the user will lose data upon fail-over.

6.8.3 Minimizing the Session Footprint

The session footprint is an important factor when replicating the session. The bigger the session object is, the more traffic the replication will require to propagate the session to the secondary server.

Therefore it is important to keep track of your session footprint. The session footprint can be tracked with tools like JRockit Mission Control (for JRockit JVM) or VisualVM (for Hotspot JVM).

A session footprint of 3MB is considered very high in an ADF application. The reasons for a large footprint can be any of the following:

- Referencing UI components in a managed bean using `pageFlowScope` or above
- Referencing large data sets (View Objects) in managed beans using `pageFlowScope` or above

In order to minimize the footprint some design considerations can take place. When putting large objects in managed beans you always need to ask yourself the following question: Does the object really need to be stored in the `pageFlowScope`? Is `ViewScope` or `RequestScope` not enough? In a lot of the cases `ViewScope` will be sufficient.

Even if you need to pass on information from one view to another you still can use techniques like contextual events or passing parameters instead of storing an entire object in the session.

Lowering the session footprint will not only help in an HA environment. It will also help to optimize the heap size of the JVM. This will allow more users on the node than when a non-optimized implementation is used.

6.8.4 Application Configuration

In order for the application to work in a fail-over environment, we need to tell the application that it needs to behave like an HA application.

This need to be done in two files: `weblogic.xml` and `adf-config.xml`:

weblogic.xml

In order to enable support for session replication you need to tell WebLogic to replicate the persistent store in a clustered environment. This can be done with following code:

```
<weblogic-web-app>
    <session-descriptor>
    <persistent-store-type>
    replicated_if_clustered
    </persistent-store-type>
    </session-descriptor>
</weblogic-web-app>
```

adf-config.xml

In order for HA to work in an ADF environment we need to tell the controller to replicate the beans in `pageFlowScope` and `ViewScope`. This can be done by setting `adf-scope-ha-support` to `true`:

```
<adf-controller-config xmlns="http://xmlns.oracle.com/adf/controller/config">
 <adf-scope-ha-support>true</adf-scope-ha-support>
</adf-controller-config>
```

Business components

Business components also need some additional configurations in order to support HA:

```
jbo.dofailover='true'
jbo.ampooling='true'
```

6.8.5 Mutating Managed Beans

Managed beans with a scope higher than RequestScope (`ViewScope`, `pageFlowScope`) need to be propagated on the secondary node. The controller won't know automatically when those managed beans are changed.

Whenever you make changes in a managed bean and those changes need to be replicated, you need to notify the controller so it can make sure the updated value of the bean will be passed on the secondary node.

This can be done using the following code:

```
Map<String, Object> viewScope =
    AdfFacesContext.getCurrentInstance().getViewScope();
controllerContext ctx = ControllerContext.getInstance();
ctx.markScopeDirty(viewScope);
```

6.8.6 Replication Groups

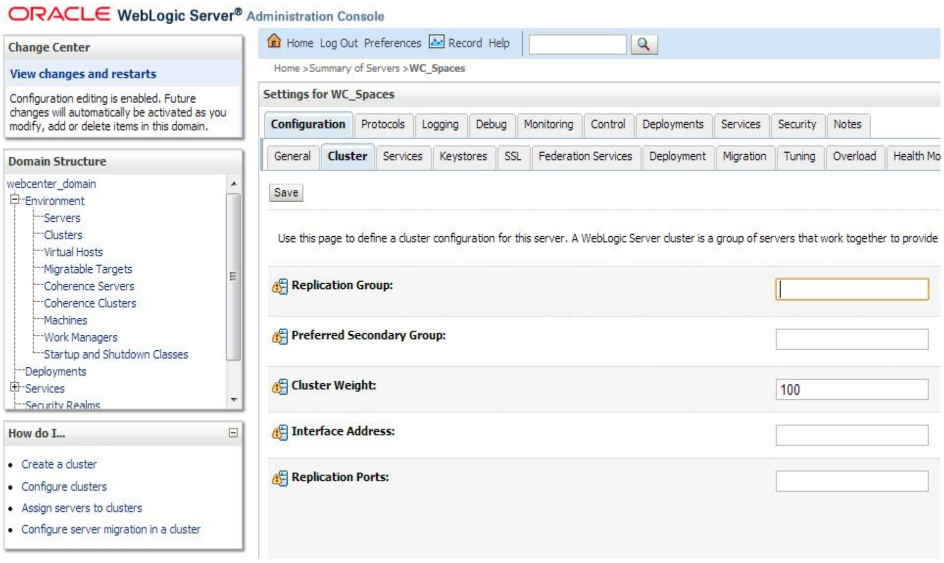
Within an HA environment, each session will be replicated to a second node. Not all nodes in the cluster will have all of the session. This is to save network overhead and performance.

In order to have the best possible outcome, WebLogic will automatically replicate the session to a different machine than the current node. This is safe because if the machine fails, the session is available on a different machine.

If you have a big cluster with many machines it is possible that those machines are set up in different data centers. Therefore, WebLogic allows you to configure replication groups. Those are configured in order to tell WebLogic which secondary machine to use for each machine.

In order to configure the replication group you need to configure the cluster settings in the WebLogic console as shown in Figure 6–11:

Figure 6–11 WebLogic Console - Cluster Setting


ORACLE WebLogic Server® Administration Console
Change Center
View changes and restarts
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.
Domain Structure
webcenter_domain
Environment
Servers
Clusters
Virtual Hosts
Migratable Targets
Coherence Servers
Coherence Clusters
Machines
Work Managers
Startup and Shutdown Classes
Deployments
Services
Security Realms
How do I...
Create a cluster
Configure clusters
Assign servers to clusters
Configure server migration in a cluster
Home Log Out Preferences Record Help
Home >Summary of Servers >WC_Spaces
Settings for WC_Spaces
Configuration Protocols Logging Debug Monitoring Control Deployments Services Security Notes
General Cluster Services Keystores SSL Federation Services Deployment Migration Tuning Overload Health Mo
Save

Use this page to define a cluster configuration for this server. A WebLogic Server cluster is a group of servers that work together to provide

Replication Group:

Preferred Secondary Group:

Cluster Weight: 100

Interface Address:

Replication Ports:

6.9 Securing the Portal

You can define security for an entire portal, a collection of pages and sub-pages, or a single page. You can define security for individual custom components and actions provided by customizable components. In addition, for Oracle WebCenter Portal tools and services that connect to back-end servers using web services, you can provide secure identity propagation with WS-Security.

Because Oracle WebCenter Portal security is based on the JAAS and J2EE standards, enterprise roles defined in the existing identity management store can be leveraged directly when securing a Portal Framework application. You need not synchronize roles within the portal being built. It just references and uses the defined users and roles directly. Note also that you can use file-based security for the development phase of the portal and then easily switch over to enterprise identity management at deployment time.

Oracle WebCenter Portal also provides application roles that you can use to represent the policy of a portal. By associating permissions with an application role defined within the policy store, you can keep them self contained within the portal. On deployment, you can then associate users and enterprise roles with the application roles to grant those permissions to end users.

In some cases, it is desirable to leverage existing portals that have their own authentication mechanism, such as email. The email system is often on a different authentication system (with different user names and passwords) than the portal. The portal must map the email user to the portal user such that end users do not have to enter their user names and passwords each time they need information. Oracle WebCenter Portal Framework provides the means to securely manage these user names and passwords with the External Application functionality.

For more information about options for securing your Portal Framework application, see Chapter 74, "Securing Your WebCenter Portal Framework Application."

7 Deploying and Testing Your Portal Framework Application

This chapter describes how to run, deploy, and test Portal Framework applications using the Integrated WebLogic Server (IntegratedWebLogicServer), and how to deploy your applications from JDeveloper to a WebLogic Managed Server.

This chapter includes the following topics:

- Section 7.1, "Introduction to Oracle WebLogic Servers"
- Section 7.2, "Deploying a Portal Framework Application to the Integrated WebLogic Server"
- Section 7.3, "Deploying a Portal Framework Application to a WebLogic Managed Server"
- Section 7.4, "Transporting Customizations Between Environments"

Note: For information about deploying Oracle WebCenter Portal Personalization files, see Section 66.3, "Deploying Personalization Files." For information about deploying Portal Framework applications through other mechanisms, such as Oracle Enterprise Manager Fusion Middleware Control, Oracle WebLogic Administration Console, and WebLogic Scripting Tool (WLST) commands, see the "Deploying Portal Framework Applications" chapter in *Administering Oracle WebCenter Portal*.

7.1 Introduction to Oracle WebLogic Servers

This section provides an overview of the Integrated WebLogic Server and Oracle WebLogic Managed Servers. Using Oracle JDeveloper, you can test and deploy your applications on the Integrated WebLogic Server, and deploy applications to an Oracle WebLogic Managed Server that resides outside Oracle JDeveloper for staging and further testing or, if you have the required permissions, to an actual production environment.

Integrated WebLogic Server

The Integrated WebLogic Server comes packaged with Oracle JDeveloper. The Integrated WebLogic Server connection appears as IntegratedWebLogicServer in the Resource Palette under **IDE Connections > Application Server**. With the Integrated WebLogic Server, you can quickly and easily test your application at design time without needing to package the application and create and configure a WebLogic Managed Server.

When you run an application, an Integrated WebLogic Server instance for that application automatically starts. You can also start the instance manually by choosing the **Run > Start Server Instance (IntegratedWebLogicServer)** menu option in JDeveloper. Doing so creates a single server instance for all applications; any applications you run will then use this server instance.

Testing Portal Framework applications on the Integrated WebLogic Server helps to improve design-time tasks by:

- Optimizing deployment: the requirement to archive and copy files to a separate server for design time testing is eliminated.
- Instantly refreshing changes to the application: you can directly run most files from project directories, which enables you to make selected changes and refresh these changes while the application is running. For example, you can modify a task flow on a JSPX page, then refresh the page in the browser to view your changes without redeploying the application.
- Removing the requirement to undeploy applications after testing and debugging. If you stop the Integrated WebLogic Server, however, applications running on it are automatically undeployed.

To learn more about testing a Portal Framework application on the Integrated WebLogic Server, refer to Section 7.2, "Deploying a Portal Framework Application to the Integrated WebLogic Server."

WebLogic Managed Server

An Oracle WebLogic Managed Server resides outside of Oracle JDeveloper as part of a domain, and is managed by an Administration server within that domain. A WebLogic Managed Server hosts applications, along with the libraries and other resources needed by those applications. A domain, which is a logically related group of Oracle WebLogic Server resources, can have any number of Managed Servers. Managed Servers can be configured to run applications in a test environment, a production environment, or both.

To learn more about deploying a Portal Framework application to an Oracle WebLogic Managed Server, see Section 7.3, "Deploying a Portal Framework Application to a WebLogic Managed Server."

7.2 Deploying a Portal Framework Application to the Integrated WebLogic Server

The Integrated WebLogic Server is preconfigured so that you can run applications within Oracle JDeveloper without needing to create deployment profiles. However, when the Integrated WebLogic Server instance stops, the application is undeployed and therefore becomes unavailable. For a more persistent testing scenario, you can also deploy your application to the Integrated WebLogic Server. These two options are described in the following subsections:

- Section 7.2.1, "Running a Portal Framework Application in the Integrated WebLogic Server"
- Section 7.2.2, "Deploying a Portal Framework Application to the Integrated WebLogic Server"

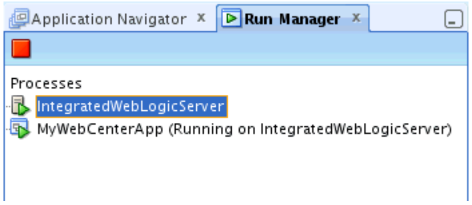
7.2.1 Running a Portal Framework Application in the Integrated WebLogic Server

To run a Portal Framework application, you can right-click the Portal project in the Projects section in the Application Navigator and choose **Run**, or select **Run** from the Run menu or click the **Run** icon from the toolbar to run the current project.

When you run an application in JDeveloper, a server instance named after the application is automatically created. While the application is running, you can switch back and forth between JDeveloper and your browser to make changes at design time in your application, save the changes and then refresh your JSPX page in your browser to view those changes. While in JDeveloper, you can also watch the progress of your applications, as well as stop the server instance (and thus stop the application).

When you run the application page or project, it triggers the packaging and deployment of your Portal Framework application on an Integrated WebLogic Server instance named after the application. You can stop instances of the Integrated WebLogic Server by using the Run Manager panel (shown in Figure 7–1). You can access the Run Manager panel by selecting **Run Manager** from the View menu. To stop the Integrated WebLogic Server instance, just select **IntegratedWebLogicServer** and click the red Terminate icon on the Run Manager tab. You can also stop the instance using the red Terminate icon on the toolbar or the one in the Log window, or by selecting the **Terminate** option from the Run menu.

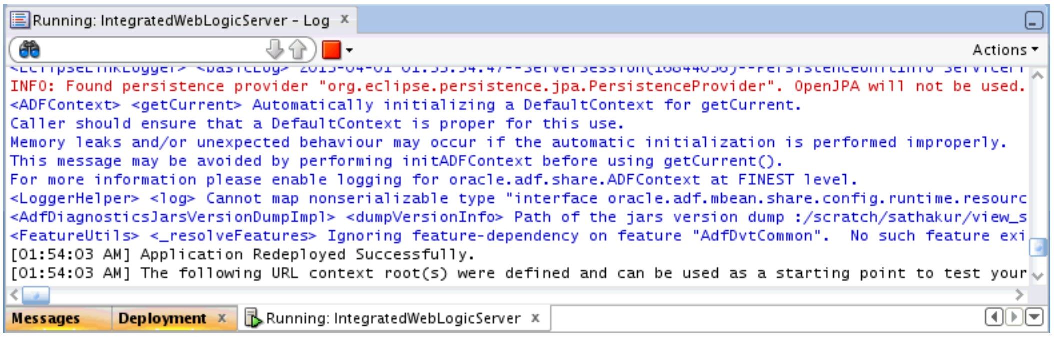
Figure 7–1 Run Manager



```
Processes
IntegratedWebLogicServer
MyWebCenterApp (Running on IntegratedWebLogicServer)
```

Use the IntegratedWebLogicServer Log window (shown in Figure 7–2) to view how the activity is progressing.

Figure 7–2 DefaultServer Log Window


Running: IntegratedWebLogicServer - Log
Actions
Messages
Deployment
Running: IntegratedWebLogicServer

```
INFO: Found persistence provider "org.eclipse.persistence.jpa.PersistenceProvider". OpenJPA will not be used.
<ADFContext> <getCurrent> Automatically initializing a DefaultContext for getCurrent.
Caller should ensure that a DefaultContext is proper for this use.
Memory leaks and/or unexpected behaviour may occur if the automatic initialization is performed improperly.
This message may be avoided by performing initADFContext before using getCurrent().
For more information please enable logging for oracle.adf.share.ADFContext at FINEST level.
<LoggerHelper> <log> Cannot map nonserializable type "interface oracle.adf.mbean.share.config.runtime.resourc
<AdfDiagnosticsJarsVersionDumpImpl> <dumpVersionInfo> Path of the jars version dump :/scratch/sathakur/view_s
<FeatureUtils> <_resolveFeatures> Ignoring feature-dependency on feature "AdfDvtCommon".  No such feature exi
[01:54:03 AM] Application Redeployed Successfully.
[01:54:03 AM] The following URL context root(s) were defined and can be used as a starting point to test your
```

> **Note:** Secure attributes and credentials are migrated by default when running a Portal Framework application on the Integrated WebLogic Server.

7.2.2 Deploying a Portal Framework Application to the Integrated WebLogic Server

When you run your Portal Framework application as described in Section 7.2.1, "Running a Portal Framework Application in the Integrated WebLogic Server", the application is undeployed and becomes unavailable if the Integrated WebLogic Server instance stops. Even if you start IntegratedWebLogicServer again, the application remains unavailable. For a more persistent testing scenario, you can deploy your application to the Integrated WebLogic Server by using the **Deploy** option. This deployed application will always be available while the Integrated WebLogic Server is running.

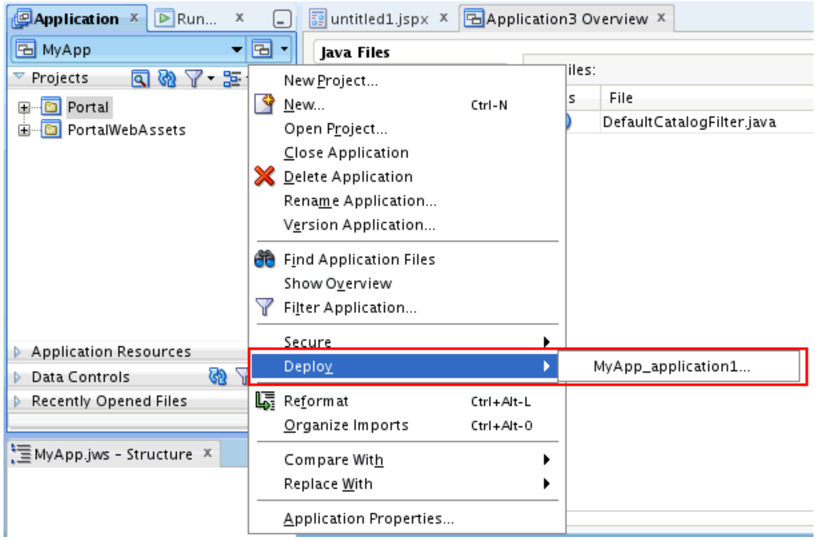
For more information about deploying applications, see the "Deploying Fusion Web Applications" chapter in *Fusion Developer's Guide for Oracle Application Development Framework*.

> **Note:** Before deploying your Portal Framework application if you need to create local data sources for Oracle WebCenter Portal and for Activities used by the Analytics task flow, see Section 4.2.2, "Setting Up a Database Connection."

To deploy your application to the Integrated WebLogic Server:

1. Open your application in JDeveloper.
2. From the **Run** menu, select **Start Server Instance (IntegratedWebLogicServer)** to start the server instance.
3. From the **Application** menu, select **Deploy**, then select the default deployment profile, which is displayed in the format `application name_application1` (Figure 7–3)

Figure 7–3 Deploy Option on the Application Menu

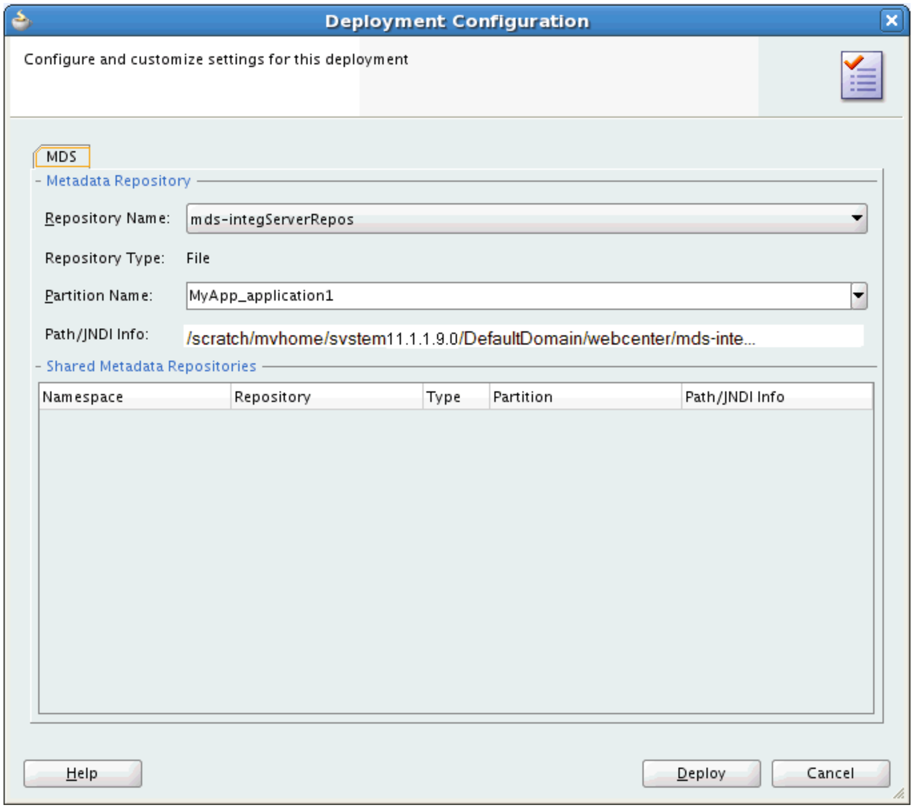


4. In the Deploy dialog, ensure **Deploy to Application Server** is selected, then click **Next**.
5. Select **IntegratedWebLogicServer**, and click **Next**.
6. On the Weblogic Options screen, to accept default selections click **Next**.

7. On the Summary screen, verify the deployment details, and click **Finish**.
8. In the Deployment Configuration dialog, click **Deploy**.

   The Deployment Configuration dialog enables you to choose the target metadata repository or shared metadata repositories. The file system MDS repository, pre-created by JDeveloper, displays in the Repository Name field (Figure 7–4).

Figure 7–4 Deployment Configuration Dialog



Deployment Configuration

Configure and customize settings for this deployment

MDS

Metadata Repository

Repository Name: mds-integServerRepos

Repository Type: File

Partition Name: MyApp_application1

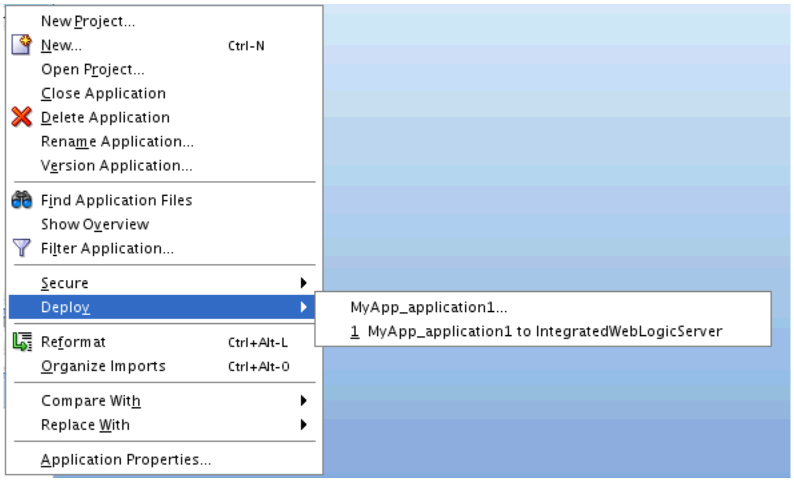
Path/JNDI Info: /scratch/mvhome/svstem11.1.1.9.0/DefaultDomain/webcenter/mds-inte...

Shared Metadata Repositories

Namespace	Repository	Type	Partition	Path/JNDI Info

Note that when you try to redeploy this application, the **Application > Deploy** menu provides the option to select the previous deployment target for your application, as shown in Figure 7–5. This is useful to skip the Deploy dialog screens and directly go to the Deployment Configuration dialog for redeploying to the previous target.

Figure 7–5 Application Menu Showing Deploy Options



7.3 Deploying a Portal Framework Application to a WebLogic Managed Server

When you are ready to test your Portal Framework application using an external test or staging site, you can deploy your applications directly from JDeveloper to an Oracle WebLogic Managed Server.

For information about deploying Portal Framework applications using Fusion Middleware Control, Oracle WebLogic Administration Console, and WLST commands, see the "Deploying Portal Framework Applications" chapter in *Administering Oracle WebCenter Portal*.

This section includes the following subsections:

- Section 7.3.1, "Deployment Roadmap"
- Section 7.3.2, "Packaging a Framework Application"
- Section 7.3.3, "Preparing the Target Environment for Deployment"
- Section 7.3.4, "Deploying a Portal Framework Application to a Managed Server"

7.3.1 Deployment Roadmap

The flowchart and table in this section provide an overview of the prerequisites and tasks required to deploy a Portal Framework application to an Oracle WebLogic Managed Server. Figure 7–6 shows the steps to deploy a Portal Framework application, and the roles that will carry them out.

Figure 7–6 Deploying a Framework Application to a Managed Server

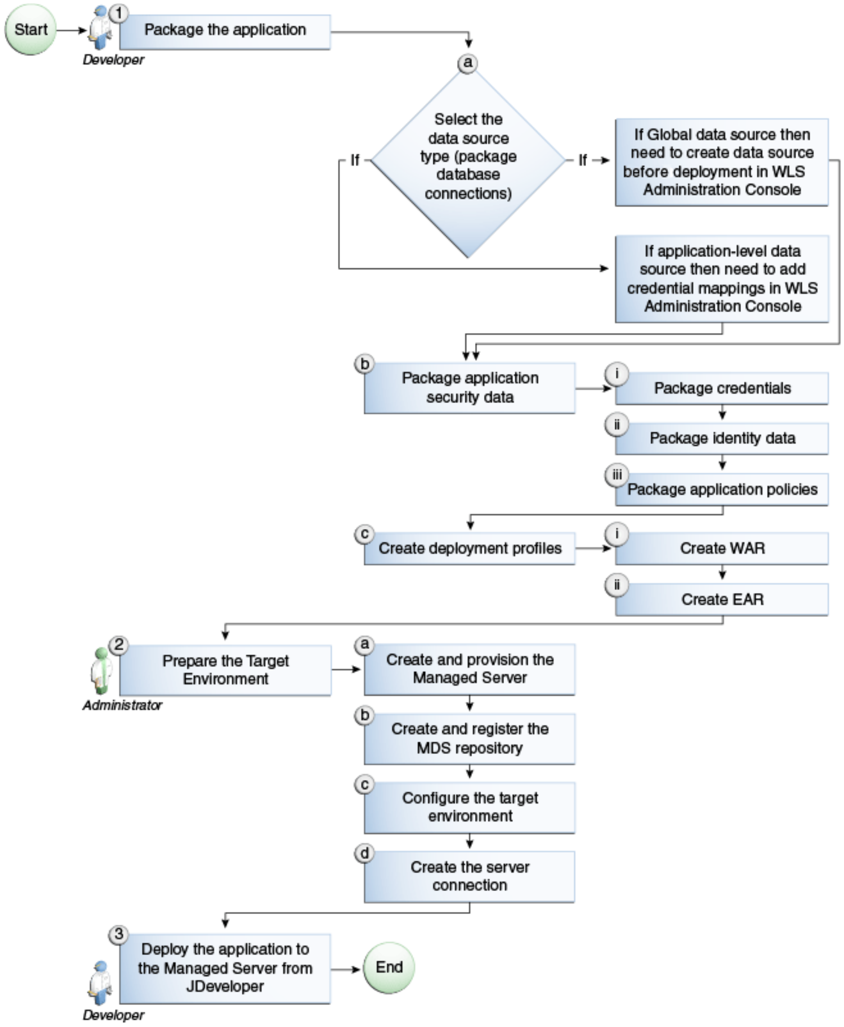

Start
1
Developer
Package the application
a
Select the data source type (package database connections)
If
If
If Global data source then need to create data source before deployment in WLS Administration Console
If application-level data source then need to add credential mappings in WLS Administration Console
b
Package application security data
i
Package credentials
ii
Package identity data
iii
Package application policies
c
Create deployment profiles
i
Create WAR
ii
Create EAR
2
Administrator
Prepare the Target Environment
a
Create and provision the Managed Server
b
Create and register the MDS repository
c
Configure the target environment
d
Create the server connection
3
Developer
Deploy the application to the Managed Server from JDeveloper
End

Table 7–1 shows the tasks, sub-tasks and who will need to carry them out to deploy a Portal Framework application from JDeveloper.

Table 7–1 Deploying a Framework Application to a Managed Server

Actor	Task	Sub-task	Notes
Developer	**1.** Package the Application	**1.a** Select the data source type (package database connections)	You can use either a global data source or an application-level data source. If using a global data source, then you need to create the data source in the WLS Administration Console before deploying. If using an application-level data source, then you may need to add credential mappings using the WLS Administration Console after deploying (see the note below). **Note:** There are two options for deploying from JDeveloper. You can deploy directly to the Managed Server, or you can deploy to an EAR file and then deploy the EAR file using either Fusion Middleware Control, WLST or the WLS Admin Console. If you deploy directly from JDeveloper, the credential mapping step is not required as JDeveloper automatically handles the credential mapping. However, if you deploy the EAR file outside of JDeveloper, then this step is required.
		1.b Package application security data	This sub-task consists of packaging the credentials, identity data, and application policies.
		1.c Create deployment profiles	This sub-task consists of creating the WAR and EAR files. Out-of-the-box, there are default deployment profiles available. However, you may want to create your own deployment profile to specify the context root and application name as per your requirements.
Administrator	**2.** Prepare the Target Environment	**2.a** Create and provision the Managed Server	
		2.b Create and register the MDS repository	
		2.c Configure the target environment	
		2.d Create the server connection	
Developer	**3.** Deploy the Application to a Managed Server from JDeveloper		The final step is to deploy the application to the Managed Server from JDeveloper.

7.3.2 Packaging a Framework Application

When you deploy Portal Framework applications, you may also need to migrate your database connections and the related security for connecting to the databases. You will also need to create a set of project-level and application-level deployment profiles that indicate how a Portal Framework application and its associated files should be packaged so that the application can be deployed to an Oracle WebLogic Managed Server.

This section includes the following:

- Section 7.3.2.1, "Packaging Database Connections and Application Security"
- Section 7.3.2.2, "Creating Deployment Profiles"

7.3.2.1 Packaging Database Connections and Application Security

When you deploy Portal Framework applications, you'll also need to package your database connections and the related security for connecting to the databases. This section describes how to package a Portal Framework application that uses one of the two database connection types: JDBC data source and JDBC URL. This section also describes security migration for applications that use database connections that specify passwords, or external applications that specify shared or public credentials.

Based on the policy defined by your administrator (if, for example, your administrator does not allow any application-level data sources), you may need to migrate the database connections and respective credentials to the target server. The packaging options described below allow you to choose how the database connections should be treated.

This section includes the following sub-sections:

- Section 7.3.2.1.1, "Packaging the Database Connections"
- Section 7.3.2.1.2, "Packaging Application Security Data"

7.3.2.1.1 Packaging the Database Connections

If your Portal Framework application contains JDBC database connections, you'll need to choose how JDeveloper will migrate those database connections to the Oracle WebLogic Managed Server. You can choose from:

- *Global data source*:

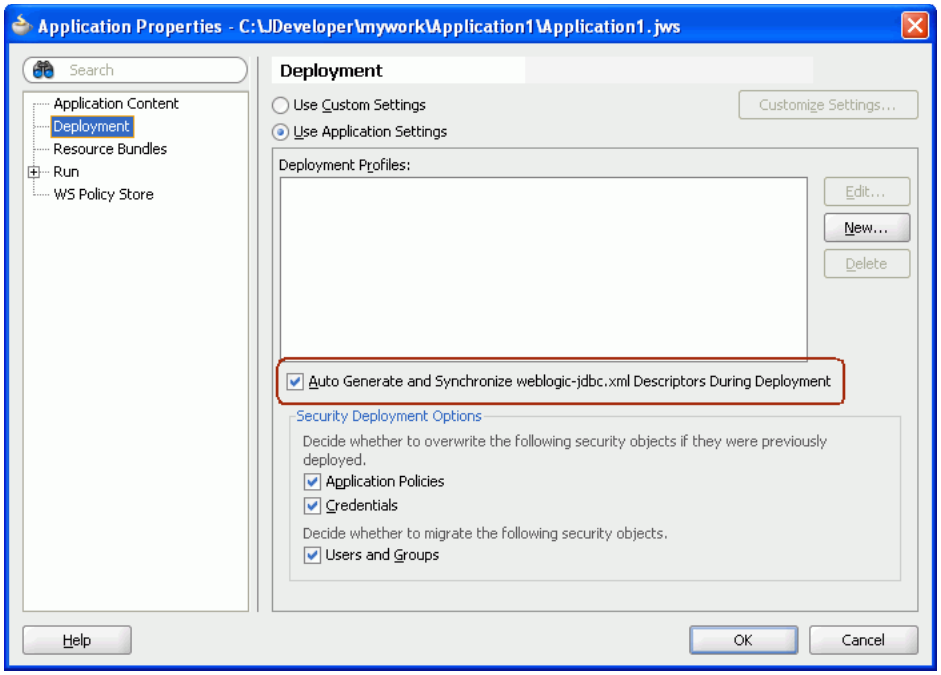
  Oracle recommends that you choose this type of data source if you plan to deploy an application EAR file to a Managed Server running in production mode using Fusion Middleware Control, the Oracle WebLogic Administration Console, or using a WLST (`wldeployer`) command.

  To choose a global data source, deselect the **Auto Generate and Synchronize weblogic-jdbc.xml Descriptors During Deployment** check box when you create the EAR file so that JDeveloper does not create an application-level data source with password indirection. Instead, create the global data source using Oracle WebLogic Administration Console prior to or after deploying the application to a Managed Server in production mode using the default WebCenter Portal and Activities schemas. For more information about creating global data sources, see the "Creating a JDBC Data Source" section in *Configuring and Managing JDBC Data Sources for Oracle WebLogic Server*.

- *Application-level data source with password indirection*:

  JDeveloper generates an application-level data source with password indirection by default when you run an application on the Integrated WebLogic Server. That is, when the **Auto Generate and Synchronize weblogic-jdbc.xml Descriptors During Deployment** check box is selected in the Application Properties dialog, as shown in Figure 7–7.

Figure 7–7 Auto Generate and Synchronize weblogic-jdbc.xml Descriptors During Deployment Checkbox



Application Properties - C:\JDeveloper\mywork\Application1\Application1.jws

Deployment

○ Use Custom Settings

● Use Application Settings

Deployment Profiles:

☑ Auto Generate and Synchronize weblogic-jdbc.xml Descriptors During Deployment

Security Deployment Options

Decide whether to overwrite the following security objects if they were previously deployed.

☑ Application Policies

☑ Credentials

Decide whether to migrate the following security objects.

☑ Users and Groups

To generate an application-level indirection data source, JDeveloper does the following:

- Generates a `<connection>-jdbc.xml` file (such as `WC-jdbc.xml`) for each connection in the Application Resource.
- Sets the indirect password attribute in the `<connection>-jdbc.xml` file:

```
<jdbc-driver-params>
<use-password-indirection>true</use-password-indirection>
</jdbc-driver-params>
```

- Updates `weblogic-application.xml` to add each `<connection>-jdbc.xml` file as a module. For example:

```
<module>
<name>WC</name>
<type>JDBC</type>
<path>META-INF/WC-jdbc.xml</path>
</module>
```

- Adds a resource reference to each JDBC JNDI name in the `web.xml` file, if this file exists. For example:

```
<resource-ref>
<description>WC-Connection</description>
<res-ref-name>jdbc/WCDS</res-ref-name>
<res-type>javax.sql.DataSource</res-type>
<res-auth>Container</res-auth>
</resource-ref>
```

If you choose to generate an application data source with password indirection, then you must add credential mappings using the Oracle WebLogic Administration Console to be able to activate the application. For more information on adding credential mappings, see the "Creating a JDBC Data Source" section in *Configuring and Managing JDBC Data Sources for Oracle WebLogic Server*.

> **Note:** Do not use WLST commands to deploy applications that use application-level data sources with password indirection, as WLST cannot set password indirection credential mappings on the server.

7.3.2.1.2 Packaging Application Security Data

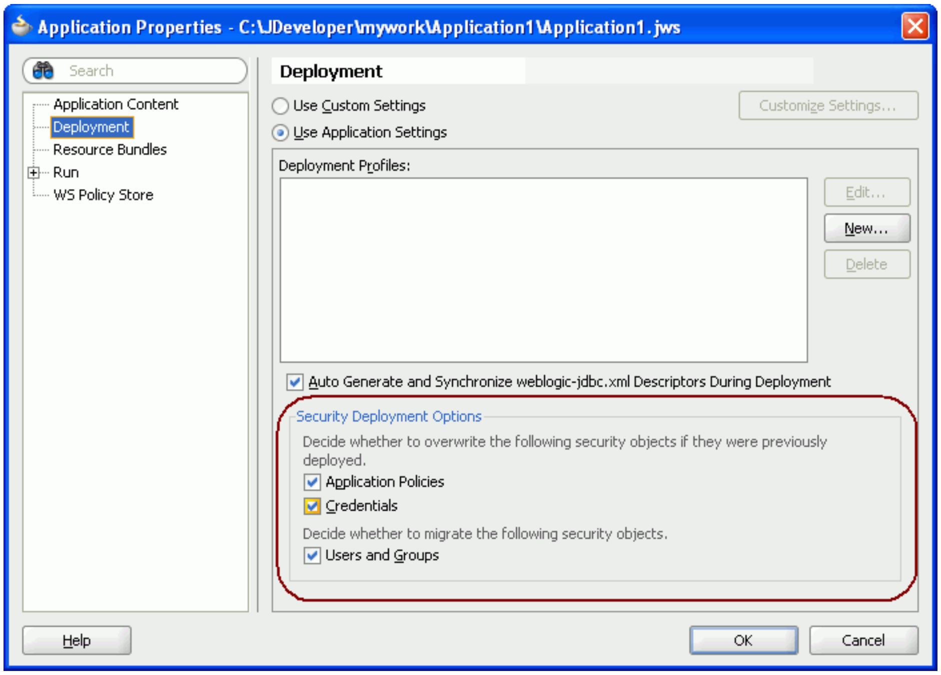
The following is applicable only if you have configured security in your application using the Configure ADF Security wizard, or the application contains connections with secure attributes such as a database connection password or external applications with shared or public credentials:

- Packaging Credentials
- Packaging Identity Data
- Packaging Application Policies

Packaging Credentials

If you do not intend to migrate credentials, then deselect the **Credentials** check box in the **Security Deployment Options** section in the Application Properties dialog (see Figure 7–8).

Figure 7–8 Security Deployment Options



Application Properties - C:\JDeveloper\mywork\Application1\Application1.jws

Deployment

○ Use Custom Settings

● Use Application Settings

Deployment Profiles:

☑ Auto Generate and Synchronize weblogic-jdbc.xml Descriptors During Deployment

Security Deployment Options

Decide whether to overwrite the following security objects if they were previously deployed.

☑ Application Policies

☑ Credentials

Decide whether to migrate the following security objects.

☑ Users and Groups

If you retain the default selection in the Security Deployment Options section, then the credential migration will behave as follows, depending on whether the WebLogic domain is in development or production mode:

- When you deploy a Portal Framework application to a Managed Server running in production mode, secure attributes of the connections packaged within your application and any shared or public credentials specified for external applications are not migrated to the domain-level credential store. This is because secure properties are likely to be different between development and production environments. Therefore, you must reconfigure secure attributes of connections and shared or public credentials for external applications using WLST commands or Fusion Middleware Control, as described in the security-related sections in *Administering Oracle WebCenter Portal*.

  For more information about credential migration behavior, see the "Managing the Credential Store" section in *Securing Applications with Oracle Platform Security Services*.

- When you deploy a Portal Framework application in development mode, you must first enable credential migration. To enable credential migration for an application to be deployed in development mode, start the Managed Server with `-Djps.app.credential.overwrite.allowed=true`, by adding the following option to the `setDomainEnv.cmd` or `setDomainEnv.sh` file located in *`domain`*`\bin`:

  ```
  set EXTRA_JAVA_PROPERTIES=-Djps.app.credential.overwrite.allowed=true %EXTRA_
  JAVA_PROPERTIES%
  ```

Packaging Identity Data

In Figure 7–8, in the Security Deployment Options section, the Users and Groups check box is selected by default. This indicates that the users and groups defined in the application's `jazn-data.xml` file will be migrated to the identity store configured for the WebLogic Managed Server, if the authenticator configured in the domain allows creation of users and groups. When migrating the identity store, you should deselect this option as users and groups defined in the identity store configured for the Managed Server should be used to access the application.

Packaging Application Policies

When the **Application Policies** check box is selected, then the `jps.policystore.migration` parameter in the `weblogic-application.xml` file is set to `OVERWRITE`. This means that during application deployment and redeployment, the application policies packaged with the application will be overwritten on the domain-level policy store for the domain to which the application is being deployed.

If the **Application Policies** check box is not selected, then the `jps.policystore.migration` parameter is set to `MERGE`. This means that the application policies will be migrated during application deployment but not during redeployment, and the existing application policies will not be overwritten.

7.3.2.2 Creating Deployment Profiles

Deploying your application to a Managed Server that resides outside JDeveloper using Fusion Middleware Control or the WLS Administration Console can only be done using a deployment profile, or Enterprise Archive (EAR) file. The EAR file packages (or archives) a Portal Framework application and its associated files so that the application can be deployed to an Oracle WebLogic Managed Server (this is typically done by a system administrator when the target is a production server).

Note: You can deploy Oracle ADF applications, such as Portal Framework applications, only as EAR files.

The EAR file contains application artifacts such as, `adf-config.xml`, `connections.xml`, `weblogic-application.xml`, `jazn-data.xml`, metadata archive (MAR) files, and all project-related WAR files. For Portal Framework applications containing MDS metadata or portlets, a metadata archive file (with the extension `.MAR`) is automatically generated and included in the EAR file. This file contains all MDS metadata and portlet customization data.

For Portal Framework applications, both the WAR (project-level) and EAR-level deployment profiles are created for you as you build your application. These are named:

```
<application name>_webapp1
<application name>_application1
```

respectively, where *`<application name>`* is the name given to the application at creation time.

If your application, however, was not created using the WebCenter Portal Framework Application template, then you may need to create a deployment profile file for your application. You may also want to create your own EAR file if you want to give it a specific name or change what's included in the EAR file through the Application Assembly section. For information about creating an EAR deployment profile for an application, see the "Deploying Fusion Web Applications" chapter in *Fusion Developer's Guide for Oracle Application Development Framework*.

To create an EAR file:

1. Open your application in JDeveloper.

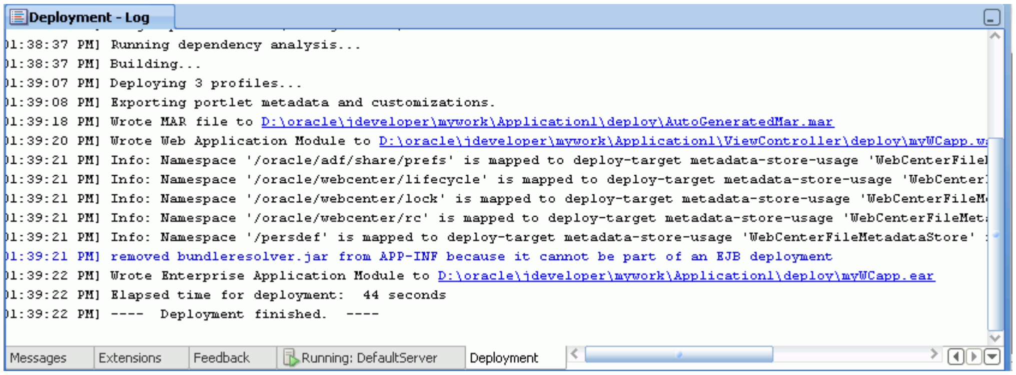
2. From the Application menu, choose **Deploy**, then select the name of the deployment profile. An EAR-level deployment profile is available out of the box, named *application name*_application1.

3. In the Deploy dialog, on the Deployment Action screen, select **Deploy to EAR**, then click **Next**.

4. On the Summary screen, verify the deployment details, and click **Finish**.

   This creates the EAR file in the **deploy** folder located in *`JDEV_HOME`*`\mywork\`*`application_name`*`\deploy\`, as shown in Figure 7–9.

Figure 7–9 EAR Status in Deployment - Log



```
01:38:37 PM] Running dependency analysis...
01:38:37 PM] Building...
01:39:07 PM] Deploying 3 profiles...
01:39:08 PM] Exporting portlet metadata and customizations.
01:39:18 PM] Wrote MAR file to D:\oracle\jdeveloper\mywork\Application1\deploy\AutoGeneratedMar.mar
01:39:20 PM] Wrote Web Application Module to D:\oracle\jdeveloper\mywork\Application1\ViewController\deploy\myWCapp.wa
01:39:21 PM] Info: Namespace '/oracle/adf/share/prefs' is mapped to deploy-target metadata-store-usage 'WebCenterFile
01:39:21 PM] Info: Namespace '/oracle/webcenter/lifecycle' is mapped to deploy-target metadata-store-usage 'WebCenter
01:39:21 PM] Info: Namespace '/oracle/webcenter/lock' is mapped to deploy-target metadata-store-usage 'WebCenterFileM
01:39:21 PM] Info: Namespace '/oracle/webcenter/rc' is mapped to deploy-target metadata-store-usage 'WebCenterFileMet
01:39:21 PM] Info: Namespace '/persdef' is mapped to deploy-target metadata-store-usage 'WebCenterFileMetadataStore' :
01:39:21 PM] removed bundleresolver.jar from APP-INF because it cannot be part of an EJB deployment
01:39:22 PM] Wrote Enterprise Application Module to D:\oracle\jdeveloper\mywork\Application1\deploy\myWCapp.ear
01:39:22 PM] Elapsed time for deployment:  44 seconds
01:39:22 PM] ----  Deployment finished.  ----
```

7.3.3 Preparing the Target Environment for Deployment

This section describes how to create and provision a WebLogic Managed Server instance prior to deploying your Portal Framework application.

This section includes the following sub-sections:

- Section 7.3.3.1, "Creating and Provisioning an Oracle WebLogic Managed Server Instance"
- Section 7.3.3.2, "Creating and Registering the Metadata Service Repository"
- Section 7.3.3.3, "Configuring the Target Environment"
- Section 7.3.3.4, "Creating a WebLogic Managed Server Connection"

7.3.3.1 Creating and Provisioning an Oracle WebLogic Managed Server Instance

Before deploying a Portal Framework application, you must create a WebLogic Managed Server based on the "Oracle WebCenter Custom Portal" template that contains all the required shared libraries and an MDS Repository. For instructions on how to create a new managed server, see the "Extending an Existing Domain" section in *Installation Guide for Oracle WebCenter Portal*.

> **Note:** Oracle does not recommend deploying Portal Framework applications to any of the preconfigured Managed Servers created during Oracle WebCenter Portal installation, or to a domain Administration Server.

7.3.3.2 Creating and Registering the Metadata Service Repository

After creating and provisioning the WebLogic Managed Server instance, you must create and register a Metadata Service Repository (MDS) schema for the application on the WebLogic Domain's Administration Server instance, as described in the "Creating and Registering the Metadata Service Repository" section in *Administering Oracle WebCenter Portal.*

7.3.3.3 Configuring the Target Environment

After creating the Managed Server and creating and registering the MDS repository, continue by configuring the data sources, and the connections to the Identity Store, and the Policy and Credential Store. For information on configuring data sources, see the "Creating a JDBC Data Source" section in *Configuring and Managing JDBC Data Sources for Oracle WebLogic Server*. Note that when setting up the data source, you must provide a password or the connection may not be created when the application is deployed.

7.3.3.4 Creating a WebLogic Managed Server Connection

Before you can deploy your applications using JDeveloper to an Oracle WebLogic Managed Server instance that resides outside JDeveloper, you must create a connection to the Managed Server instance where you will deploy the application. Before you create a connection to an Oracle WebLogic Managed Server instance, ensure that the target Managed Server instance is up and running, and has the required libraries.

To create a connection to an Oracle WebLogic Managed Server:

1. In JDeveloper, from the File menu, select **New**.

2. In the New Gallery, expand General, select **Connections**, and then **Application Server Connection**.
3. Click **OK**.
4. In the Create Application Server Connection wizard, for Step 1, enter a name for the new connection (for example, `WC_CustomPortal`), and then click **Next**.
5. At Step 2, specify the user name and password for authentication, and then click **Next**.
6. At Step 3, enter the host name of the WebLogic Managed Server (for example, `webcenter.myserver.example.com`) and the port number (for example, 7888).
7. In the Weblogic Domain field, specify the name of the domain in which the WebLogic Managed Server instance is created (for example, `wc_domain`), and then click **Next**.
8. At Step 4, click **Test Connection**.

   If the test is successful, you now have a connection to the target WebLogic Managed Server.
9. Click **Finish**.

7.3.4 Deploying a Portal Framework Application to a Managed Server

You can deploy a Portal Framework application to a Managed Server using either local application or global data sources. Local application data sources can only be accessed by the deployed application. However, it's an easy way to deploy in that it needs no other data source configuration in order to work if deployed directly from JDeveloper.

Global data sources benefit from being able to be shared by other applications on the server where database connection configuration updates can be more easily maintained and picked up by all users of the global data source. For more information about data sources, see the "Choosing the Data Source" section in *Administering Oracle WebCenter Portal*.

This section contains the following subsections:

- Section 7.3.4.1, "Deploying to a Managed Server Using Local Data Sources"
- Section 7.3.4.2, "Deploying to a Managed Server Using Global Data Sources"

7.3.4.1 Deploying to a Managed Server Using Local Data Sources

When you deploy to a Managed Server, the application EAR file is generated. The EAR file packages the metadata archive (MAR file), which includes the metadata content to be deployed to an MDS repository. Additionally, the `adf-config.xml` file is reconfigured with a modified `mds-config` for the target deployment environment. Application-wide features, security, caching, and change persistence remain unchanged. Properties for other Oracle components, if any, are also configured in this file. Similarly, JSF and JSTL shared libraries are added in the `weblogic.xml` file during packaging.

To deploy a Portal Framework application to a Managed Server using local data sources:

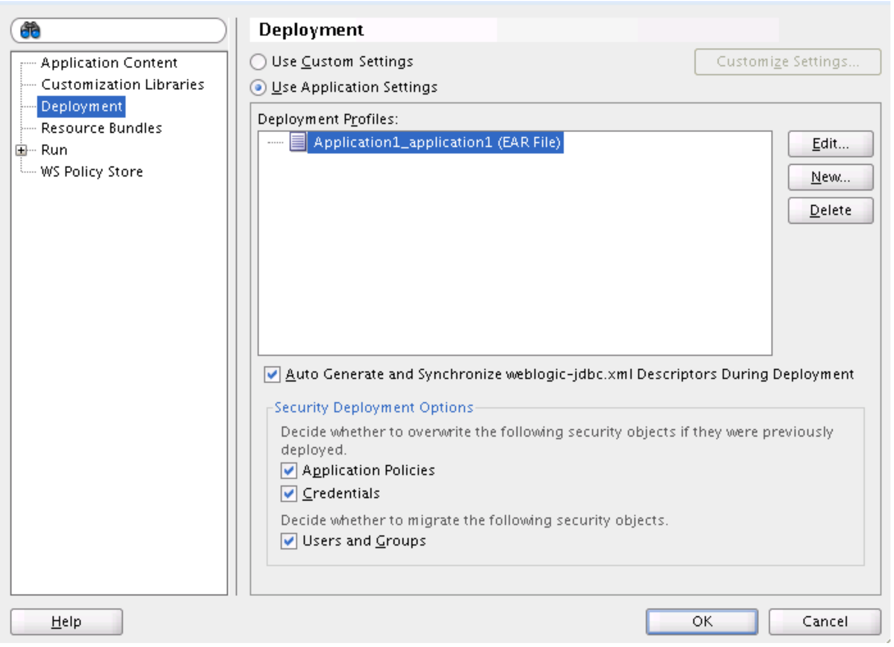
1. In JDeveloper, in the Application Navigator, open the application to be deployed.
2. Create a local data source if your application contains task flows that use the WebCenter schema. If your application uses Analytics task flows, create a separate

local data source for the Activities schema. For information, see Section 4.2.2, "Setting Up a Database Connection."

3. From the Application menu, select **Application Properties**.

   The Application Properties dialog displays (Figure 7–10).

Figure 7–10 Application Properties Dialog



Deployment

○ Use Custom Settings

● Use Application Settings

Deployment Profiles:

Application1_application1 (EAR File)

☑ Auto Generate and Synchronize weblogic-jdbc.xml Descriptors During Deployment

Security Deployment Options

Decide whether to overwrite the following security objects if they were previously deployed.

☑ Application Policies

☑ Credentials

Decide whether to migrate the following security objects.

☑ Users and Groups

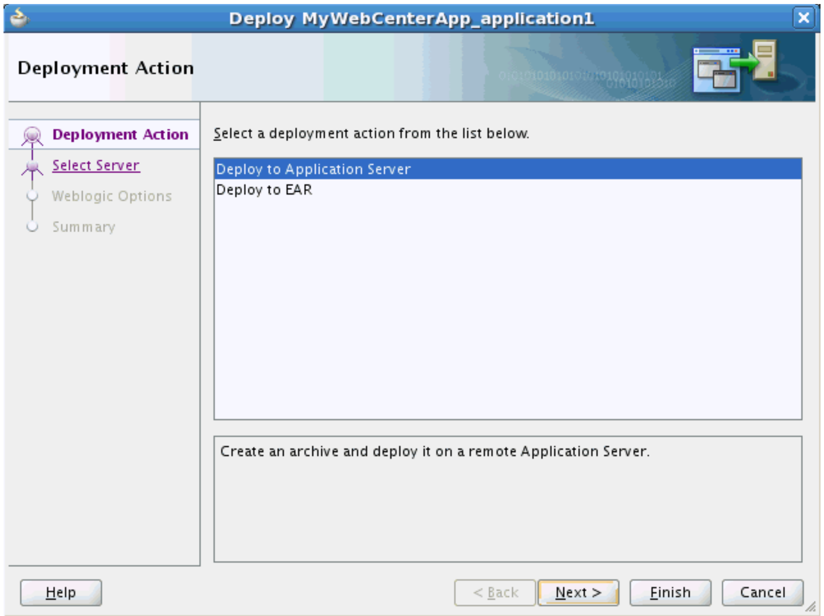
4. Choose **Deployment** from the navigation panel to display the Deployment options.

5. Make sure that the `Auto Generate and Synchronize weblogic-jdbc.xml Descriptors During Deployment` check box is selected and click **OK**.

6. From the Application menu, select **Deploy** and then the application name.

   The Deployment Action dialog displays (Figure 7–11).

Figure 7–11 Selecting the Deployment Action



Select a deployment action from the list below.

Deploy to Application Server
Deploy to EAR

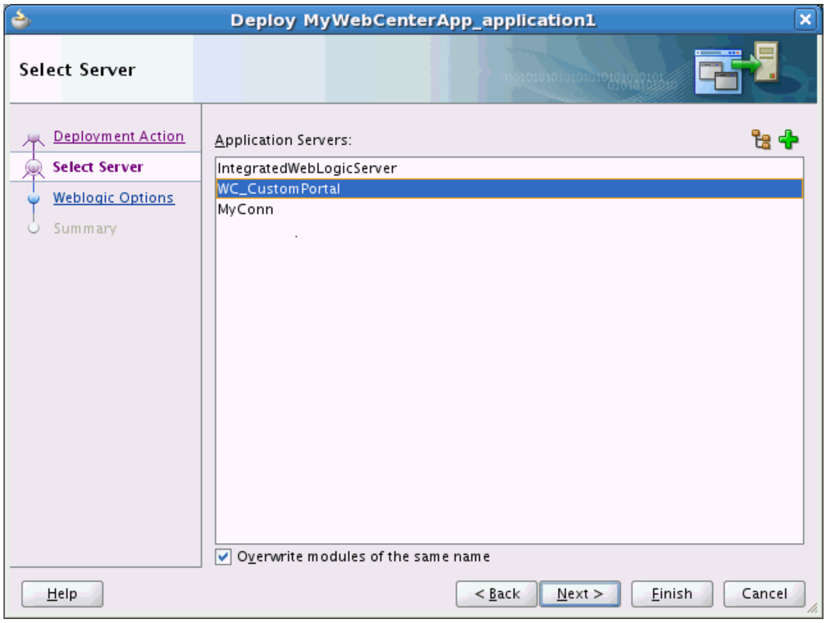
Create an archive and deploy it on a remote Application Server.

7. Select **Deploy to Application Server** and click **Next**.

8. Select the connection name of the Managed Server (for example, `WC_CustomPortal`), and click **Next** (Figure 7–12).

   If the server to which you want to deploy is not listed, click the Add icon (**+**) and complete the connection details to add the server to the list.

Figure 7–12 Select Server Dialog



Application Servers:

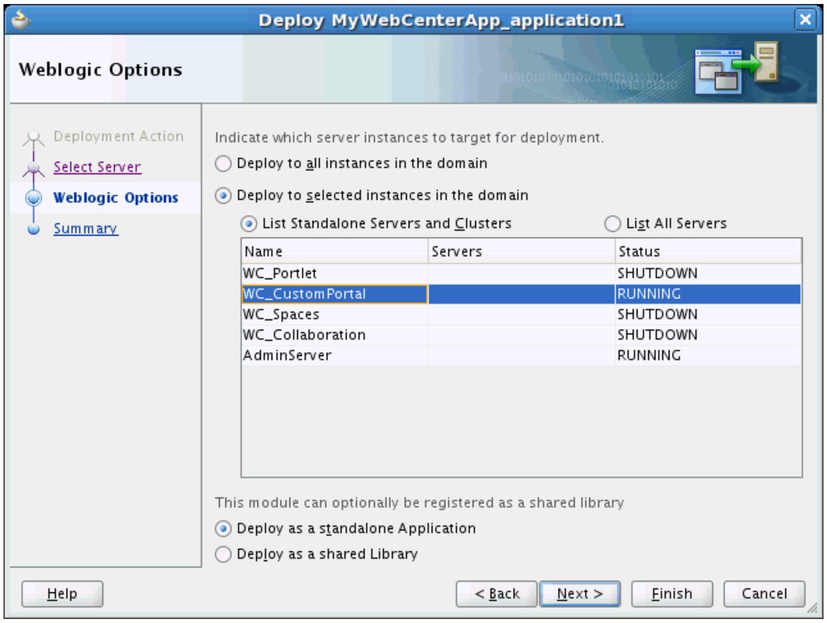
IntegratedWebLogicServer
WC_CustomPortal
MyConn

☑ Overwrite modules of the same name

9. Select `Deploy to selected instance in the domain`, select the managed server from the list (for example, `WC_CustomPortal`), and click **Next** (Figure 7–13).

In most cases you will want to deselect **Deploy to all instances in the domain** and select the specific servers and clusters to deploy to. Refer to the online help for more information about using these options.

Figure 7–13 Deployment WebLogic Options dialog



Indicate which server instances to target for deployment.

○ Deploy to all instances in the domain

● Deploy to selected instances in the domain

● List Standalone Servers and Clusters ○ List All Servers

Name	Servers	Status
WC_Portlet		SHUTDOWN
WC_CustomPortal		RUNNING
WC_Spaces		SHUTDOWN
WC_Collaboration		SHUTDOWN
AdminServer		RUNNING

This module can optionally be registered as a shared library

● Deploy as a standalone Application

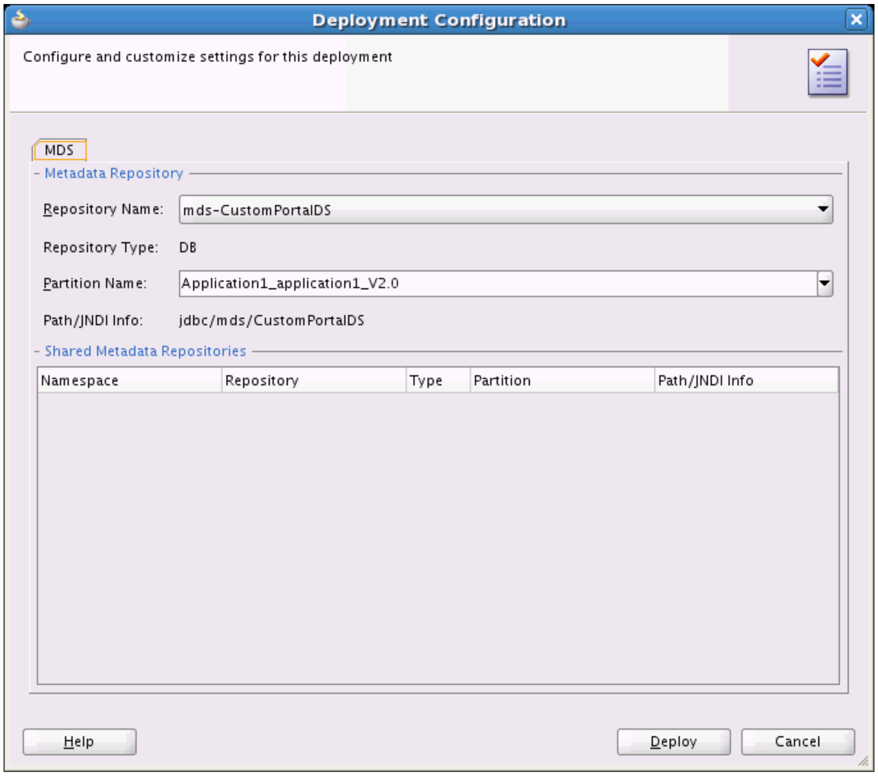
○ Deploy as a shared Library

10. On the Deployment Summary dialog, verify the deployment details. Click **Finish** to start the deployment.

    The Deployment Configuration dialog displays (Figure 7–14).

11. Select the Repository Name (for example, `mds-CustomPortalDS`), enter a Partition Name (if the partition does not already exist then it will be created during deployment), and click **Deploy**.

Figure 7–14 Deployment Configuration Dialog



Deployment Configuration

Configure and customize settings for this deployment

MDS

Metadata Repository

Repository Name: mds-CustomPortalDS

Repository Type: DB

Partition Name: Application1_application1_V2.0

Path/JNDI Info: jdbc/mds/CustomPortalDS

Shared Metadata Repositories

Namespace	Repository	Type	Partition	Path/JNDI Info

12. Continue by doing any post-deployment security or data source connection configurations that may be required as described in the "Post-Deployment Configuration" section in *Administering Oracle WebCenter Portal*.

7.3.4.2 Deploying to a Managed Server Using Global Data Sources

Deploying to a Managed Server using global data sources is recommended when the application is not intended to run on a Managed Server created with the WebCenter Custom Portal template, or is intended to run against custom data sources not named `WebCenterDS` or `ActivitiesDS`.

Oracle recommends using the default data source names, but if you use nondefault pre-seeded data sources, then you must name your data sources accordingly and follow the pre- or post-deployment global data source creation steps to create data sources that map to the names you have chosen. For more information, see the "Choosing the Data Source" section in *Administering Oracle WebCenter Portal*.

To deploy to a Managed Server using global data sources:

1. Open the application to be deployed in JDeveloper.
2. Determine the JNDI names your application will be using for the data sources.

   The JNDI names will depend on whether you've created a database connection for your application in JDeveloper or are using the defaults. The following table shows the default JNDI names:

Data Source	JDeveloper JNDI Name	Default JNDI Name
WebCenterDS	jdbc/*WebCenterConnectionNameDS* (where *WebCenterConnectionName* is the name of the WebCenter schema database connection)	jdbc/webcenter/CustomPortalDS
ActivitiesDS	jdbc/*ActivitiesConnectionNameDS* (where *ActivitiesConnectionName* is the name of the Activities schema database connection)	jdbc/activities/CustomPortalDS

3. From the Application menu, select **Application Properties**.

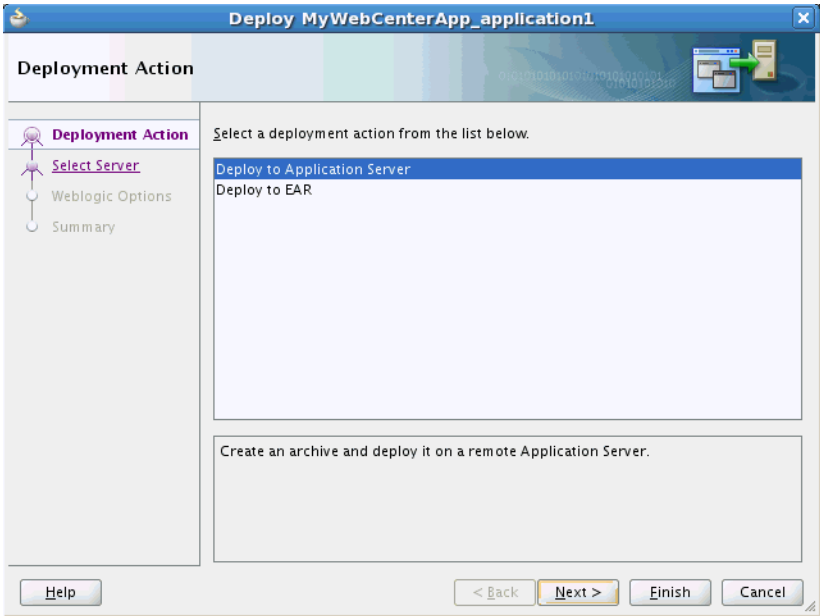
4. Choose **Deployment** from the navigation panel to display the Deployment options.

5. Deselect the `Auto Generate and Synchronize weblogic-jdbc.xml Descriptors During Deployment` check box if selected and click **OK**.

6. From the Application menu, select **Deploy**, and then the application name.

7. Select **Deploy to Application Server** and click **Next** (Figure 7–15).

Figure 7–15 Choosing a Deployment Action



Select a deployment action from the list below.

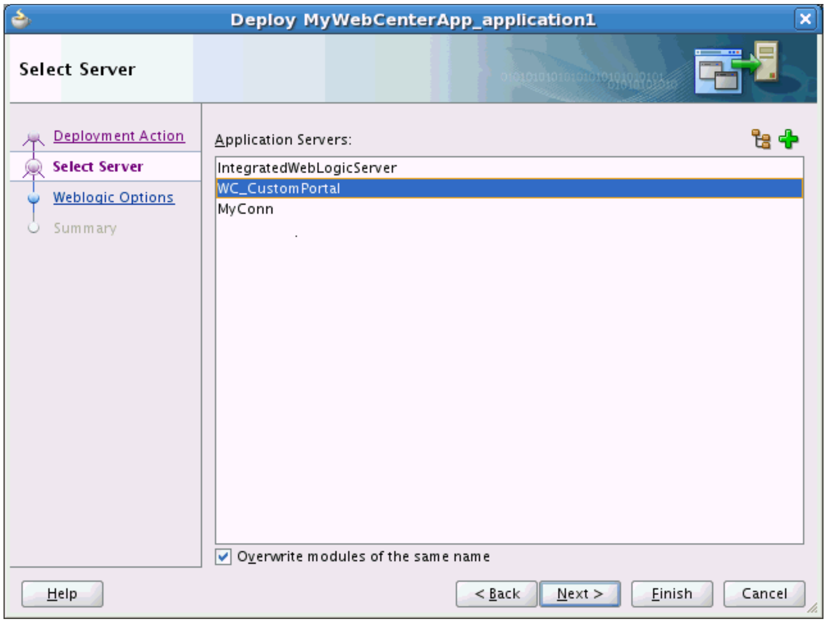
Deploy to Application Server
Deploy to EAR

Create an archive and deploy it on a remote Application Server.

8. Select the connection name of the Managed Server (for example, `WC_CustomPortal`), and click **Next** (Figure 7–16).

   If the server to which you want to deploy is not listed, click the Add icon (**+**) and complete the connection details to add the application server to the list.

Figure 7–16 Selecting a Managed Server Connection



Application Servers:

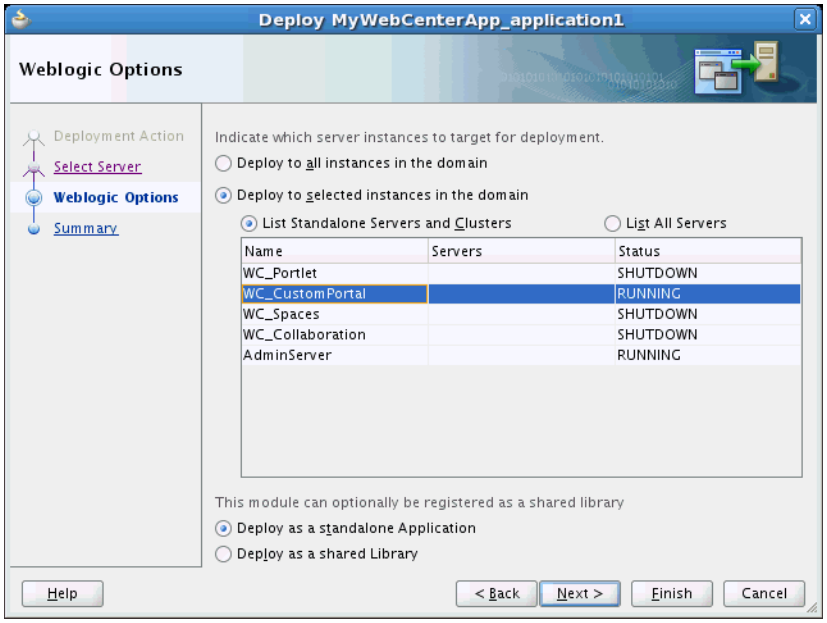
IntegratedWebLogicServer
WC_CustomPortal
MyConn

☑ Overwrite modules of the same name

9. Select `Deploy to selected instance in the domain`, select the managed server from the list (for example, `WC_CustomPortal`), and click **Next** (Figure 7–17).

   In most cases you will want to deselect **Deploy to all server instances in the domain** and select the specific servers and clusters to deploy to using the Server Instances dialog. Refer to the online help for more information about using these options.

Figure 7–17 Selecting the Managed Server



Indicate which server instances to target for deployment.

○ Deploy to all instances in the domain

● Deploy to selected instances in the domain

● List Standalone Servers and Clusters ○ List All Servers

Name	Servers	Status
WC_Portlet		SHUTDOWN
WC_CustomPortal		RUNNING
WC_Spaces		SHUTDOWN
WC_Collaboration		SHUTDOWN
AdminServer		RUNNING

This module can optionally be registered as a shared library

● Deploy as a standalone Application

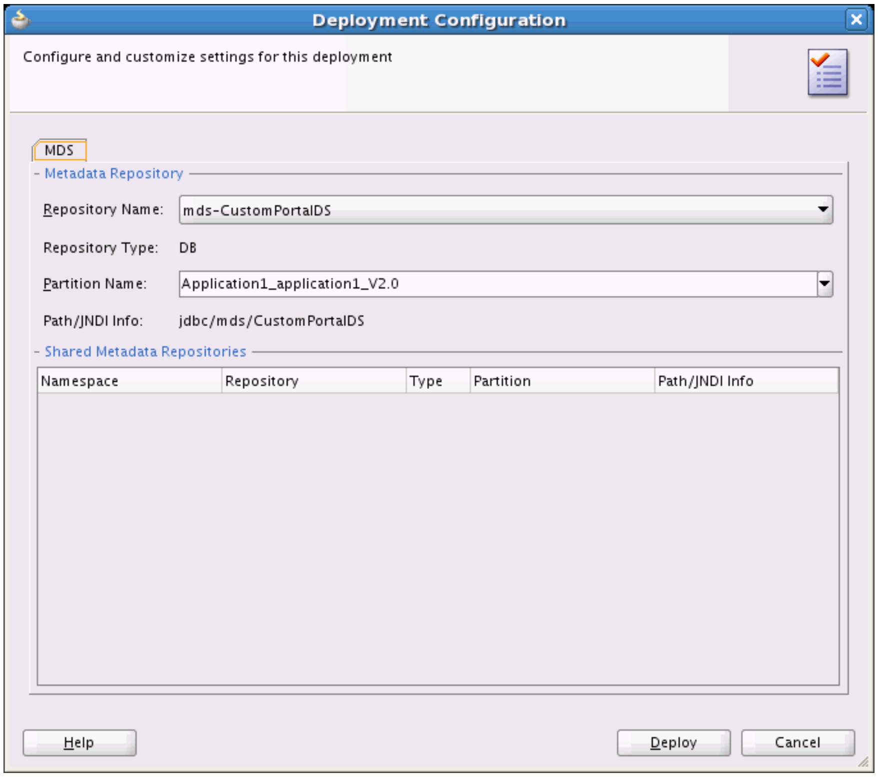
○ Deploy as a shared Library

10. On the Deployment Summary dialog, verify that the deployment options are correct and click **Finish** to start the deployment.

    The Deployment Configuration dialog displays (Figure 7–18).

11. Select the Repository Name (for example, `mds-CustomPortalDS`), enter a Partition Name (if the partition does not already exist then it will be created during the deployment), and click **Deploy**.

Figure 7–18 Deployment Configuration Dialog



Configure and customize settings for this deployment

Metadata Repository

Repository Name: mds-CustomPortalDS

Repository Type: DB

Partition Name: Application1_application1_V2.0

Path/JNDI Info: jdbc/mds/CustomPortalDS

Shared Metadata Repositories

Namespace	Repository	Type	Partition	Path/JNDI Info

12. Continue by doing any post-deployment security or data source connection configurations that may be required as described in the "Post-Deployment Configuration" section in *Administering Oracle WebCenter Portal*.

7.4 Transporting Customizations Between Environments

When migrating a deployed application to a new environment, post-deployment customizations made to pages, WebCenter Portal tools and services, and portlets (PDK-Java and WSRP version 2 producers) must be migrated too. Export and import utilities are available to assist with this process. For more information, see the "Managing Export, Import, Backup, and Recovery for Portal Framework Applications" chapter in *Administering Oracle WebCenter Portal*.

8 Understanding the WebCenter Portal Framework Application Life Cycle

This chapter discusses tasks, tools, and techniques for managing a WebCenter Portal Framework application throughout its life cycle.

This chapter includes the following topics:

8.1 What Is the WebCenter Portal Framework Application Life Cycle?

The WebCenter Portal Framework application life cycle refers to the path a Framework Portal application takes from development through production. The phases of the life cycle typically include development, testing, staging, and production. Each phase requires certain tasks to be performed. Some tasks are performed only once, like setting up a content repository. Others are performed more frequently, like nightly builds. The phases of the portal life cycle are described in Table 8–1.

Table 8–1 WebCenter Portal Framework Application Life Cycle Phases

Life Cycle Phase	Primary Actors/Roles	Description
Development	■ Developers ■ Content Modelers ■ Content Contributors	The development portal is primarily source control and file-based. Developers work locally in JDeveloper and deploy to the Integrated WebLogic server. The development portal typically employs test data and content. Some of the features that are developed in this phase of the life cycle include: ■ portlets ■ task flows ■ shared libraries ■ skins ■ navigation models ■ page templates ■ display templates ■ content models ■ data transfer and interportlet communication ■ security The code from the development environment is built (usually nightly) and deployed to a clean, independent, targeted environment. WebCenter provides a build script that can be adapted for this purpose. See Section 8.8, "Configuring a Nightly Build Script."

Table 8–1 (Cont.) WebCenter Portal Framework Application Life Cycle Phases

Life Cycle Phase	Primary Actors/Roles	Description
Testing	■ Developers ■ QA Engineers ■ IT Administrators	The development portal is built (usually nightly) and deployed to an independent testing environment. The test environment typically includes a Metadata Service (MDS) and policy store that are database-based, and a dedicated Oracle WebCenter Content instance. The testing environment may contain test data and test content that will not become part of the production portal. Portlet producers may be shared between the test and development environments. However, if the usage load is high, Oracle recommends that separate instances be created.
Staging	■ Site Managers ■ IT Administrators ■ Content Contributors	The staging environment provides a stable environment where final configuration and testing takes place before the portal is moved to production. Content contributors add content and refine the portal structure. Typically, the staging environment includes a dedicated Oracle WebCenter Content server, as well as dedicated portlet producer server(s). The staging server is often maintained as a mirror of the production site.
Production	■ Site Managers ■ IT Administrators ■ Content Contributors	A production portal is live and available to end users. A portal in production can be modified with tools like the Resource Manager and Oracle WebCenter Portal's Composer. For instance, an administrator might add additional portlets to a portal or reconfigure the contents of a portal. Individual users with proper authorization can also customize their view. See *Administering Oracle WebCenter Portal*. WebCenter provides a propagation tool for migrating metadata to the production environment. See Section 8.13, "Using the Propagation Tool to Propagate From Staging to Production." Content is provisioned using Oracle WebCenter Content replication tools. See Section 8.14, "Propagating Content From Oracle WebCenter Content." WebCenter provides WLST commands for importing and exporting portlet preferences. For more information, see Section 8.16, "Migrating Portlet Preferences."

8.2 What Are the Major Life Cycle Tasks?

Each phase of the life cycle requires actors (developers, administrators, content contributors, and others) to perform certain tasks. This section provides an overview of the kinds of tasks that are performed during each phase of the portal life cycle.

- Section 8.2.1, "One-Time Setup Tasks"
- Section 8.2.2, "Development Environment Tasks"
- Section 8.2.3, "Nightly Build Environment Tasks"
- Section 8.2.4, "Testing Environment Tasks"
- Section 8.2.5, "Stage Environment Tasks"
- Section 8.2.6, "Production Environment Tasks"

8.2.1 One-Time Setup Tasks

You must perform certain preparatory steps to set up the development, build/test, stage, and production environments. Table 8–2 provides a general list of these preliminary setup tasks and the environments to which they apply. See also Section 8.8, "Configuring a Nightly Build Script" and Section 8.9, "Setting Up a Staging or Production Environment for the First Time."

Table 8–2 Typical One-Time Setup Tasks

Setup Task	Development	Build/Test	Stage	Production
Install JDeveloper	Yes	No	No	No
Install Oracle WebCenter Portal	Yes	Yes	Yes	Yes
Install Oracle WebLogic Server; create a domain and managed servers	No	Yes	Yes	Yes
Create required database schemas using RCU	No	Yes	Yes	Yes
Install and configure Oracle WebCenter Content	Yes	Yes	Yes	Yes
Install identity management components, such as Oracle Access Manager	No	Yes	Yes	Yes
Create the required Oracle Platform Security Services policies in the policy store	No	Yes	Yes	Yes
Create required user credentials in the credential store	No	Yes	Yes	Yes
Create connections to back end servers	Yes	Yes	Yes	Yes
Create build scripts	Yes	No	No	No
Create deploy and configure scripts	No	No	Yes	Yes
Integrate/configure Oracle WebCenter Portal Personalization *	Yes	Yes	Yes	Yes

* For more information on Oracle WebCenter Portal Personalization, see the chapter "Managing Personalization" in the *Administering Oracle WebCenter Portal* and Chapter 66, "Personalizing Oracle WebCenter Portal Applications."

Another technique for setting up an environment for the first time is to clone an existing instance. Typically, this strategy is used to clone a production instance from a stage instance. For detailed information on this "test to production" technique, see the section "Moving from a Test to a Production Environment" in the *Administrator's Guide*.

8.2.2 Development Environment Tasks

In a development environment, each developer has a local JDeveloper instance that is connected to a source control system and a shared Oracle WebCenter Content repository. Developers store metadata and code in source control. Portlets are deployed independently to a producer server and consumed by the portal.

In a development environment, developers typically build and run the application locally using the Integrated WebLogic Server. Both MDS and the Policy Store are file-based in the local development environment.

For more information, see Chapter 2, "Setting Up Your Development Environment" and Chapter 3, "Working Productively in Teams."

8.2.3 Nightly Build Environment Tasks

On a daily basis, developers work in JDeveloper and run code changes locally on the Integrated WebLogic Server, and code changes are checked into a source control system.

If you wish to set up a build environment that produces a clean environment that is built each night, there are certain tasks that must be performed with each build, including:

- Creating schema (typically with Oracle Repository Creation Utility – RCU)
- Creating and setting up the domain
- Creating and configuring managed servers
- Deploying the application

WebCenter provides sample build scripts that you can modify and use for your environment. See Section 8.8, "Configuring a Nightly Build Script." Nightly builds are usually made available to people within the organization, like QA engineers, technical writers, managers, and others. See also Section 8.4, "Understanding the Build and Test Environments."

For information on integrating Oracle WebCenter Portal Personalization into your development environment, see Section 66.2, "Integrating Personalization in Your Application."

8.2.4 Testing Environment Tasks

Usually, the testing environment is a mirror of the nightly build environment that is accessed by QA engineers. The tasks involved in providing a clean test environment are usually the same as creating a clean build environment. See also Section 8.4, "Understanding the Build and Test Environments."

8.2.5 Stage Environment Tasks

Runtime tools play a bigger role in the staging environment than in the development environment. Nonetheless, occasional updates from development will need to be deployed to the stage environment. To facilitate these more intermittent updates, WebCenter provides a set of deploy and configure scripts that you can copy and modify to suit your environment. The deploy and configure scripts isolate the information that is variable between environments, like the server names, ports, content management connections, and so on. For more information, see Section 8.5.1, "Provisioning the Staging Environment" and Section 8.12, "Deploying and Configuring the Application on Targeted Servers."

For information on integrating and configuring Oracle WebCenter Portal Personalization, see the section "Personalization Prerequisites and Limitations" in the *Administering Oracle WebCenter Portal*.

8.2.6 Production Environment Tasks

When changes are tested and approved in the stage environment, they need to be pushed to the production environment. WebCenter provides a Propagation tool in the WebCenter Portal Administration Console that moves all portal metadata from the staging to the production server. For more information, see Section 8.13, "Using the Propagation Tool to Propagate From Staging to Production."

WebCenter provides WLST commands for importing and exporting portlet preferences. For more information, see Section 8.16, "Migrating Portlet Preferences."

8.3 Who Participates in the Portal Life Cycle?

Many different people participate in the portal life cycle. In general, these people (the primary actors in Table 8–1) fall into one or more of these general roles:

- **Developer** – Uses JDeveloper and the build scripts described in Section 8.8, "Configuring a Nightly Build Script."
- **IT Administrator** – Uses the deploy and configuration scripts described in Section 8.12, "Deploying and Configuring the Application on Targeted Servers."
- **Site managers** – Have administrative privileges for the Portal Framework application. Site managers use the WebCenter Portal Administration Console to modify the layout, content, and security settings of the portal. See also *Administering Oracle WebCenter Portal* and Section 8.15, "Managing Security Through the Life Cycle."
- **Content modelers** – Uses Oracle WebCenter Content's Site Studio designer to model content. Refer to Site Studio and Oracle WebCenter Content documentation for more information.
- **Content contributors** – Develops whatever content appears in or is available from the portal, including images, document files, video and audio content, and so on.

8.4 Understanding the Build and Test Environments

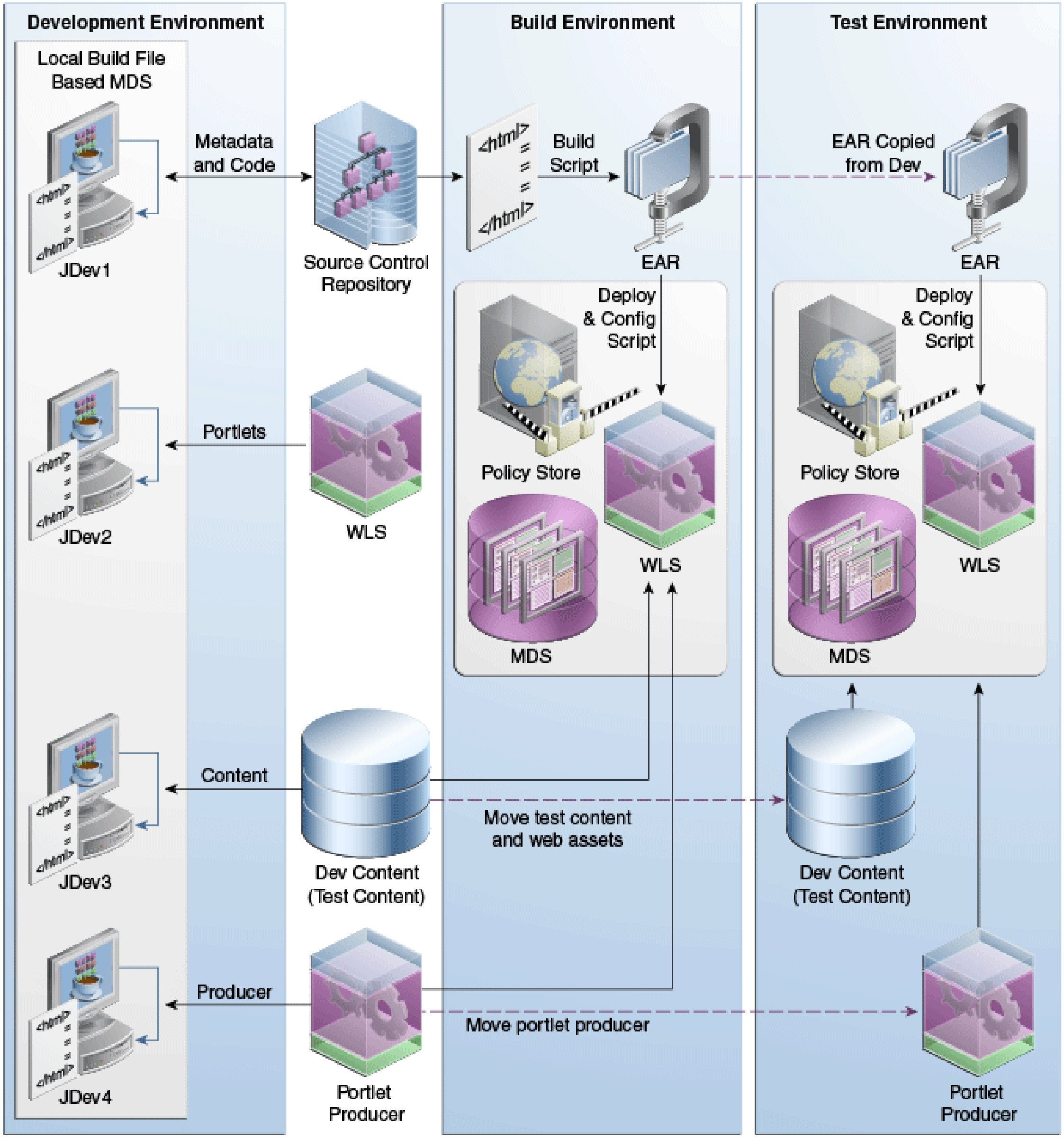
Although developers typically build and run locally, an automated nightly build environment is recommended. The build environment represents a clean deployment of the Portal Framework application.

To set up the build environment, back end servers and connections must be installed and created once. For example, the build environment requires WebLogic Server instance, and typically includes access to an installed Oracle WebCenter Content instance. In addition, the build environment includes a database-based MDS and policy store.

Figure 8–1 illustrates the general flow from development to build to test environments.

Note: Figure 8–1 does not depict all possible portal features. For example, Oracle WebCenter Portal Personalization is not depicted in the diagram. For more information, see Section 66.3, "Deploying Personalization Files."

Figure 8–1 Flow from Development to Build to Test Environments



A common practice is to use Ant-based build scripts to construct the EAR from source control and deploy it. The EAR includes metadata, code, and seeded policies. The build script also packages into the EAR metadata customizations made to portlets. See Section 8.8, "Configuring a Nightly Build Script." Some tasks performed by the build scripts include:

- creating schema (with RCU)
- setting up the managed server and domain
- building and deploying the EAR
- performing other setup tasks

The best practice is to use Oracle WebCenter Content archive tools to move Oracle WebCenter Content test content and web assets between the environments. See Section 8.14, "Propagating Content From Oracle WebCenter Content." For information on deploying portlets, see Chapter 61, "Deploying Portlet Producers."

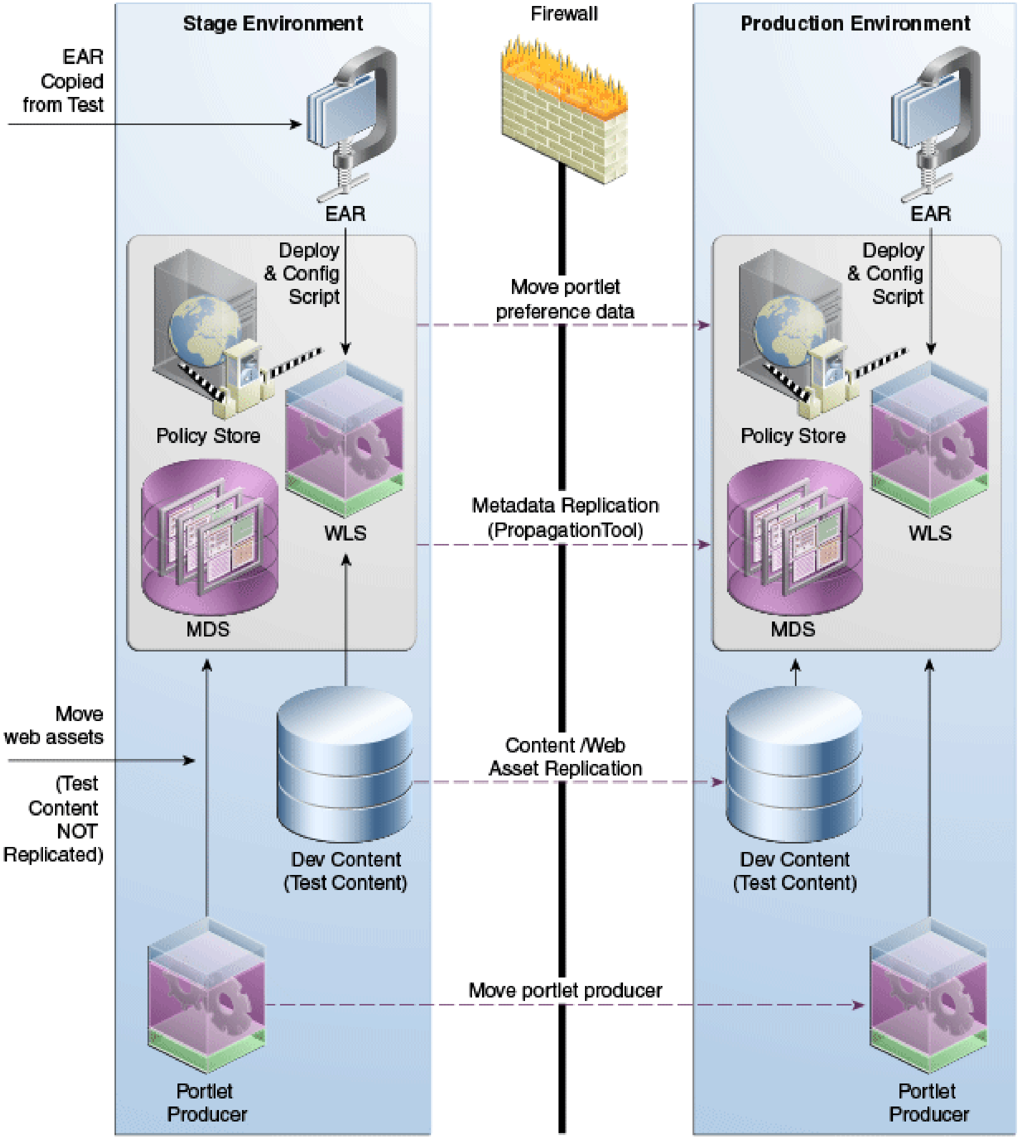
For information on integrating Oracle WebCenter Portal Personalization into your development environment, see Section 66.2, "Integrating Personalization in Your Application."

8.5 Understanding the Staging and Production Environments

This section discusses the staging and production phases of the portal life cycle. Figure 8–2 illustrates the general flow from staging to production environments.

Note: Figure 8–2 does not depict all possible portal features. For example, Oracle WebCenter Portal Personalization is not depicted in the diagram. For more information, see Section 66.3, "Deploying Personalization Files."

Figure 8–2 Flow from Staging to Production Environments



8.5.1 Provisioning the Staging Environment

The staging environment provides a stable environment where final configuration and testing takes place before the portal is moved to production. Typically, the staging environment includes a dedicated Oracle WebCenter Content server, as well as dedicated portlet producer server(s). For a list of typical setup tasks, see Table 8–2.

If you are setting up the staging environment for the first time, see Section 8.9, "Setting Up a Staging or Production Environment for the First Time." For information on making incremental changes to the staging environment, see Section 8.12, "Deploying and Configuring the Application on Targeted Servers."

If you wish, you can move Oracle WebCenter Content content and web assets between the testing and staging environment using Oracle WebCenter Content archive tools. See Section 8.14, "Propagating Content From Oracle WebCenter Content." For information on migrating portlets, see Section 8.16, "Migrating Portlet Preferences."

For a complete list of requirements, dependencies, and options for WebCenter Personalization, see the section "Personalization Prerequisites and Limitations" in the *Administering Oracle WebCenter Portal*.

8.5.2 Adding Content to the Staging Environment

Content developers can add content directly to the staging server using Oracle WebCenter Content content contribution tools. Content workflow features of Oracle WebCenter Content can be used to manage content approvals. WebCenter also provides browser-based tools for creating and editing content. For example, you can:

- Edit existing Oracle WebCenter Content region data files
- Create new Oracle WebCenter Content region data files
- Edit existing HTML content
- Upload new images

8.5.3 Moving the Portal from Staging to Production

Once the staging environment is fully provisioned and tested, it can be moved to the production environment and made accessible to users. In a live production environment, you can make incremental updates to metadata, content, and web assets using automated scripts and/or replication techniques.

Typically, these updates are performed by a site manager rather than by individual content contributors. For more information, see Section 8.13, "Using the Propagation Tool to Propagate From Staging to Production."

Any content model or region definition changes can be pushed to the production server by the site manager. Oracle WebCenter Content Replication can be used to replicate content between the stage and production server. See Section 8.14, "Propagating Content From Oracle WebCenter Content."

WebCenter provides WLST commands for importing and exporting portlet preferences. For more information, see Section 8.16, "Migrating Portlet Preferences."

8.6 Tools for Managing the Life Cycle

WebCenter Portal is built on top of JDeveloper and Oracle ADF, which provide several benefits in the life cycle management of your application:

- **Development framework** – JDeveloper and Oracle ADF provide the tools and framework you can use to build and update your application. Adding portlets, content, and customization capabilities to your Portal Framework application is simply a matter of dragging and dropping the appropriate objects in either a source or WYSIWYG environment.
- **Iterative Development** – WebCenter provides an iterative development feature that greatly increases team productivity. See Section 2.3.1, "Preparing for Iterative Development in a Portal Framework Application."
- **Round-Trip Development:** Round-trip development refers to features and techniques that allow you to retrieve resources from a deployed, runtime portal back to JDeveloper for maintenance or enhancement. For more information on round-trip development, see Section 9.6, "Working with Round-Trip Development."
- **Enterprise deployment:** When you are ready to deploy your application to a production environment, you can use the deployment scripts provided by WebCenter. For more information, see Section 8.12, "Deploying and Configuring the Application on Targeted Servers" and Section 8.13, "Using the Propagation Tool to Propagate From Staging to Production." For more information about deployment, see Chapter 7, "Deploying and Testing Your Portal Framework Application."

  > **Note:** Services for WebCenter Portal typically require some back end, such as Oracle WebCenter Portal's Discussions Server, to be available in the deployment environment.

- **Standards-based administration:** Browser-based tools enable administrators to deploy, configure, and manage Portal Framework applications and WebCenter Portal tools and services. In addition, tools built on industry standards-based JMX methods offer administrators granular control and monitoring mechanisms for health status, performance, and popularity. Tools for obtaining historical performance and status reporting over time (within a single Oracle Application Server context) are also provided. Portal Framework application metrics are delivered using the familiar Application Server Control monitoring and management interface. For more information, see *Administering Oracle WebCenter Portal*.

8.7 Understanding Iterative Development

- Section 8.7.1, "What Is Iterative Development?"
- Section 8.7.2, "How Does Iterative Development Work?"
- Section 8.7.3, "Enabling Iterative Development"

8.7.1 What Is Iterative Development?

Iterative development lets you make changes to your Portal Framework application while it is running on the Integrated WebLogic Server and immediately see the effect of those changes simply by refreshing the current page in your browser. The iterative development feature works by disabling certain optimization features. Iterative development allows developers to work more quickly and efficiently when building a portal.

For example, iterative development lets you see changes to these components almost instantly upon a browser refresh:

- page definitions
- navigation model
- page hierarchy
- existing JSPX files
- page templates
- resource catalog
- addition of task flows to pages
- addition of portlets to pages

The following kinds of operations are not supported by iterative development. These operations require you to re-run the application:

- Creating any *new* file explicitly (JSPX, page definition, and so on)
- Editing any configuration file, like `web.xml` or `adfc-config.xml`.
- Creating a new file implicitly. For instance, when you add a sub-page to a node in the page hierarchy, a new `*pages.xml` file is created.

8.7.2 How Does Iterative Development Work?

Iterative development works by turning off certain MDS and runtime layer caches. Because these performance optimization features are disabled, you might notice some slower performance when running your application in a development environment.

> **Note:** When an application is deployed to the Integrated WebLogic Server, the `org.apache.myfaces.trinidad.CHECK_FILE_MODIFICATION` flag is automatically set to `true` in the `web.xml` file on the server. This setting causes the server to automatically check the modification time of your JSP and skinning CSS files, and discard saved state when they change. This configuration occurs whether or not the iterative development feature is enabled.

When iterative development is enabled, the following changes to application configuration occur:

- The MDS Cache size is set to `0`. This setting causes all metadata files to be re-loaded on each request.
- The Navigation Model cache is invalidated on each request.

For skin development, you can set the application to use uncompressed skins. This setting is not the default and should only be used in a development environment. You can update `web.xml` to enable this functionality with the following context parameter:

```
<context-param>
    <param-name>org.apache.myfaces.trinidad.DISABLE_CONTENT_COMPRESSION</param-name>
    <param-value>true</param-value>
</context-param>
```

Note: When consuming Oracle JSF Portlet Bridge Portlets in your portal, ADF attempts to share the skin between the consumer and producer. Therefore, if you are disabling compression on the consumer, you should also do that on the producer. Otherwise, the producer will not generate the correct code to match the uncompressed IDs generated by the consumer. See also Chapter 58, "Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge."

Note that if you edit the base definition (source) of a resource at runtime while the portal is running in the Integrated WebLogic Server, iterative development will not work as expected: if you edit the resource file in JDeveloper and save, you will not see the change when the running page is refreshed. The reason is because when a resource is edited at runtime at the base document level in the Integrated WebLogic Server, a *copy* of the resource's base document is created in the MDS write directory. From that point forward, this copied version will be used, and the version of the base document in JDeveloper will be ignored. If you run into this issue and want to pick up changes made to the file in JDeveloper, you will need to re-run the application after taking the following steps:

1. In the Application Navigator, click the **Application Menu** icon next to your application's name and choose **Application Properties**.
2. In the Application Properties dialog, expand the **Run** node in the left pane, then select **MDS**.
3. In the right pane, select **Delete customizations before each run**. Doing so clears the MDS of any runtime customizations every time the application is run.
4. Click **OK**.

8.7.3 Enabling Iterative Development

For details, see Section 2.3.1.1, "Enabling Iterative Development."

8.8 Configuring a Nightly Build Script

When you create a Portal Framework application, an Ant build script and properties file are created automatically for you in the main application directory on the filesystem. These files are:

- `build.xml`– Includes a standard set of targets for cleaning, compiling, building, and deploying the application. You can check this file into source control so that it is available to the developers.
- `build.properties` – Specifies the location of the JDeveloper workspace file (`.jws` file) for your application and the output folder for the application WAR file. Note that the `build.xml` file includes the `build.properties` file, which enables `build.xml` to pick up these environment-specific variables. You can customize the properties file to match the setup and environment variables used in your build environment.

Before running the build script, be sure `JAVA_HOME` and `ANT_HOME` environment variables are set properly. For example:

```
JAVA_HOME = /path_to_your_java_installation/jdk
ANT_HOME = /path_to_your_ant_installation
```

To build and deploy your application, use the ant target `all`. For example:

```
ant all
```

If you are using Oracle WebCenter Portal Personalization to provide personalization features for your portal, you must perform a manual update to the `build.xml` file. For details, see Section 66.3, "Deploying Personalization Files."

8.9 Setting Up a Staging or Production Environment for the First Time

For detailed information on setting up and provisioning a staging or production environment for the first time, see the section "Moving Oracle WebCenter Portal to a New Target Environment," in the *Administrator's Guide*. See also Section 8.15, "Managing Security Through the Life Cycle" for information on moving security policies and credentials to an environment for the first time.

8.10 Moving a WebCenter Portal Framework Application to an Existing Environment

In this scenario, you have a working production environment with Oracle WebCenter Portal installed and configured and you want to test changes in your applications or configuration before rolling those changes into the production environment. For example, you have modified existing security policies or configurations.

Oracle recommends that you use the deploy and configure scripts to update existing environment. Sample scripts are provided with WebCenter, and you are free to modify them to suit your environment. For detailed information, see Section 8.12, "Deploying and Configuring the Application on Targeted Servers" and Section 66.3, "Deploying Personalization Files."

WebCenter provides a Propagation tool that is built in to the WebCenter Portal Administration Console. The Propagation tool is for moving your application from the staging environment to the production environment. See Section 8.13, "Using the Propagation Tool to Propagate From Staging to Production."

For information on moving Oracle WebCenter Content content, see Section 8.14, "Propagating Content From Oracle WebCenter Content."

For information on moving security policies and credentials, see Section 8.15, "Managing Security Through the Life Cycle."

For more information, see the section "Moving Oracle WebCenter Portal to an Existing Target Environment," in the *Administrator's Guide*.

8.11 Deploying to Managed Servers

Portal Framework application developers working in JDeveloper typically deploy their application locally to the Integrated WebLogic Server. For other phases of the life cycle – testing, staging, and production – deployment to a suitable managed server is recommended. Or, for portlet development, you need to deploy to the Services Producer Managed Server. For more information on deploying to managed servers, see Section 7.3, "Deploying a Portal Framework Application to a WebLogic Managed Server" and Section 66.3, "Deploying Personalization Files." See also the section "Creating a Managed Server" in *Administering Oracle WebCenter Portal*.

8.12 Deploying and Configuring the Application on Targeted Servers

During its life cycle, a typical portal is deployed to testing, staging, and production servers. This section describes a technique for deploying and configuring a Portal Framework application on a targeted server.

- Section 8.12.1, "Introduction"
- Section 8.12.2, "Using the Deploy and Configure Script"

8.12.1 Introduction

WebCenter provides a configurable script that allows you to easily deploy and configure your application to these server instances. The build and deploy script takes a simple properties file parameter that specifies the server and connection information for the targeted server. You only need to create this properties file one time for each targeted server. Then, you execute the deploy and configure script with the appropriate properties file as a parameter.

Oracle recommends that you use the scripts described in this section to deploy your application rather than using ojdeploy. The best practice is to use the Ant task provided by JDeveloper to build your application, and then to use the scripts described in this section to deploy and configure the application. The ojdeploy command-line utility allows you to deploy your application from JDeveloper without starting the JDeveloper IDE.

Note: The propagation tool, described in Section 8.13, "Using the Propagation Tool to Propagate From Staging to Production," is primarily used by site administrators to push approved site structure changes to production without incurring any downtime.

Tip: The build and deploy script isolates the information that is variable between environments, like the server names, ports, content management connections, database connections, and so on. Most aspects of the Portal Framework application do not need to change when you redeploy it to another server. For example, the name of the application doesn't change.

8.12.2 Using the Deploy and Configure Script

The deploy and configure script described in this section is primarily used when the production application is mostly read only and live. In this scenario, content contributors make active changes to the staged application and receive content approval before that content is moved to production. Oracle recommends that you use automatic content replication so that content is moved from stage to production after appropriate workflow approvals. See Section 8.14, "Propagating Content From Oracle WebCenter Content."

Security changes are not affected by the deploy and configure scripts. To push site structure changes to production, administrators can use the propagation tool, as described in Section 8.13, "Using the Propagation Tool to Propagate From Staging to Production." See also Section 8.15, "Managing Security Through the Life Cycle."

To deploy and configure your application to a target environment:

1. In a terminal window, go to the directory that contains the deploy and configure scripts. These scripts are called: `create_profile.csh` and `deploy_and_`

config.csh. These files reside in WEBCENTER_HOME/webcenter/scripts/stage2prod, where WEBCENTER_HOME is the directory where WebCenter is installed.

> **Note:** The deploy and configure scripts in stage2prod are samples only. You are free to develop your scripts in a different location (after copying the sample and making changes to it for your deployed environment).

2. First, you need to provide some target environment-specific information in the setup.properties file, like the target server URL, user name, and password. The setup.properties file is located in WEBCENTER_HOME/webcenter/scripts/stage2prod/setup. Simply open the file setup.properties and add the appropriate values for the target environment. A sample file is shown in Example 8–1.

> **Note:** For WebLogic Sever deployments, you can ignore properties listed under WebSphere Server properties. See also the section "Using the Deploy and Configure Script for Applications Deployed on WebSphere" in the *Third-Party Application Server Guide*.

Example 8–1 Sample setup.properties File

```
# Adminserver
admin.jmx.url=t3\://hostname\:7001
admin.user=weblogic
admin.password=welcome1

# Application
webcenter.app.name=webapp
webcenter.app.server=WC_CustomPortal
webcenter.app.version=V2.0
```

3. Update the create_profile.csh and deploy_and_config.csh to reflect the deployed environment.

   ```
   setenv WC_HOME <webcenter_home>
   setenv SCRIPTS_DIR <scripts_home>
   ```

   WC_HOME is the WebCenter Home and SCRIPTS_DIR is where the scripts are located. By default, the scripts are here: $WC_HOME/webcenter/scripts/stage2prod. If you copied the scripts to another location, then set SCRIPTS_DIR to that location.

4. Run the create_profile script. The input to this script is the setup.properites file. For example, in a Linux environment, enter:

   ```
   ./create_profile.csh
   ```

   This script examines your application environment and produces an output properties file called wcconfig.properties in WEBCENTER_HOME/webcenter/scripts/stage2prod/setup.

5. If you wish, rename the output file, wcconfig.properties, to a name that reflects the target environment. For example, if the target environment is your stage environment, you might call the file output file wstage.properties.

The wcconfig.properties file specifies all the configuration information needed to run the portal on the target environment. For example, it includes settings for content management repository, omni portlet, WSRP producers, Oracle WebCenter Portal Personalization and others. Example 8–2 shows a sample profile.properties file.

Example 8–2 Sample profile.properties File

```
webcenter.wcps.app.name=wcps-services
webcenter.wcps.app.server=WC_Utilities
admin.jmx.url=t3\://hostname\:7001
doclib.Content.cis.socket.host=hostname
app.mds.jndi=jdbc/mds/SpacesDS
webcenter.app.archive=/net/hostname/scratch/webapp.ear
doclib.Content.cis.socket.port=9444
webcenter.wcps.archive=/net/hostname/scratch/wcps.mar
webcenter.app.name=webapp
admin.user=weblogic
app.mds.repository=mds-SpacesDS
app.mds.partition=wcps-services
webcenter.app.version=V2.0
web.OmniPortlet.url=http\://hostname\:7101/portalTools/omniPortlet/providers/omniP
ortlet
app.restart=false
webcenter.app.server=WC_CustomPortal
```

Note: All properties in the profile.properties must have a value. If a property is not needed, delete it or comment it out rather than leave the value empty.

6. Run create_profile to create a properties file for each of your target environments. For example, you might create one each for your test, stage, and production environments.
7. Edit the deploy_and_config script to accept as input the wcconfig.properties file (or whatever you renamed it).
8. Run the deploy_and_confg script. The input to this script is the profile.properties file (or whatever you renamed the file). For example, in a Linux environment, might enter:

   ```
   ./deploy_and_config.csh
   ```

The deploy_and_config script takes one of two "modes" as input. These modes are deploy_config and p13n_metadata. For example:

```
./deploy_and_config.csh p13n_metadata
```

The deploy_config mode is the default mode if no input is passed to deploy_and_config.csh. The deploy_config mode does the deployment and configuration tasks. If you only need to update the personalization metadata, you can override the default behavior by passing in p13n_metadata as the input to the script.

This script deploys and configures the Portal Framework application to run on the target environment.

8.12.3 Managing Post-Deployment Changes

All WebCenter Portal configuration changes performed after the application is deployed are stored as customizations in MDS. For example, if your application had some connections defined in `connections.xml`, and you then deployed the application on another managed server, and performed configurations using Oracle Enterprise Manager Fusion Middleware Control Console or WLST, then these changes are stored in MDS as customizations. Subsequently, if you deploy a newer EAR file, the connection changes you performed earlier would still be in effect, and will override the connection definition within the EAR file. The configuration changes performed with the Fusion Middleware Control Console or WLST persist after a redeployment. See also the section "Oracle WebCenter Portal Administration Tools" in the *Administering Oracle WebCenter Portal*.

> **Note:** When you deploy a portlet producer, the customizations are uploaded to the currently configured producer connection. Oracle recommends that you use the deploy and configure scripts to manage the producer connections (rather than reconfiguring them after deployment and then redeploying the application). The deploy and configure scripts ensure that the producer customizations are redeployed correctly whenever the connection information changes.

8.13 Using the Propagation Tool to Propagate From Staging to Production

The WebCenter Portal Administration Console includes a propagation tool for moving portal metadata from a staging to a production server. Site administrators use this tool occasionally to push approved site structure changes to the production server without incurring any downtime.

> **Note:** The Propagation tool supports propagating portal metadata and Oracle WebCenter Portal Personalization files. For more information about propagating Personalization files, see Section 66.3.4, "Propagating Personalization Files."

> **Note:** WebCenter provides WLST commands for importing and exporting portlet preferences. Use these commands to replicate portlet preference data between the stage and production servers. For more information, see Section 8.16, "Migrating Portlet Preferences."

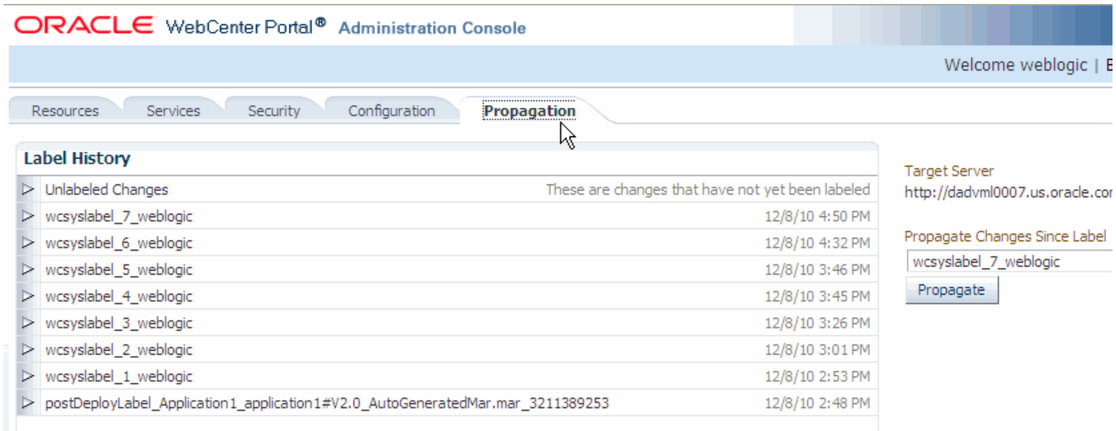
- Section 8.13.1, "Introduction to the Propagation Tool"
- Section 8.13.2, "Configuring the Propagation Tool"
- Section 8.13.3, "Propagating Portal Metadata"

8.13.1 Introduction to the Propagation Tool

WebCenter provides a propagation tool to move a portal metadata from staging to production. In practice, the staging environment and the production remain identical until changes are made to the staged portal. When the changes are tested and approved, an administrator uses the propagation tool to "push" the changes to the production server. This transfer does not require the production server to be restarted.

When properly configured, the Propagation tool shows up as a tab in the WebCenter Portal Administration Console, as shown in Figure 8–3.

Figure 8–3 The Propagation Tab



Label History

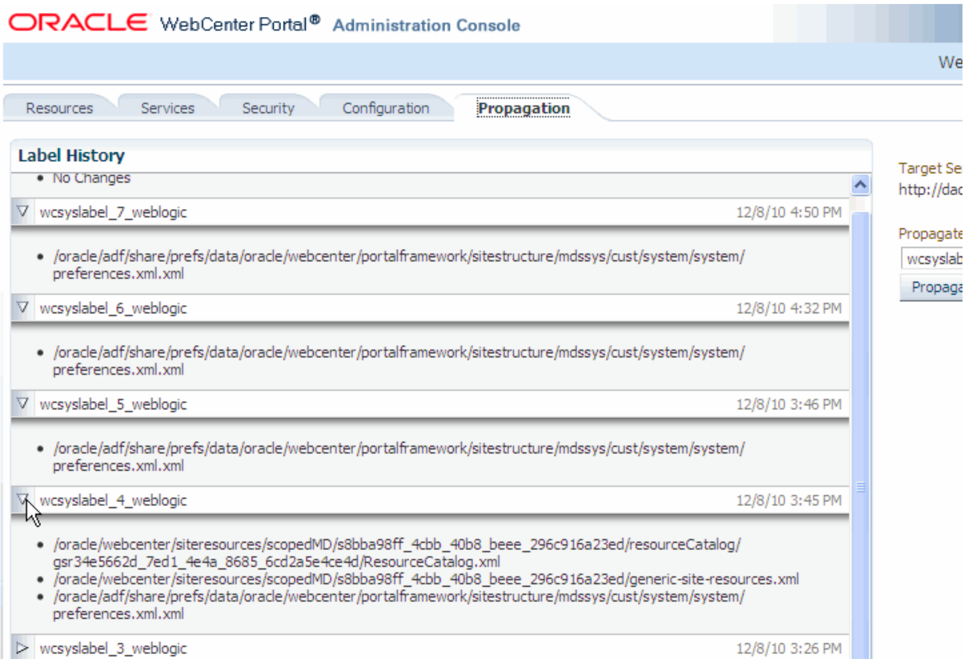
- ▷ Unlabeled Changes — These are changes that have not yet been labeled
- ▷ wcsyslabel_7_weblogic — 12/8/10 4:50 PM
- ▷ wcsyslabel_6_weblogic — 12/8/10 4:32 PM
- ▷ wcsyslabel_5_weblogic — 12/8/10 3:46 PM
- ▷ wcsyslabel_4_weblogic — 12/8/10 3:45 PM
- ▷ wcsyslabel_3_weblogic — 12/8/10 3:26 PM
- ▷ wcsyslabel_2_weblogic — 12/8/10 3:01 PM
- ▷ wcsyslabel_1_weblogic — 12/8/10 2:53 PM
- ▷ postDeployLabel_Application1_application1#V2.0_AutoGeneratedMar.mar_3211389253 — 12/8/10 2:48 PM

Target Server
http://dadvml0007.us.oracle.cor

Propagate Changes Since Label
wcsyslabel_7_weblogic

The Label History part of the Propagation tab lists the labels that were created for each propagation, labels created outside of the Propagation tab, such as labels created during deployment and labels created using WLST. Each label includes a list of files that change since the last propagation was performed. To view the contents of a label, click the arrow button to the left of the label name, as shown in Figure 8–4.

Figure 8–4 The Propagation Tab with Labels Opened



Label History

- No Changes

▽ wcsyslabel_7_weblogic — 12/8/10 4:50 PM

- /oracle/adf/share/prefs/data/oracle/webcenter/portalframework/sitestructure/mdssys/cust/system/system/preferences.xml.xml

▽ wcsyslabel_6_weblogic — 12/8/10 4:32 PM

- /oracle/adf/share/prefs/data/oracle/webcenter/portalframework/sitestructure/mdssys/cust/system/system/preferences.xml.xml

▽ wcsyslabel_5_weblogic — 12/8/10 3:46 PM

- /oracle/adf/share/prefs/data/oracle/webcenter/portalframework/sitestructure/mdssys/cust/system/system/preferences.xml.xml

▽ wcsyslabel_4_weblogic — 12/8/10 3:45 PM

- /oracle/webcenter/siteresources/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/resourceCatalog/gsr34e5662d_7ed1_4e4a_8685_6cd2a5e4ce4d/ResourceCatalog.xml
- /oracle/webcenter/siteresources/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/generic-site-resources.xml
- /oracle/adf/share/prefs/data/oracle/webcenter/portalframework/sitestructure/mdssys/cust/system/system/preferences.xml.xml

▷ wcsyslabel_3_weblogic — 12/8/10 3:26 PM

Target Se
http://dac

Propagate
wcsyslab

8.13.2 Configuring the Propagation Tool

> **Note:** If you are using the Propagation tool and if any of the MDS document file names contain multi-byte NLS characters, the stage machine should be configured for that NLS.

The Propagation tab only shows up in the WebCenter Portal Administration Console if the portal deployed to the staging server has a URL Connection configured. This URL connection must point to the production server and it must be named `ProductionURLConnection`.

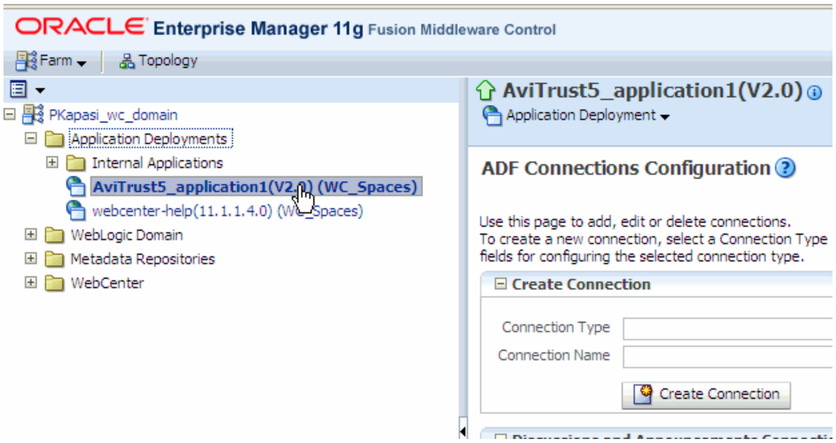
You have two choices for configuring the URL Connection: you can use the Fusion Middleware Control Console or Oracle WebLogic Scripting Tool (WLST). This section explains both techniques.

8.13.2.1 Configuring the URL Connection With Oracle Enterprise Manager Fusion Middleware Control Console

To configure the URL Connection with the Fusion Middleware Control Console:

1. In a browser, open the Fusion Middleware Control Console for your staging server domain. For details on starting the Fusion Middleware Control Console see *Oracle Enterprise Manager Administrator's Guide*.
2. In the navigation tree, open the Application Deployments folder and click on the application. See Figure 8–5.
3. In the application pane on the right, open the **Application Deployment** menu, then select **Configure ADF Connections** from the **ADF** submenu. The ADF Connections Configuration panel opens, as shown in Figure 8–5.

Figure 8–5 Selecting the Application in the Fusion Middleware Control Console

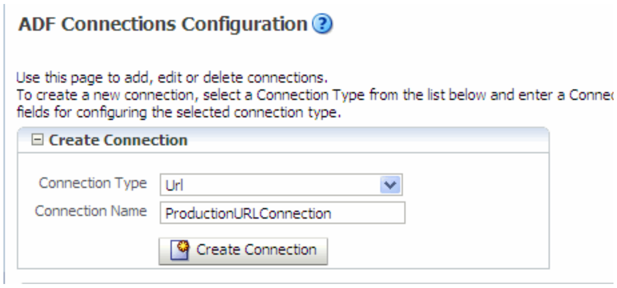


Use this page to add, edit or delete connections. To create a new connection, select a Connection Type fields for configuring the selected connection type.

4. In the Create Connection box, select the URL connection type and enter `ProductionURLConnection` as the Connection Name. See Figure 8–6.

> **Note:** You must name the connection `ProductionURLConnection`. The name is case sensitive.

Figure 8–6 Create Connection



ADF Connections Configuration

Use this page to add, edit or delete connections.
To create a new connection, select a Connection Type from the list below and enter a Connec
fields for configuring the selected connection type.

⊟ Create Connection

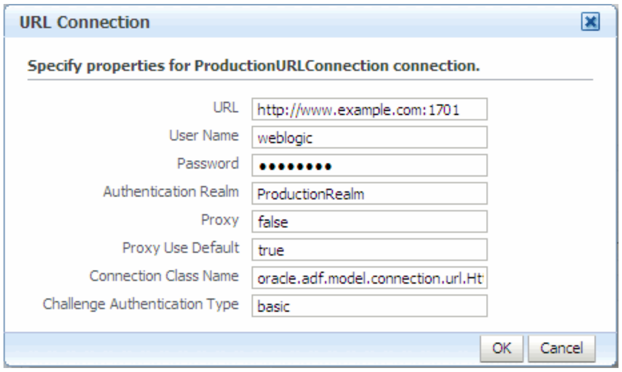
Connection Type: Url

Connection Name: ProductionURLConnection

5. In the URL Connections box, click **Edit**.
6. Complete the URL Connection dialog box as follows.
   - **URL** – Enter the URL (including hostname and port number) of the production server.
   - **Username** – Enter a username for the connection.
   - **Password** – Enter a password for the connection.
   - **Authentication Realm** – You must enter a value for the Authentication Realm. Do not leave this field blank. You can enter any arbitrary string, such as `ProductionRealm`.

     You can accept the default values for the remaining fields. See Figure 8–7.

Figure 8–7 URL Connection Dialog



URL Connection

Specify properties for ProductionURLConnection connection.

URL: http://www.example.com:1701

User Name: weblogic

Password: ••••••••

Authentication Realm: ProductionRealm

Proxy: false

Proxy Use Default: true

Connection Class Name: oracle.adf.model.connection.url.Ht

Challenge Authentication Type: basic

7. Click **OK** after you complete the URL Connection dialog.
8. Click **Apply** in the upper-right corner of the Fusion Middleware Control Console window.

8.13.2.2 Configuring the URL Connection with WLST

You can use a Oracle WebLogic Scripting Tool (WLST) command to create the URL Connection. Note that the parameters to the command are equivalent to the values entered in the URL Connection dialog in the Fusion Middleware Control Console, described in the previous section, Section 8.13.2.1, "Configuring the URL Connection With Oracle Enterprise Manager Fusion Middleware Control Console."

The following is an example of the WLST command with sample values specified for each parameter. Replace these values with values that pertain to your production server:

```
adf_createHttpURLConnection(appName='portalApp', name='ProductionURLConnection',
url='http://production_adminserver_host:7001', user='weblogic',
password='password_for_weblogic', realm='ProductionRealm'
```

For information on WLST, see the *WebLogic Scripting Tool Command Reference* on the Oracle Technology Network.

8.13.3 Propagating Portal Metadata

Use the propagation tool when you want to move changes made on the staging portal to the production portal.

1. Be sure the propagation tool is configured, as described in Section 8.13.2, "Configuring the Propagation Tool." To use the propagation tool, you must have Administrator's privileges.
2. Open the WebCenter Portal Administration Console. By default, the administration console is located at this URL:

   `http://<server>:<port>/<context_root>/admin`

For more information on using the WebCenter Portal Administration Console, see the section "Administering Portal Framework Applications Using the Administration Console" in the *Administering Oracle WebCenter Portal*.

3. Select the Propagation tab.

   > **Note:** If you don't see the Propagation tab it could be because you don't have administrator's privileges or the propagation tool was not configured properly as explained in Section 8.13.2, "Configuring the Propagation Tool."

4. Click **Propagate** to transfer the files to the production server.

8.14 Propagating Content From Oracle WebCenter Content

Oracle recommends that you use either manual or automated replication to move content from one environment to another. Another option is to manually propagate content; however, this option is only recommended if the source and target servers are unable to communicate with each other.

For detailed information on the tools and options for propagating Oracle WebCenter Content content, see the chapter "Understanding System Migration and Archiving" in the *Oracle WebCenter Content System Administrator's Guide for Content Server*. That chapter explains how to propagate Oracle WebCenter Content content by exporting and importing archive files. In addition, the chapter explains how to set up and use replication. Replication can automate the export, import, and transfer functions. For example, you can use replication to automatically export from one content server instance, transfer the archive to another computer, and import to another content server instance.

8.15 Managing Security Through the Life Cycle

This section discusses techniques for migrating security policies and credentials from one environment to another. Migration can be either automatic or manual. Automatic migration is typically used when the application is first deployed. Manual migration is used on redeployment.

8.15.1 Migrating Security Policies for First-Time Deployment

When jazn-data.xml with application policies is packaged in the EAR file, Oracle Platform Security Services (OPSS) performs policy migration based on the application configuration settings in weblogic-application.xml. Example 8–3 shows the recommended settings in weblogic-application.xml to achieve automatic policy migration for first-time deployment.

Example 8–3 Settings for Automatic Policy Migration (weblogic-application.xml)

```
<wls:application-param>
    <wls:param-name>jps.policystore.migration</wls:param-name>
    <wls:param-value>MERGE</wls:param-value>
</wls:application-param>

<wls:application-param>
    <wls:param-name>jps.policystore.removal</wls:param-name>
    <wls:param-value>OFF</wls:param-value>
</wls:application-param>

<wls:listener>

<wls:listener-class>oracle.security.jps.wls.listeners.JpsApplicationLifecycleListe
ner</wls:listener-class>
</wls:listener>
```

JpsApplicationLifecycleListener must be specified in weblogic-application.xml to enable policy and credential migration. Oracle recommends that jps.policystore.migration should be set to MERGE. With this configuration, polices packaged in jazn-data.xml will be always migrated during first time deployment. Oracle also recommends that jps.policystore.removal should be set to OFF so that application policies are not deleted from the policy store when the application is undeployed.

8.15.2 Migrating Security Policies On Redeployment

On redeployment, it is important to avoid overwriting policy changes made on the production system. When jps.policystore.migration parameter is set to MERGE, all new policies from the stage environment will be merged with production policies. With this setting, any changes made to existing policies, such as changing permissions for a role, deleting a role, or removing membership of a role, will not be migrated during redeployment, because such migration would cause a conflict.

If you want to overwrite the production policies with the staging environment security policies packaged in jazn-data.xml, use the migrateSecurityStore WLST command. See *Oracle Fusion Middleware Application Security Guide* for details on migrateSecurityStore command.

8.15.3 Migrating Credentials for First-Time Deployment

Application credential migration support is similar to application policy migration. JpsApplicationLifecycleListener supports credential migration in application deployment and redeployment with extra security enforcements.

With application credentials in cwallet.sso and packaged in an EAR file in the META-INF/ directory, OPSS will perform credential migration to system credential store based on the configuration settings in weblogic-application.xml.

Example 8–3 shows the recommended settings in weblogic-application.xml to achieve automatic credential migration for first-time deployment.

Example 8–4 Settings for Automatic Credential Migration (weblogic-application.xml)

```
<wls:application-param>
    <wls:param-name>jps.credstore.migration</wls:param-name>
    <wls:param-value> MERGE </wls:param-value>
</wls:application-param>
```

Oracle recommends that jps.credstore.migration should be set to MERGE so that at deployment and redeployment time all new credentials will be migrated. This setting will only migrate new credential key/value from cwallet.sso. Modification done to existing credential keys will not be migrated.

8.15.4 Migrating Credentials On Redeployment

If credentials are modified on stage and need to be moved to production, use the command migrateSecurityStore to migrate modified credentials. See *Oracle Fusion Middleware Application Security Guide* for details on migrateSecurityStore command.

8.16 Migrating Portlet Preferences

WebCenter provides WLST commands for importing and exporting portlet preferences. Exported preferences (customizations and personalizations) can be imported into a target application – for example, exported from the staging application and imported into the production application. For more information, see exportPortletClientMetadata and importPortletClientMetadata in "WebCenter Portal Custom WLST Commands" in the *WebLogic Scripting Tool Command Reference*. Also ensure that export and import are enabled. See Section 59.3.15, "How to Export and Import Portlet Producers at Design Time."

See also Section 61.5, "Deploying a Portlet Producer to a WebLogic Managed Server."

8.17 Rolling Back Production Site Changes

In rare instances, it might be necessary to roll back changes that are pushed to the production server from staging. The propagation model described in this chapter assumes that you are making a small number of changes to the staging instance and then pushing them to production using the propagation tool. If you ever need to roll back those changes, Oracle recommends that you manually undo the changes on the staging instance and push the modified staging instance back to production, after adequate validation and testing. By this process, you will have "rolled back" the original changes and the production system will be reverted to its original state.

9 Introduction to Portal Resource Management

This chapter describes the different portal resources available for you to use in your WebCenter Portal Framework applications, and some of the common operations you can perform on them. Portal resources include navigation models, page templates, page styles, resource catalogs, and so on.

This chapter includes the following topics:

- Section 9.1, "Introduction to Portal Resources"
- Section 9.2, "Creating Portal Resources"
- Section 9.3, "Editing Portal Resources"
- Section 9.4, "Deleting Portal Resources"
- Section 9.5, "Working with Portal Resources at Runtime"
- Section 9.6, "Working with Round-Trip Development"
- Section 9.7, "Working with WebCenter Portal Resources"

> **Tip:** Portal resources are also sometimes referred to as assets.

9.1 Introduction to Portal Resources

Portal Framework applications provide the following portal resources to help you define the structure, look and feel, and content of your portal:

- **Page Templates** define the interface that surrounds page content and help to apply a consistent look and feel across groups of pages. For more information, see Chapter 11, "Developing Page Templates."
- **Navigation Models** define how to link together information from multiple sources, such as pages, content repositories, and external web pages. For more information, see Chapter 10, "Developing a Navigation Model."
- **Resource Catalogs** define the components that users can add to their pages, page templates, and task flows. For more information, see Chapter 14, "Developing Resource Catalogs."
- **Skins** define the appearance and look and feel, including colors and fonts, of a specific portal or the entire application. For more information, see Chapter 13, "Developing Skins."
- **Page Styles** define the layout of a newly created page, and may also dictate the type of content the page supports. For more information, see Section 12.2, "Developing Page Styles."

- **Content Presenter Display Templates** define templates for displaying content. For more information, see Chapter 27, "Creating Content Presenter Display Templates."
- **Task Flow Styles** are used at runtime to define the layout of task flows created using Data Presenter to display data controls. For more information, see Section 12.3, "Developing Task Flow Styles."

9.2 Creating Portal Resources

The process for creating a portal resource depends on the type of portal resource.

Table 9–1 shows where to find further information about creating the different portal resources.

Table 9–1 Creating Portal Resources

Portal Resource	More Information
Page Template	Section 11.3, "Creating a Page Template"
Navigation Model	Section 10.2, "Creating a Navigation Model"
Resource Catalog	Section 14.2, "Creating a Resource Catalog"
Skin	Section 13.3, "Creating a Skin"
Page Style	Section 12.2.1, "How to Create a Page Style"
Content Presenter Display Template	Section 27.3, "Creating Content Presenter Display Templates"
Task Flow Style	Section 12.3.1, "How to Create a Task Flow Style"

9.3 Editing Portal Resources

The process for editing a portal resource depends on the type of portal resource.

Table 9–2 shows where to find further information about editing the different portal resources.

Table 9–2 Editing Portal Resources

Portal Resource	More Information
Page Template	Section 11.4, "Editing a Page Template"
Navigation Model	Section 10.3, "Editing a Navigation Model"
Resource Catalog	Section 14.3, "Editing a Resource Catalog"
Skin	Section 13.4, "Editing a Skin"
Page Style	Section 12.2.1, "How to Create a Page Style"
Content Presenter Display Template	Section 27.3, "Creating Content Presenter Display Templates"
Task Flow Style	Section 12.3.1, "How to Create a Task Flow Style"

9.4 Deleting Portal Resources

When a portal resource is no longer required, you may want to remove it.

Note: Before you delete a portal resource, you must ensure that the resource is not in use. If you mark a portal resource for deletion, it is deleted even if it is in use.

To delete a portal resource:

1. In the Application Navigator, right-click the portal resource that you want to delete and choose **Delete**.
2. The Confirm Delete dialog identifies if the portal resource is used within the application. Click **Show Usages** for more details.

   You can use this information to determine whether you really want to delete the portal resource.
3. Click **Yes** to continue and delete the navigation model. Click **No** to cancel the operation.

9.5 Working with Portal Resources at Runtime

Tip: At runtime, portal resources are referred to as assets.

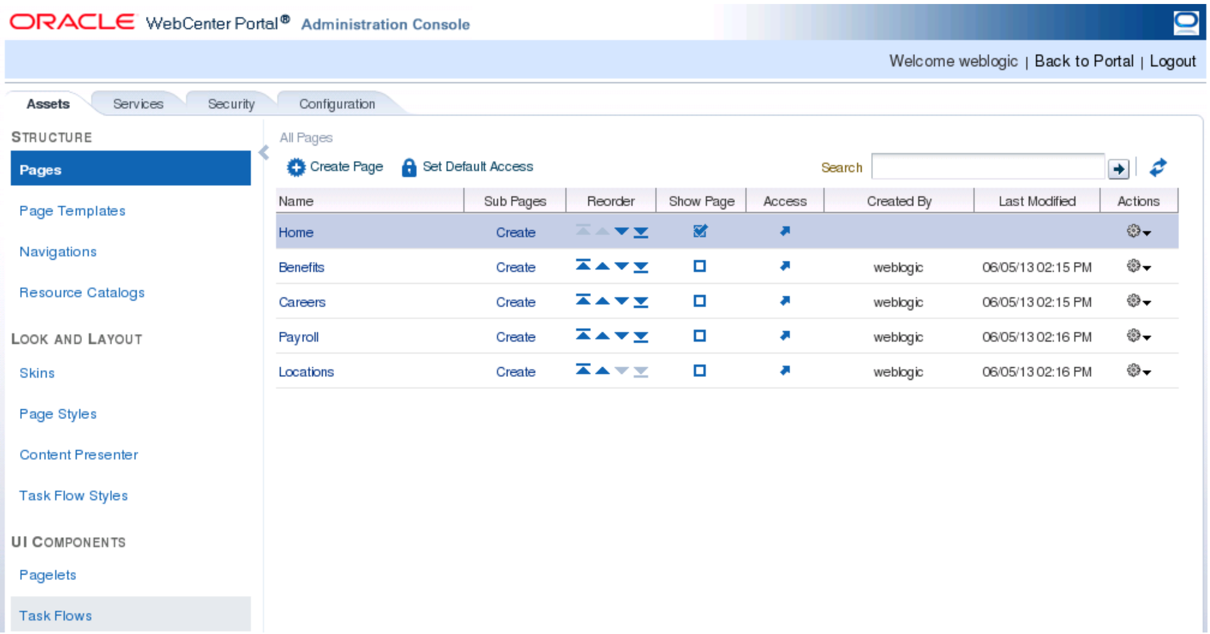
A portal is a constantly evolving application. While the initial framework for the portal is designed prior to deployment, this really acts as a starting point. The design of the portal is likely to be enhanced by the actual users of the portal.

This runtime resource management provides:

- **Runtime development**—Continue developing your portal after deployment by creating portal resources, such as pages, skins, and data controls at runtime. For more information, see Section 9.5.1.5, "How to Use the Assets Page at Runtime."
- **Round-trip development**—Pull portal resources from the deployed portal into JDeveloper for further development and then upload the enhanced resources back into the running application. For more information, see Section 9.6, "Working with Round-Trip Development."
- **Iterative development—**Supply a running portal with new or improved visualizations of metadata-only resources from JDeveloper without the need to redeploy or restart the application. For more information, see Section 2.3.1, "Preparing for Iterative Development in a Portal Framework Application."
- **Extension of WebCenter Portal**—Build and manage new WebCenter Portal resources in JDeveloper and package them on a periodic basis for distribution to the runtime portal. For more information, see Section 55.1, "Developing Assets for WebCenter Portal."

Portal Framework applications enable runtime portal resource management through the Assets page of the runtime administration console. Using the administration console, users with the appropriate privileges can continue developing the portal after the application has been deployed (Figure 9–1).

Figure 9–1 The Assets Page of the Runtime Administration Console



Name	Sub Pages	Reorder	Show Page	Access	Created By	Last Modified	Actions
Home	Create		☑				
Benefits	Create		□		weblogic	06/05/13 02:15 PM	
Careers	Create		□		weblogic	06/05/13 02:15 PM	
Payroll	Create		□		weblogic	06/05/13 02:16 PM	
Locations	Create		□		weblogic	06/05/13 02:16 PM	

At runtime, users with the appropriate privileges can create and manage the following resources:

- Pages
- Page templates
- Navigation models
- Resource catalogs
- Skins
- Page styles (can be created at runtime only by copying an existing page style)
- Content Presenter display templates (cannot be created at runtime)
- Task flow styles (can be created at runtime only by copying an existing task flow style)
- Task flows
- Data controls

Using the Assets page of the runtime administration console, users can also download portal resources, or an entire application, from the runtime environment, edit them in JDeveloper, and then upload them back into the deployed application.

Users can also create portal resources from scratch in JDeveloper, export them to an archive file, and then upload them into the deployed portal. This is a very useful way of creating more fully functional portal resources for use in WebCenter Portal.

This process is known as round-trip development. For more information, see Section 9.6, "Working with Round-Trip Development."

9.5.1 Enabling Runtime Administration of Portal Resources

You can enable portal administrators to manage portal resources at runtime by exposing them on the Assets page of your application.

If you use the WebCenter Portal Framework Application template to create your application, the Assets page is automatically provided as part of the runtime administration console.

If you prefer, you can add the Assets page to any other page in your application by adding the List of Resource Types task flow to that page.

For a portal resource to be exposed on the Assets page, and therefore available for runtime administration, it must be located under the `oracle/webcenter/portalapp` directory of the application project and explicitly identified as a portal resource.

This section includes the following topics:

- Section 9.5.1.1, "How to Add the Assets Page to a Page"
- Section 9.5.1.2, "How to Include a Portal Resource on the Assets Page"
- Section 9.5.1.3, "How to Update Portal Resource Properties"
- Section 9.5.1.4, "How to Remove a Portal Resource from the Assets Page"
- Section 9.5.1.5, "How to Use the Assets Page at Runtime"

9.5.1.1 How to Add the Assets Page to a Page

For applications created using the WebCenter Portal Framework Application template, the Assets page is available out of the box as part of the runtime administration console (Figure 9–1).

In addition, you can add the Assets page to any page in your application. This is especially useful if you do not want to use the WebCenter Portal Framework Application template, and the runtime administration console is therefore not part of your project.

When you add the Assets page to a page, anyone with view access to the page can view the Assets page and perform view related operations on portal resources, such as viewing resource properties, previewing resources, and so on. For users to be able to perform other operations on portal resources, such as creating new resources, editing resources, or deleting resources, they must have the appropriate permissions on the type of portal resource with which they want to work. These permissions can be provisioned using the Role Manager task flow. For more information, see Section 74.4, "Using the Role Manager Task Flow."

> **Tip:** By default, the `Administrator` role has manage access on all portal resource types available on the Assets page.

To add the Assets page:

1. Open the page to which you want to add the Assets page.
2. In the Resource Palette, expand the **WebCenter Portal - Services Catalog** and then **Task Flows**.
3. Select the **List of Asset Types** task flow and drag it to the desired location on the page.
4. From the menu that displays, select **Region**.

   You may be prompted to add the Assets page library to the project. Confirm by clicking **Add Library**.
5. The Assets page is added to the page.

6. To enable users to upload and download portal resources at runtime, the `usesUpload` property for the form that contains the Assets page task flow must be set to true:

```
<af:form id="f1" usesUpload="true">
```

9.5.1.2 How to Include a Portal Resource on the Assets Page

To include a portal resource on the Assets page, and therefore enable runtime administration of it, you must explicitly identify the resource as a portal resource.

For navigation models and resource catalogs, you have the option of identifying the resource as a portal resource when you first create it by selecting the **Create as Portal Resource** check box. For other resources, for example, page templates and skins, you must identify the resource as a portal resource after you create it.

To include a portal resource on the Assets page:

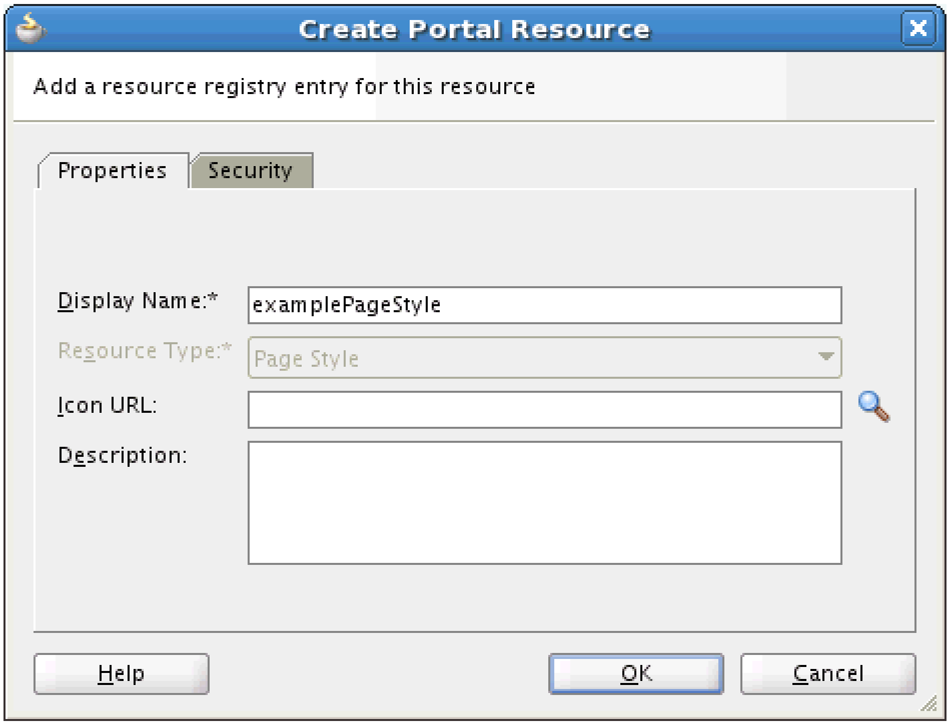
1. In the Application Navigator, right-click the portal resource that you want to include on the Assets page and choose **Create Portal Resource**.

> **Note:** If you do not see the **Create Portal Resource** option in the context menu, the resource is not under the `oracle/webcenter/portalapp` directory. To move the resource to the correct directory, right-click it, choose **Refactor**, and then **Move**.

2. In the Create Portal Resource dialog (Figure 9–2), in the **Display Name** field, edit the name if required.

   This is the name that is listed on the Assets page at runtime, so make sure that users are able to easily identify the resource from the display name.

Figure 9–2 The Create Portal Resource Dialog



Display Name:* examplePageStyle

Resource Type:* Page Style

Icon URL:

Description:

3. The **Resource Type** field identifies the kind of resource you are including on the Assets page. You cannot edit this field.

4. In the **Icon URL** field, enter the path and file name of an image to use as a graphical representation of the portal resource.

   This image is used for page styles only to specify the icon to display in the Create Page dialog.

5. In the **Description** field, enter a description for the portal resource. This description should help users determine if they want to use the resource in their application.

   The description is displayed below the portal resource's name on the Assets page.

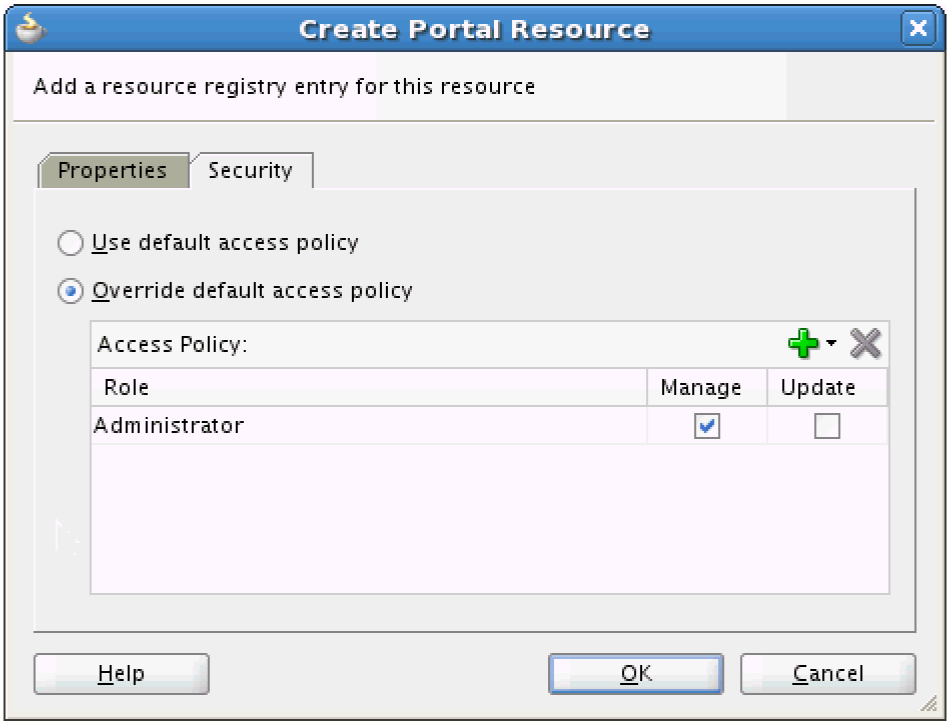
6. Provide values for any additional attributes supported by the portal resource.

7. If you want to specify resource-level security for the portal resource, click the **Security** tab. Otherwise, skip to step 11.

   Resource-level security enables you to override the application-level security for individual portal resources to specify who can edit and delete the resource at runtime.

8. Select **Override default access policy** (Figure 9–3).

Figure 9–3 Create Portal Resource - Security Tab



Add a resource registry entry for this resource

○ Use default access policy

● Override default access policy

Access Policy:

Role	Manage	Update
Administrator	☑	□

9. Click the **Add permissions to new role** icon (represented by a plus sign) and select the role for which you want to grant permissions.

10. Select the **Manage** check box to grant full access to the portal resource at runtime. Users with this role can edit and delete the portal resource.

    Select the **Update** check box to grant the permission to edit the portal resource at runtime. Users with this role can edit the portal resource, but they cannot delete it.

> **Note:** The user must also have the appropriate permissions to access the Assets page. For more information, see Section 9.5.1.1, "How to Add the Assets Page to a Page."

11. Click **OK**.

    The portal resource is exposed on the Assets page and users with the appropriate privileges can manage the resource at runtime.

9.5.1.3 How to Update Portal Resource Properties

You can update the details of portal resources that are exposed on the Assets page.

To update portal resource properties:

1. In the Application Navigator, right-click the portal resource that you want to edit and choose **Update Portal Resource**.
2. In the Update Portal Resource dialog, edit the fields as necessary.

   For information about the fields in this dialog, see Section 9.5.1.2, "How to Include a Portal Resource on the Assets Page."
3. When you are done, click **OK**.

9.5.1.4 How to Remove a Portal Resource from the Assets Page

If you no longer want users to be able to administer a particular portal resource at runtime, you can remove it from the Assets page.

To remove a portal resource from the Assets page:

1. In the Application Navigator, right-click the portal resource that you want to remove and choose **Remove Portal Resource**.
2. In the Remove Portal Resource dialog, click **Yes** to confirm that you want to remove the portal resource from the Assets page.

   The portal resource is removed from the Assets page and can no longer be managed at runtime. The portal resource itself is not deleted, so it is still available for use within the Portal Framework application.

9.5.1.5 How to Use the Assets Page at Runtime

At runtime, the Assets page provides access to administration tools for the resources available to the portal. For example, the administrator can create new portal resources (navigation models, page templates, skins, and so on), edit existing resources, upload resources exported from other applications, and so on.

For information about how to manage portal resources at runtime using the Assets page of the runtime administration console, see the "Managing Assets for a Portal Framework Application" section in *Administering Oracle WebCenter Portal*.

9.6 Working with Round-Trip Development

If you enable runtime administration of your portal resources, you may want to be able to pull those resources back into JDeveloper. For example, if a user adds a new navigation model to a portal at runtime, you may want to further refine it in JDeveloper. To do this, you must download the portal resource from the deployed application, using the Assets page. You can then import the portal resource into

JDeveloper, carry out your development work, export the resource, and finally upload it back into the deployed application. This is known as round-trip development.

You can do this with portal resources in any deployed Portal Framework application that includes the Assets page, including WebCenter Portal.

> **Note:** Oracle WebCenter Portal provides a JDeveloper project (`WebCenterSpacesResources`) to help you develop portal resources for WebCenter Portal. Section 55, "Developing Components for WebCenter Portal Using JDeveloper" explains how to use the `WebCenterSpacesResources` project to build resources for use in WebCenter Portal.

The process for round-trip development works as follows:

1. Build Portal Framework application in JDeveloper
2. Deploy application
3. Add or edit portal resources and add content to the application at runtime
4. Download portal resource to EAR file using the Assets page

   See Section 9.6.1, "How to Download a Portal Resource Using the Assets Page"
5. Import EAR file into JDeveloper

   See Section 9.6.2, "How to Import a Portal Resource into JDeveloper"
6. Edit portal resource in JDeveloper
7. Export portal resource to EAR file

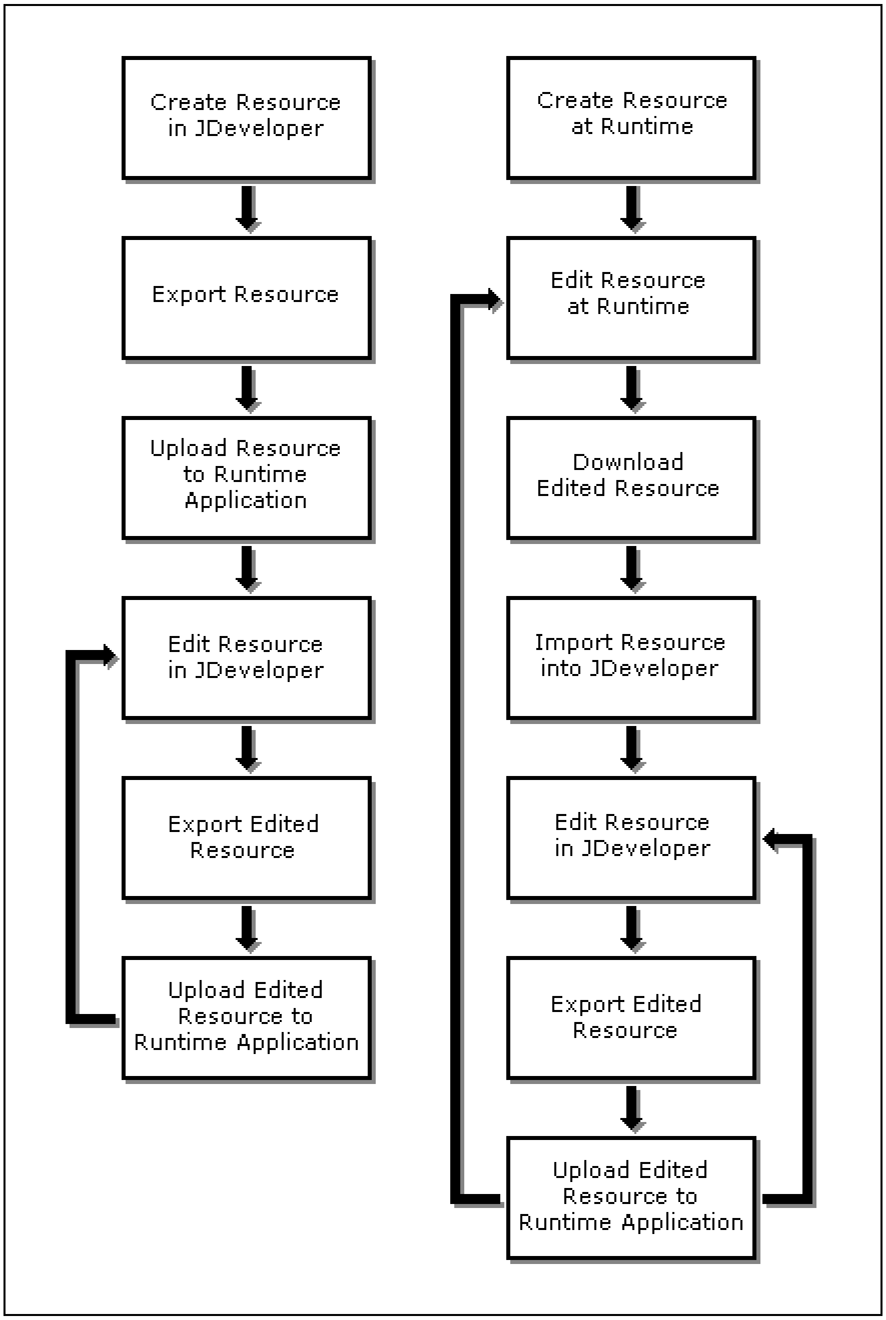
   See Section 9.6.3, "How to Export a Portal Resource from JDeveloper"
8. Upload portal resource to deployed application using the Assets page

   See Section 9.6.4, "How to Upload a Resource Using the Assets Page"
9. Repeat from step 3.

In addition, after the deployment of the application, developers can continue to create and edit portal resources in JDeveloper and upload those resources to the deployed application periodically.

Figure 9–4 illustrates the round-trip development process described above.

Figure 9–4 Round-Trip Development


Create Resource in JDeveloper
Export Resource
Upload Resource to Runtime Application
Edit Resource in JDeveloper
Export Edited Resource
Upload Edited Resource to Runtime Application
Create Resource at Runtime
Edit Resource at Runtime
Download Edited Resource
Import Resource into JDeveloper
Edit Resource in JDeveloper
Export Edited Resource
Upload Edited Resource to Runtime Application

This section includes the following topics:

- Section 9.6.1, "How to Download a Portal Resource Using the Assets Page"
- Section 9.6.2, "How to Import a Portal Resource into JDeveloper"
- Section 9.6.3, "How to Export a Portal Resource from JDeveloper"
- Section 9.6.4, "How to Upload a Resource Using the Assets Page"

Note: You cannot upload a task flow created in and exported from JDeveloper into a deployed application (or into WebCenter Portal), but you can import a task flow created at runtime into JDeveloper, modify it, and export it back to the runtime application. The steps to import, modify, and export task flows are the same as those for task flow styles. Therefore, the export, import, and edit tasks in this section are applicable for task flows and task flow styles.

For information about adding and exporting custom task flows, see Section 15.4, "Adding Custom Task Flows to a Page."

9.6.1 How to Download a Portal Resource Using the Assets Page

To edit a portal resource in JDeveloper, you first need to use the Assets page in the deployed application to download the portal resource to an EAR file that contains all the metadata for the resource.

For information about how to do this, see the "Downloading an Asset" section in *Administering Oracle WebCenter Portal*.

9.6.2 How to Import a Portal Resource into JDeveloper

When you have the EAR file, you can import it into JDeveloper, where you can then edit the portal resource.

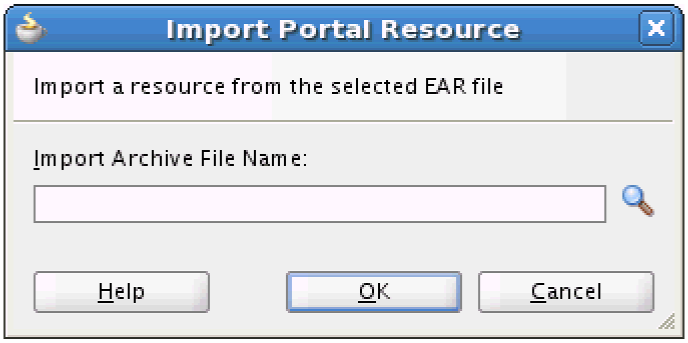
Note: You must import the portal resource into a Portal Framework application or an application that includes the appropriate technology scopes.

Note: When you import a portal resource into JDeveloper, if the resource already exists, the resource in JDeveloper is overwritten with the one from the archive. The original resource is saved to a temporary location, which is identified in the log.

To import a portal resource into JDeveloper:

1. In the Application Navigator, right-click the **Portal** project of the application into which you want to import the resource, and choose **Import Portal Resource**.
2. In the Import Portal Resource dialog (Figure 9–5), in the **Import Archive File Name** field, enter or browse for the archive file that contains the portal resource that you want to import.

Figure 9–5 The Import Portal Resource Dialog



Import Portal Resource

Import a resource from the selected EAR file

Import Archive File Name:

3. Click **OK**.

Note: Artifacts used or referenced by portal resources, such as icons and images, are not included in the archive when a portal resource is downloaded. When you import the portal resource, you must manage and move dependent artifacts manually. We recommend that you use a folder structure on your content server specifically for portal resource artifacts so that content is easy to identify and move, if required.

If you are managing legacy portal resources that store artifacts in MDS, we recommend that you relocate dependent artifacts to your content server. However, if you do need to move artifacts stored in MDS, you can use the MDS WLST commands `exportMetadata` and `importMetadata`.

9.6.3 How to Export a Portal Resource from JDeveloper

After editing the portal resource, you must export it to create an EAR file that can be uploaded to the deployed application.

To export a a portal resource from JDeveloper:

1. In the Application Navigator, right-click the resource that you want to export and choose **Export Portal Resource**.

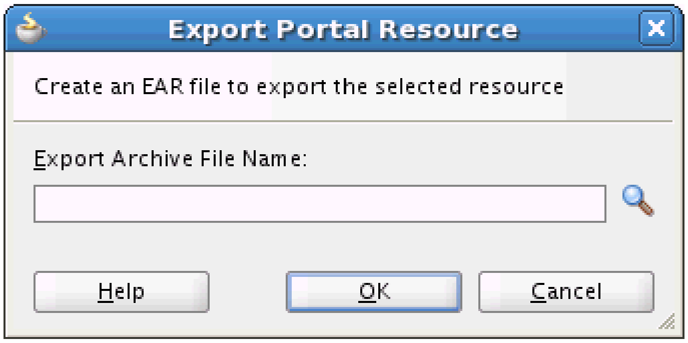
Note: If you do not see the **Export Portal Resource** option in the context menu, the resource is not a portal resource. For information about how to create the resource as a portal resource, see Section 9.5.1.2, "How to Include a Portal Resource on the Assets Page."

---

2. In the Export Portal Resource dialog (Figure 9–6), in the **Export Archive File Name** field, enter or browse for the path and file name for the export file.

   If you select an existing file, the contents of the file will be overwritten.

Figure 9–6 The Export Portal Resource Dialog


Export Portal Resource
Create an EAR file to export the selected resource
Export Archive File Name:
Help
OK
Cancel

3. Click **OK**.

   The export archive contains the files that make up the resource, for example, the JSPX file and the page definition. The archive also contains the `generic-site-resources.xml` file and the registry file with just the information about the exported resource.

> **Note:** Artifacts used or referenced by portal resources, such as icons and images, are not included in the archive. When you upload the portal resource, you must manage and move dependent artifacts manually. We recommend that you use a folder structure on your content server specifically for portal resource artifacts so that content is easy to identify and move, if required.
>
> If you are managing legacy portal resources that store artifacts in MDS, we recommend that you relocate dependent artifacts to your content server. However, if you do need to move artifacts stored in MDS, you can use the MDS WLST commands `exportMetadata` and `importMetadata`.

9.6.4 How to Upload a Resource Using the Assets Page

The final step is to take the EAR file of the updated resource and use the Assets page to upload the resource back into the deployed application.

For information about how to do this, see the "Uploading an Asset" section in *Administering Oracle WebCenter Portal*.

9.7 Working with WebCenter Portal Resources

WebCenter Portal is a web-based application that offers the very latest technology for building portals, social networking, communication, collaboration, and personal productivity. Out of the box, WebCenter Portal provides various built-in portal resources that users can leverage in their portals. If these built-in portal resources do not meet users' requirements, application administrators can build more within WebCenter Portal. For more information, see the "Creating Assets" section in *Building Portals with Oracle WebCenter Portal*.

> **Tip:** In WebCenter Portal, portal resources are referred to as assets.

In some cases, WebCenter Portal may not provide the necessary controls to create a portal resource that provides all the required functionality. In such cases, you can bring portal resources originally created in WebCenter Portal into JDeveloper for editing, and then upload them back into WebCenter Portal.

In addition, some portal resources used by WebCenter Portal, such as page styles and task flow styles, cannot be created in WebCenter Portal. Instead, these resources must be created in JDeveloper and then exported and uploaded to WebCenter Portal.

Oracle WebCenter Portal provides a special JDeveloper project (`WebCenterSpacesResources`) to help you develop portal resources for use in WebCenter Portal. For more information, see Section 55.1, "Developing Assets for WebCenter Portal."

When working with WebCenter Portal resources in JDeveloper, you should consider the following:

Navigation Models

- All the resources required for a WebCenter Portal navigation model exist within WebCenter Portal. Therefore, you should really only use JDeveloper to restructure WebCenter Portal navigation models and perform minor edits. First, you should create as much of the navigation model in WebCenter Portal as possible and add the required resources. You can then use JDeveloper to refine the order of the resources and set all required attributes and parameters.
- If you do want to use JDeveloper to add resources to a WebCenter Portal navigation model, you should obtain the path for the resource from WebCenter Portal by accessing the Show Properties dialog for the resource. For more information, see the "Viewing Information About an Asset" section in *Building Portals with Oracle WebCenter Portal*.
- When adding resources to a WebCenter Portal navigation model, you must manually enter the path to the resource. You cannot use the **Browse** icon. For example, to enter a link to a page, you must identify the ID of the page in WebCenter Portal and then enter that value manually as `page://`*`pathToXmlFile`*.

Page Templates

- The page template must include a facet definition called `content`.
- The page template must include at least one UI component with `class="WCPGTEMPLATE"`. The runtime editing of skins enables the targeting of the template background in a basic tab; it depends on this style being there.

10

Developing a Navigation Model

This chapter describes how to use Oracle JDeveloper to create and manage the navigation for your WebCenter Portal Framework applications.

This chapter includes the following topics:

10.1 Introduction to Navigation Models

Typically, a portal is made up of many pages that provide information from various different sources. Users need a way to easily move through all these pages to quickly access the specific information that they need. You provide this path through your portal's pages with your portal navigation.

You can also use your portal navigation to provide access to other resources, such as external pages, content repositories, portlets, and task flows.

A **navigation model** defines the content, structure, and metadata of the navigation. When you create the navigation model, you specify the items to include and the hierarchy of those items. Navigation models can include the following resources:

- Pages (individual pages and page hierarchies)
- External links

- Content (individual content items or the results of a content query)
- Other navigation models
- Portlets, task flows, and external applications

For more information, see Section 10.3, "Editing a Navigation Model."

You can also add resources that are dynamically generated:

- Custom Resources
- Components
- Custom Folders
- Custom Content

For more information, see Section 10.3.6, "How to Add Dynamically Generated Resources to a Navigation Model."

Seeded Navigation Model

When you create a new Portal Framework application, a navigation model is created for you (`default-navigation-model.xml`). You can build on this seeded navigation model or create your own. You might even want to create different navigation models for different user types.

> **Note:** If you create your own navigation model, rather than extend the seeded navigation model, we recommend that you set your navigation model as the default navigation model. For more information, see Section 10.4, "Selecting the Default Navigation Model."

After you have created your navigation model, you can expose it on any page or page template in your portal. For more information, see Section 10.11, "Visualizing Portal Navigation."

Runtime Management

Portal Framework applications support the runtime administration of navigation models to help users continue developing a portal even after it has been deployed. With runtime administration, authorized users can manage an application's navigation models, and create new ones, in a browser-based environment, with no requirement to install or understand JDeveloper. For more information, see Section 9.5, "Working with Portal Resources at Runtime."

Round-Trip Development

You can bring navigation models that have been created or modified at runtime back into JDeveloper to ensure that any changes are not lost if the portal is redeployed. You can also edit these navigation models to further enhance them if necessary, and upload them back into the deployed portal. For more information, see Section 9.6, "Working with Round-Trip Development."

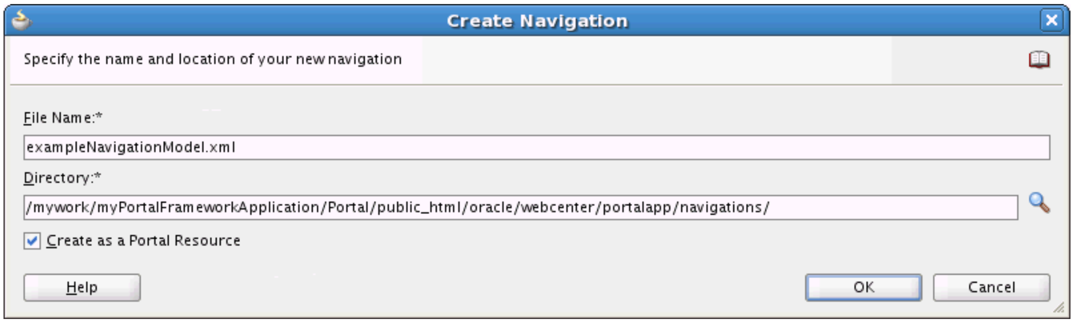
10.2 Creating a Navigation Model

If the seeded navigation model created for your application does not meet your requirements, you can create your own navigation model.

To create a navigation model:

1. In the Application Navigator, right-click the node where you want to create the navigation model (typically, `/oracle/webcenter/portalapp/navigations`) and choose **New**.
2. In the New Gallery, expand **Web Tier**, select **Portal Framework** and then **Navigation**, and click **OK**.
3. In the Create Navigation dialog (Figure 10–1), in the **File Name** field, enter a name for the XML file that represents the navigation model, for example `mainNavigation.xml`.

Figure 10–1 The Create Navigation Dialog



Create Navigation

Specify the name and location of your new navigation

File Name:*

exampleNavigationModel.xml

Directory:*

/mywork/myPortalFrameworkApplication/Portal/public_html/oracle/webcenter/portalapp/navigations/

☑ Create as a Portal Resource

4. In the **Directory** field, enter the full directory path of the location under which to create the navigation model definition XML file.

> **Note:** In a Portal Framework application, to expose the new navigation model in the Assets page of the runtime administration console, you must create the navigation model under the *`Application_Root`*`/Portal/public_html/oracle/webcenter/portalapp` directory. By default Portal Framework application includes a separate `navigations` directory.

5. Select **Create as a Portal Resource** to enable users with the appropriate permissions to manage the navigation model at runtime in the Assets page of the runtime administration console.

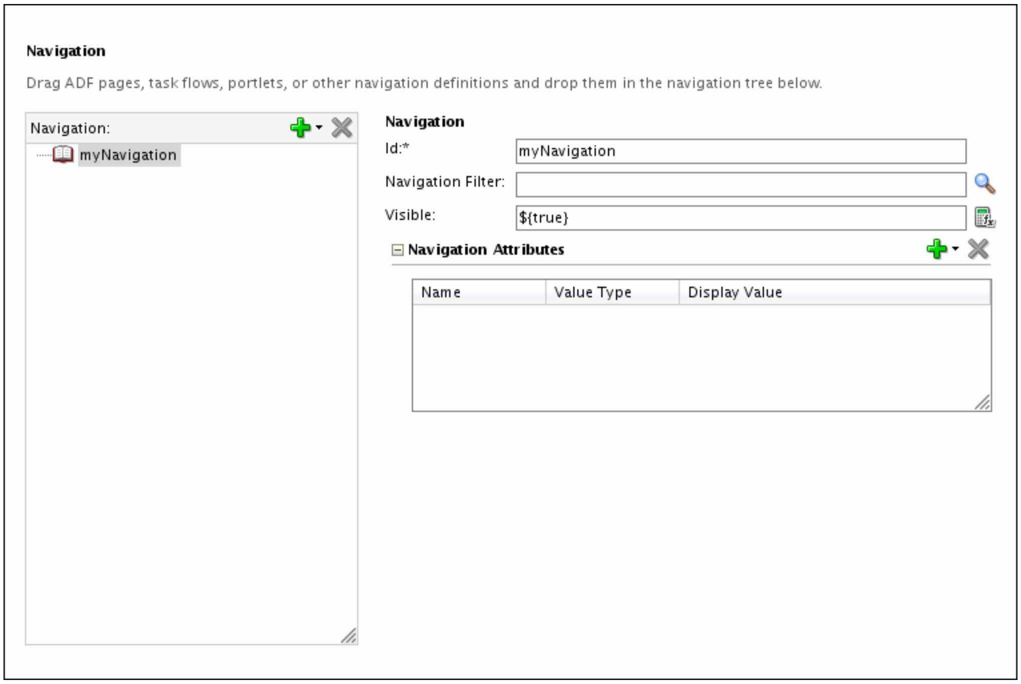
> **Note:** This option is available only if the directory you entered is the *`Application_Root`*`/Portal/public_html/oracle/webcenter/portalapp` directory or one of its subdirectories.

> **Tip:** If you do not select this option now, you can add the navigation model to the runtime administration console later by right clicking it and choosing **Create Portal Resource**.

6. Click **OK**.

   When you create a navigation model in a Portal Framework application, a navigation model definition file (an XML file) is created for the navigation model in the specified directory. The navigation model definition file opens in Design view (Figure 10–2).

Figure 10–2 A Navigation Model in Design View



Navigation

Drag ADF pages, task flows, portlets, or other navigation definitions and drop them in the navigation tree below.

Navigation: myNavigation

Navigation

Id:* myNavigation

Navigation Filter:

Visible: ${true}

Navigation Attributes

Name	Value Type	Display Value

The navigation model definition file is initially empty, so you must edit it to design the structure and content of your navigation model. For information, see Section 10.3, "Editing a Navigation Model."

> **Tip:** If you do not want to add resources from scratch, as a starting point, you could copy the source code of the `default-navigation-model.xml` file into the Source view of your new navigation model definition.

If you created the navigation model under the appropriate directory and selected the **Create as a Portal Resource** option, the navigation model is automatically available for runtime administration. For more information, see Section 9.5, "Working with Portal Resources at Runtime."

If you create your own navigation model in a Portal Framework application, rather than extend the seeded navigation model, it is recommended that you set your navigation model as the default navigation model for the application. This makes it much easier to consume the navigation model in your pages and page templates. For more information, see Section 10.4, "Selecting the Default Navigation Model."

10.3 Editing a Navigation Model

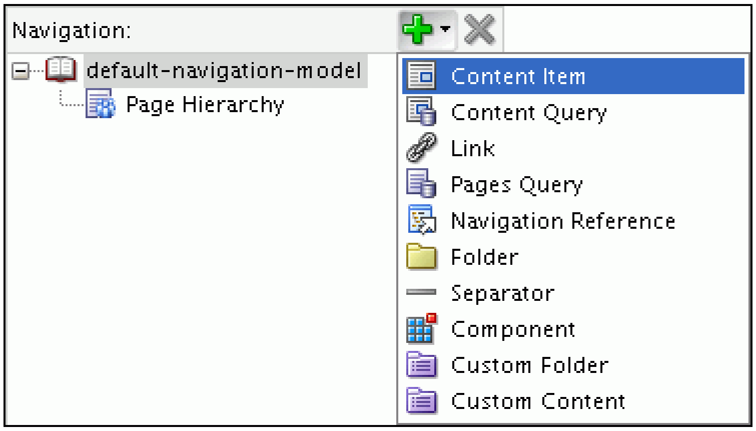
To define the content of your navigation model you can edit the seeded navigation model, `default-navigation-model.xml`, to add nodes for the resources that you want users to be able to access within your application. The seeded navigation model is created automatically when you create an application using the WebCenter Portal Framework Application template.

You can also create your own navigation model and edit that. For more information, see Section 10.2, "Creating a Navigation Model."

You can add nodes to a navigation model in two ways:

- Drag and drop resources from different areas in JDeveloper onto the navigation model in Design view.
- Use the options on the **Add new node** menu in the Design view for the navigation model (Figure 10–3).

Figure 10–3 The Navigation Model Add New Node Menu



In the Design view for the navigation model you can also modify and remove existing navigation model nodes.

This section includes the following topics:

- Section 10.3.1, "How to Drag and Drop a Resource onto a Navigation Model"
- Section 10.3.2, "How to Add a Page to a Navigation Model"
- Section 10.3.3, "How to Add a Folder to a Navigation Model"
- Section 10.3.4, "How to Add a Separator to a Navigation Model"
- Section 10.3.5, "How to Add Other Resources to a Navigation Model"
- Section 10.3.6, "How to Add Dynamically Generated Resources to a Navigation Model"
- Section 10.3.7, "How to Set Display Options for a Navigation Model or Navigation Model Node"
- Section 10.3.8, "How to Rearrange Nodes in a Navigation Model"
- Section 10.3.9, "How to Show or Hide a Navigation Model or Navigation Model Node"
- Section 10.3.10, "How to Edit a Navigation Model Node"
- Section 10.3.11, "How to Delete a Navigation Model Node"

10.3.1 How to Drag and Drop a Resource onto a Navigation Model

You can add the following resources to a navigation model by dragging and dropping them onto the desired location in the Design view of the navigation model definition file:

- **Pages**, from the Application Navigator. You are prompted to choose whether to add just the page itself or to add a page query that includes the page and its subpages.

- **URL connections,** from the Application Resources pane or Resource Palette.
- **Content items,** from a WebCenter Content connection in the Application Resources pane or Resource Palette.
- **Portlets,** from the Application Resources pane or Resource Palette.
- **Task flows,** from the Application Resources pane or Resource Palette.
- **External applications,** from the Application Resources pane or Resource Palette.
- **Navigation models,** from the Application Navigator. This embeds one navigation model inside another.

10.3.2 How to Add a Page to a Navigation Model

A navigation model is mostly made up of links to the various pages within the application. You can add links to any JSPX page in the application.

To add a page to a navigation model:

1. In the Application Navigator, right-click the navigation model to which you want to add the page, and choose **Open**.
2. In the Design view for the navigation model, in the Navigation column on the left side, select the node in the navigation model under which you want to add the page.
3. Click the **Add new node** icon and choose **Link**.
4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the navigation model.

   The ID is used to provide direct access to a node in the navigation model. For example, if you have a top level node with the ID `home`, and a child node below it with the ID `sales`, then the child node can be accessed using the following URL:

   ```
   http://host:port/application-context-root/servlet/home/sales
   ```

   Note: If the node is at the top level of the navigation model, the ID must not be one of the navigation URL reserved keywords. For more information, see Section 10.9, "Navigation URL Reserved Keywords."

   Tip: If the ID is not unique, or you enter any invalid characters, the border of the field becomes red.

5. From the **Type** drop-down list, select **Page**.
6. The **Factory Class** field is automatically populated with the appropriate value for pages and cannot be edited.
7. In the **URL** field, enter or browse for the URL to access the page. The URL should use the following format:

   ```
   page://pathToPage/pageName
   ```

   For example:

   ```
   page://oracle/webcenter/portalapp/pages/myPage.jspx
   ```

> **Tip:** If you are not sure of the path to the page, click **Browse Files** to locate the page in the application.

8. Select **Render URL in Page Template**, to render the page in the content area of the application using the specified page template.

   Select **Redirect to URL**, to cause the page to issue a client-side redirect to the defined URL.

9. In the **Visible** field, specify whether the page is listed in the navigation model when it is rendered at runtime. The default value is the EL expression `#{true}`, which means the page is listed for all users at all times. Enter `false` or `#{false}` to hide the page from all users at all times, or enter an EL expression to specify the conditions under which the page is listed. If the field is empty, the value defaults to `true`.

   > **Note:** Nodes in a navigation model are automatically filtered based on security. If a user does not have access to a page, it is not displayed in the rendered navigation model.

10. In the URL Attributes section, specify any desired display options for the page. For more information, see Section 10.3.7, "How to Set Display Options for a Navigation Model or Navigation Model Node."

11. In the URL Parameters section, enter values, as desired, for any parameters supported by the selected page.

    Click the **Add** icon to create a row in the Parameters table.

    For example, you can specify the size of the inline frame used to display the page by adding the `url_renderer_width` and `url_renderer_height` parameters and specifying a value in pixels.

12. Save the navigation model definition file.

10.3.3 How to Add a Folder to a Navigation Model

Navigation models can be organized hierarchically to create subsets of nodes in your navigation model or to group similar nodes together. This hierarchy can be collapsed at runtime to save space if you have a lot of nodes in your navigation model.

You can place a node under any other node in a navigation model to create this hierarchy. If you have a collection of nodes that do not have a node that can act as their parent, you can create a folder. A folder does not point to an underlying resource; it serves only to contain other navigation model nodes.

To add a folder to a navigation model:

1. In the Application Navigator, right-click the navigation model to which you want to add the folder, and choose **Open**.

2. In the Design view for the navigation model, in the Navigation column on the left side, select the node in the navigation model under which you want to add the folder.

3. Click the **Add new node** icon and choose **Folder**.

4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the navigation model.

The ID is used to provide direct access to a node in the navigation model. For example, if you have a top level node with the ID `home`, and a child node below it with the ID `sales`, then the child node can be accessed using the following URL:

```
http://host:port/application-context-root/servlet/home/sales
```

Note: If the node is at the top level of the navigation model, the ID must not be one of the navigation URL reserved keywords. For more information, see Section 10.9, "Navigation URL Reserved Keywords."

Tip: If the ID is not unique, or you enter any invalid characters in the ID, the border of the field becomes red.

5. In the **Visible** field, specify whether the folder is displayed when the navigation model is rendered at runtime. The default value is the EL expression `#{true}`, which means the folder is displayed to all users at all times. Enter `false` or `#{false}` to hide the folder from all users at all times, or enter an EL expression to specify the conditions under which the folder is displayed. If the field is empty, the value defaults to `true`.
6. In the Folder Attributes section, specify any desired display options for the folder. For more information, see Section 10.3.7, "How to Set Display Options for a Navigation Model or Navigation Model Node."
7. In the Folder Parameters section, enter values, as desired, for any parameters supported by the folder.

   Click the **Add** icon to create a row in the Parameters table.
8. Save the navigation model definition file.

10.3.4 How to Add a Separator to a Navigation Model

Separators visually divide a navigation model into distinct groupings of nodes. Separators enable you to visually break up the nodes in the navigation model when it is rendered at runtime, making it easier to locate nodes.

To add a separator to a navigation model:

1. In the Application Navigator, right-click the navigation model to which you want to add the separator, and choose **Open**.
2. In the Design view for the navigation model, in the Navigation column on the left side, select the node in the navigation model under which you want to add the separator.
3. Click the **Add new node** icon and choose **Separator**.
4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the navigation model.

   The ID is used to provide direct access to a node in the navigation model. For example, if you have a top level node with the ID `home`, and a child node below it with the ID `sales`, then the child node can be accessed using the following URL:

   ```
   http://host:port/application-context-root/servlet/home/sales
   ```

> **Note:** If the node is at the top level of the navigation model, the ID must not be one of the navigation URL reserved keywords. For more information, see Section 10.9, "Navigation URL Reserved Keywords."

> **Tip:** If the ID is not unique, or you enter any invalid characters in the ID, the border of the field becomes red.

5. In the **Visible** field, specify whether the separator is displayed when the navigation model is rendered at runtime. The default value is the EL expression `#{true}`, which means the separator is displayed to all users at all times. Enter `false` or `#{false}` to hide the separator from all users at all times, or enter an EL expression to specify the conditions under which the separator is displayed. If the field is empty, the value defaults to `true`.
6. Save the navigation model definition file.

10.3.5 How to Add Other Resources to a Navigation Model

You can add other resources to your navigation model, including documents, external web pages, portlets, and task flows.

To add other resources to a navigation model:

1. In the Application Navigator, right-click the navigation model to which you want to add the resource, and choose **Open**.
2. In the Design view for the navigation model, in the Navigation column on the left side, select the node in the navigation model under which you want to add the resource.
3. Click the **Add new node** icon, then choose the type of resource that you want to add:
   - **Content Item** to add a document
   - **Content Query** to add a collection of documents that meet specific query criteria
   - **Link** to add a portlet, task flow, external application, or web page
   - **Pages Query** to add a list of pages
   - **Navigation Reference** to embed another navigation model
4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the navigation model.

   The ID is used to provide direct access to a node in the navigation model. For example, if you have a top level node with the ID `home`, and a child node below it with the ID `sales`, then the child node can be accessed using the following URL:

   ```
   http://host:port/application-context-root/servlet/home/sales
   ```

   > **Note:** If the node is at the top level of the navigation model, the ID must not be one of the navigation URL reserved keywords. For more information, see Section 10.9, "Navigation URL Reserved Keywords."

> **Tip:** If the ID is not unique, or you enter any invalid characters in the ID, the border of the field becomes red.

5. In the **Visible** field, specify whether the node is displayed when the navigation model is rendered at runtime. The default value is the EL expression `#{true}`, which means the node is displayed to all users at all times. Enter `false` or `#{false}` to hide the node from all users at all times, or enter an EL expression to specify the conditions under which the node is displayed. If the field is empty, the value defaults to `true`.
6. The remaining fields are specific to the resource type. See Table 10–1 for details.

Table 10–1 Fields for Navigation Model Resources

Field	Applies to	Description
Factory Class	Link Content Item	This field is automatically populated with the appropriate factory class for the resource type and cannot be edited.
Insert Folder Contents	Content Query Page Query	Select to display the results of the query directly in the rendered navigation model rather than displaying them under a folder.
Page Style	Page Query	Select the style of page to include in the navigation model.
Page Template	Page Query	Select the page template to use to display the resource when it is selected.
Page Visibility	Page Query	Select whether to include pages even if they have been flagged as hidden.

Path	Page Query
	Navigation Reference
		Enter the path and file name of the XML file that corresponds to the page that you want to use as the starting point of the page query. For example:
		`/oracle/webcenter/portalapp/pagehierarchy/pages/pages.xml`
		`/oracle/webcenter/portalapp/pagehierarchy/pages/productsPages.xml`

Query	Content Query	Enter the query criteria to identify the content to include in the navigation model, for example: `SELECT * FROM cmis:document WHERE cmis:name LIKE 'Foo%'` For more information about how to format the query and for more examples, see Chapter 31, "Content Management REST API."
Redirect to URL	Link Content Item	Select to issue a client-side redirect to the defined URL.
Render URL in Page Template	Link Content Item	Select to render the resource in the current page, using the specified page template.

Table 10–1 (Cont.) Fields for Navigation Model Resources

Field	Applies to	Description
Repository	Content Query	Enter or browse for the content repository whose content you want to search. **Note:** If you enter the repository name manually (that is, without using drag and drop or the Choose a Resource dialog), and if the connection for the repository is available only in the Resource Palette, then ensure that you first add the connection to the application (in the Application Resources pane).
Scope	Page Query	This field is not applicable to Portal Framework applications (the scope is always the current application).
Type	Link Content Item	Select the type of link that you want to add to the navigation model: **External Link**, **External Application**, **Page**, **Taskflow**, **Portlet**, **Content**.
URL	Link Content Item	Enter the location of the resource. If you do not know the location, click the **Browse Files** icon to browse for available resources. Table 10–2 provides the URL format to use for the different resource types. **Note:** If you enter the URL for a **Portlet**, **External Application**, or **Content** resource manually (that is, without using drag and drop or the Choose a Resource dialog), and if the connection for the resource is available only in the Resource Palette, then ensure that you first add the connection to the application (in the Application Resources pane.

Table 10–2 provides the URL format to use for the different resource types.

Table 10–2 Format for URL for Different Resource Types

Resource Type	Location in Application	URL Formats
External Link	None	Absolute or relative path to the web page to which you want to link. **Note:** If you use the **External Link** option to include a `mailto:` link in your navigation, your navigation UI must explicitly handle this type of link. For information, see Section 10.11, "Visualizing Portal Navigation."
External Application	External application connection in the Application Resources pane	`extapp://`*`externalApplicationId`*

Page	Application Navigator	`page://`*`pathToPage`*`/`*`pageName`*
		For example:
		`page://oracle/webcenter/portalapp/pages/myPage.jspx`

Table 10–2 (Cont.) Format for URL for Different Resource Types

Resource Type	Location in Application	URL Formats
Task Flow from an ADF Library	Resource Palette	`taskflow://`*pathToTaskFlow*`/`*taskFlowDefinitionFileName*`#`*taskFlowId* **Note:** Navigating directly to a task flow in this way enables you to set the parameters of the task flow. If you need additional control over the task flow, add it to a page and then add the page to the navigation model.
Task Flow Within the Application	Application Navigator	`taskflow://`*PathToTaskFlow*`/`*taskFlowDefinitionFileName*`#`*taskFlowId* **Note:** Navigating directly to a task flow in this way enables you to set the parameters of the task flow. If you need additional control over the task flow, add it to a page and then add the page to the navigation model.
Portlet	Portlet producer connection in the Application Resources pane or Resource Palette	`portlet://`*producerId*`/`*portletId* **Note:** If you provide navigation directly to a portlet in this way, then when users navigate to the portlet they will not be able to customize it. If you want users to be able to customize the portlet, then add it to a page to create a portlet instance, which can be customized, and then add that page to the navigation model.
Content	Content repository connection in the Application Resources pane or Resource Palette	`content://`*contentConnectionId*`/`*documentId*

7. In the resource's Attributes section, specify any desired display options for the resource. For more information, see Section 10.3.7, "How to Set Display Options for a Navigation Model or Navigation Model Node."

8. In the resource's Parameters section, enter values, as desired, for any parameters supported by the resource.

   Click the **Add** icon to create a row in the Parameters table.

   For links you can specify the size of the inline frame used to display the target of the link by adding the `url_renderer_width` and `url_renderer_height` parameters and specifying a value in pixels.

   If you want to use a Content Presenter display template to display a content item or the results of a content query, in the Parameters section, click the **Add icon**, and choose **templateView**.

   In the **Value** field for the **templateView** parameter, enter the display template view ID to use for rendering the content, for example:

   - For a single content item: `oracle.webcenter.content.templates.default.detail`
   - For a content query: `oracle.webcenter.content.templates.default.list.simple`

> **Note:** If you display a wiki page using a Content Presenter display template, by default any links within that wiki page are displayed in the Document Viewer. If you want to display wiki page links using Content Presenter, you must edit the `adf-config.xml` file. For more information, see Section 30.3.5, "Displaying Wiki Page Links Within Content Presenter."

10.3.6 How to Add Dynamically Generated Resources to a Navigation Model

As well as adding known resources to your navigation model, you can also add resources that are dynamically generated at runtime.

- **Custom resources** are links to third party resources.
- **Custom components** are resources, such as simple ADF Faces components, compound objects containing two or more components, or JSF Verbatim tags that let you add arbitrary HTML content inside them.
- **Custom folders** are configured to display their content dynamically at runtime. A custom folder is not added as a folder with resources; it contains only a reference to the factory class, which displays the resources dynamically.
- **Custom content providers** dynamically generate zero or more resources at runtime. They are very similar to custom folders, except that, when you add a custom folder, the folder is always displayed when the navigation model is rendered at runtime, even if it is empty. With custom content providers however, the folder is displayed at runtime only if it has content inside it.

To add dynamically generated resources to a navigation model:

1. In the Application Navigator, right-click the navigation model to which you want to add the resource, and choose **Open**.
2. In the Design view for the navigation model, in the Navigation column on the left side, select the node in the navigation model under which you want to add the resource.
3. Click the **Add new node** icon, then choose the type of resource that you want to add:
   - **Link** to add a custom resource. You must also select **Other** from the **Type** drop-down list.
   - **Component** to add a custom component
   - **Custom Folder** to add a custom folder
   - **Custom Content** to add a custom content provider
4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the navigation model.

   The ID is used to provide direct access to a node in the navigation model. For example, if you have a top level node with the ID `home`, and a child node below it with the ID `sales`, then the child node can be accessed using the following URL:

   ```
   http://host:port/application-context-root/servlet/home/sales
   ```

Note: If the node is at the top level of the navigation model, the ID must not be one of the navigation URL reserved keywords. For more information, see Section 10.9, "Navigation URL Reserved Keywords."

Tip: If the ID is not unique, or you enter any invalid characters in the ID, the border of the field becomes red.

5. In the **Visible** field, specify whether the node is displayed when the navigation model is rendered at runtime. The default value is the EL expression `#{true}`, which means the node is displayed to all users at all times. Enter `false` or `#{false}` to hide the node from all users at all times, or enter an EL expression to specify the conditions under which the node is displayed. If the field is empty, the value defaults to `true`.

6. The remaining fields are specific to the resource type. See Table 10–3 for details.

Table 10–3 Fields for Custom Navigation Model Resources

Field	Applies to	Description
Component Factory	Custom Component	Enter or browse for the Java class that implements the `oracle.adf.rc.component.ComponentFactory` interface and creates an instance of the component based on a set of parameters, for example, `oracle.adf.rc.component.XmlComponentFactory`. As you type the name, the field autocompletes with valid factory classes from the classpath. For more information, see Section C.4, "Factory Classes Available for Adding Dynamic Resources to the Catalog."
Content Provider	Custom Content	Enter or browse for the Java class that implements the `oracle.adf.rc.spi.plugin.catalog.CustomContentProviderV2 interface`. For more information, see Section C.4, "Factory Classes Available for Adding Dynamic Resources to the Catalog."
Factory Class	Custom Resource	Enter or browse for the `URLResourceFactory` implementation class that can resolve the URL for the custom resource.
Initial Context Factory	Custom Folder	Enter or browse for the Java class that implements the `javax.naming.spi.InitialContextFactory` interface and generates the folder based on a set of parameters. For more information, see Section C.4, "Factory Classes Available for Adding Dynamic Resources to the Catalog."
Insert Folder Contents	Custom Folder	Select to display the contents of the custom folder directly in the rendered navigation model rather than displaying them under the folder.
Path	Custom Folder	Enter the MDS path for the custom folder.

Table 10–3 (Cont.) Fields for Custom Navigation Model Resources

Field	Applies to	Description
Redirect to URL	Custom Resource	Select to cause the page to issue a client-side redirect to the defined URL.
Render URL in Page Template	Custom Resource	Select to render the resource in the current page, using the specified page template.
Type	Custom Resource	Select **Other**.
URL	Custom Resource	Enter the URL to access the resource.

7. In the resource's Attributes section, specify any desired display options for the resource. For more information, see Section 10.3.7, "How to Set Display Options for a Navigation Model or Navigation Model Node."

> **Note:** Typically for custom content providers, you will not need to specify any attributes, because the attributes for the resources generated by the content provider will be specified by the content provider.

8. In the resource's Parameters section:

   - For custom resources, enter values, as desired, for any parameters supported by the custom resource.
   - For custom folders, add the parameters that were defined while implementing the factory class. You can bind these parameters to other artifacts in the application.
   - For custom content providers, define the parameters on the custom content provider. The parameters you define here are passed to and interpreted by the `CustomContentProviderV2` implementation.

   Click the **Add** icon to create a row in the Parameters table.

9. Save the navigation model definition file.

10.3.7 How to Set Display Options for a Navigation Model or Navigation Model Node

You can specify various display options for a navigation model or any of its nodes to determine their appearance and behavior when the navigation model is rendered at runtime. The display options available depend on the type of the resource.

To set display options for a navigation model node:

1. In the Application Navigator, right-click the navigation model and choose **Open**.
2. In the Design view for the navigation model, in the Navigation column on the left side, select the node for which you want to set display options.

   To set display options for the navigation model, select the root node.

3. In the resource's Attributes panel, click the **Add** icon and choose the attribute that you want to set. Table 10–4 lists the available attributes.

Table 10–4 Navigation Model Display Options

Attribute	Description
Title	The title displayed for the node when the navigation model is rendered at runtime.
AccessKey	A key mnemonic (single character) that users can enter to access the node without using the mouse.
Description	A description of the node.
IconURI	An icon to visually represent the node. This is displayed next to the Title when the navigation model is rendered at runtime.
Subject	Keywords to facilitate searching of the node.
Target	The location on the container page where the node is displayed when it is selected, either in the same browser window (`_self`), a new window (`_blank`), or a popup (`_popup`), or any other location supported by the navigation UI. **Note:** Popups are not supported for pages.
ToolTip	Text that displays to provide additional information about the node when users hover the mouse over the Title.
Modified	The date of the last modification of the node. This attribute is used for site map creation.
ChangeFrequency	How frequently the node is likely to change: `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, `never`. This attribute is used for site map creation.
Significance	The priority of this node relative to other nodes in the navigation model, within the range `0.0` to `1.0`. This attribute is used for site map creation.
ExternalId	An ID to enable a direct reference to a node in the navigation model from a static link in the page. For more information, see Section 10.9, "Navigation URL Reserved Keywords."

4. From the **Value Type** drop-down list, choose:
   - **Literal String**—to specify a string as the value for the attribute.
   - **Resource Bundle**—to use a resource bundle to provide localized values for the attribute.
5. In the **Display Value** field, enter the value for the attribute. If you are using a resource bundle, click the **Browse** icon to select the resource bundle to search for the localized value.
6. Save the navigation model definition file.

10.3.8 How to Rearrange Nodes in a Navigation Model

You can move nodes around within a navigation model after you have added them. You can rearrange nodes in the following ways:

- Drag and drop a node from one location to another.

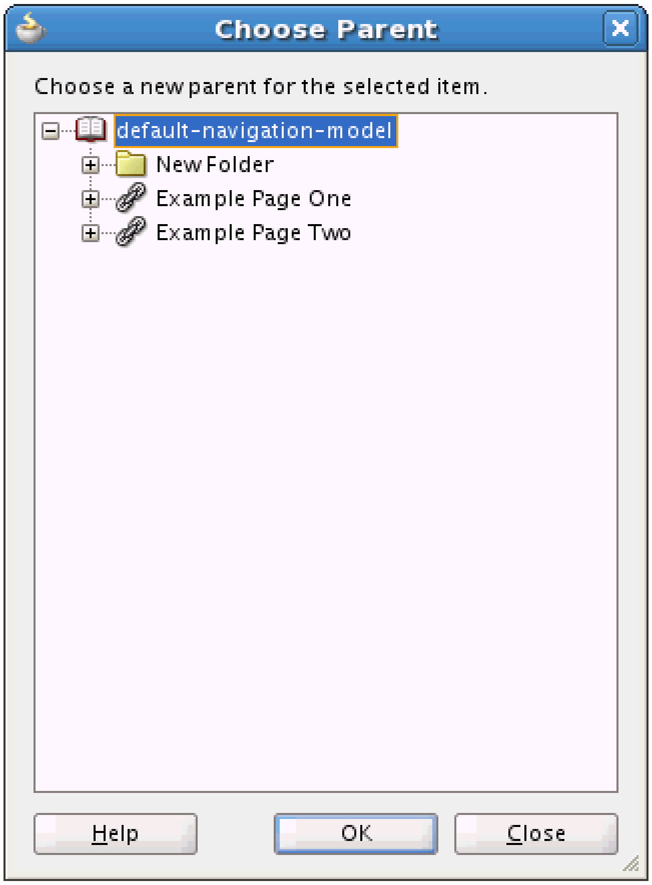
  To move a node within the navigation model, select the node and drag it to the desired position. To indent a node (child) under another (parent), select the child node and drag it over the top of the parent node.

- Use the **Change Parent** context menu option to move a node to a different location.

To rearrange a node using the Change Parent option:

1. In the Application Navigator, right-click the navigation model and choose **Open**.
2. In the Design view for the navigation model, in the Navigation column on the left side, right-click the node and choose **Change Parent** from the context menu.
3. In the Choose Parent dialog (Figure 10–4), select the parent node in which to include the node and click **OK**.

Figure 10–4 The Change Parent Dialog



Choose a new parent for the selected item.

- default-navigation-model
  - New Folder
  - Example Page One
  - Example Page Two

Note: Any node within a navigation model can be the parent of another node.

4. Save the navigation model definition file.

10.3.9 How to Show or Hide a Navigation Model or Navigation Model Node

You can specify whether or not a navigation model or one of its nodes is visible at runtime.

> **Tip:** As well as specifying an absolute true or false value, you can also dynamically determine whether or not the navigation model or node is available by using an EL expression to specify the conditions under which it is visible.

To show or hide a navigation model or navigation model node:

1. In the Application Navigator, right-click the navigation model and choose **Open**.
2. In the Design view for the navigation model, in the Navigation column on the left side, select the node for which you want to set the visibility.

   To set the visibility of the navigation model, select the root node.
3. In the **Visible** field, specify whether the navigation model or node is available for use in the application. This field takes an EL value. The default is `#{true}`, which means the navigation model or node is visible. Enter `false` or `#{false}` to hide the navigation model or node, or enter an EL expression to specify the conditions under which the navigation model or node is available. If the field is empty, the value defaults to `true`.
4. Save the navigation model definition file.

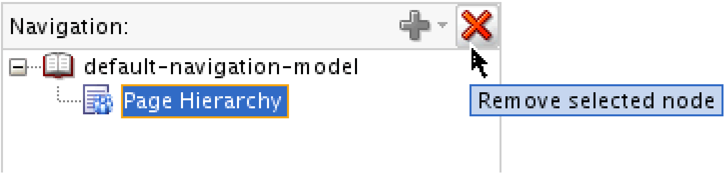
10.3.10 How to Edit a Navigation Model Node

To edit a navigation model node, select it in the Navigation section of the navigation model definition file. The resource's attributes and parameters are displayed in the right half of the page. You can edit values for these attributes and parameters and save the navigation model definition file. For details about a resource's attributes and parameters, see the appropriate section earlier in this chapter.

10.3.11 How to Delete a Navigation Model Node

To delete a resource, select it in the Navigation section of the navigation model definition file and click the **Remove selected node** icon (Figure 10–5).

Figure 10–5 Delete Option in the Navigation Model Design View



10.4 Selecting the Default Navigation Model

Every Portal Framework application defines a default navigation model that provides a convenient way to identify the navigation model that should be used by default by the application. You can then reference this default navigation model without having to specify its actual name. For example, in navigation EL expressions, the default navigation model is often referenced, such as in `#{navigationContext.defaultNavigationModel}`.

When you first create a Portal Framework application, the seeded navigation model, `default-navigation-model.xml`, is set as the application's default navigation model. If you subsequently create your own navigation model to use for the main navigation path through your application, rather than having to explicitly reference this navigation model whenever you want to use it, you can set it as the default. This greatly simplifies the process of using the navigation model in your application.

You can set the default navigation model for a Portal Framework application by editing the `oracle.webcenter.portalapp.navigation.model` preference in the `adf-config.xml` file.

To select the default navigation model:

1. In the Application Resources pane of the Application Navigator, right-click the **adf-config.xml** file, and choose **Open**.

   > **Tip:** To locate the `adf-config.xml` file, expand the **Descriptors** node, and then the **ADF META-INF** node.

2. Click the **Source** tab.
3. Locate the ADF preference with the following `id`:

   ```
   oracle.webcenter.portalapp.navigation.model
   ```

4. Set the `value` attribute to the path of the navigation model that you want to use as the default for the application, for example:

   ```
   value="/oracle/webcenter/portalapp/navigations/myNavigationModel.xml"
   ```

   Example 10–1 shows an example of the complete preference element.

Example 10–1 The Default Navigation Model ADF Preference

```
<preference id="oracle.webcenter.portalapp.navigation.model"
           desc="Default Navigation Model"
           value="/oracle/webcenter/portalapp/navigations/myNavigationModel.xml"
           resourceType="navigation" display="true"/>
```

5. Save the `adf-config.xml` file.

10.5 Filtering the Contents of a Navigation Model

You can use a filter to determine which nodes to include in the navigation model, based on specific criteria, when it is rendered at runtime.

> **Tip:** You can conditionally hide individual nodes in the navigation model by specifying an EL expression in the **Visible** field for the node. For more information, see Section 10.3.9, "How to Show or Hide a Navigation Model or Navigation Model Node."

To filter the contents of a navigation model:

1. In the Application Navigator, right-click the navigation model and choose **Open**.
2. In the Design view for the navigation model, in the **Navigation** panel on the left side, select the node that represents the navigation model (the root node).
3. In the **Navigation Filter** field, enter the name of a Java class to use to filter out selected nodes in the navigation model based on specific criteria.

   The Java class should implement the `oracle.adf.rc.spi.plugin.catalog.CatalogDefinitionFilter` interface.

Nodes are automatically filtered based on security. If a user does not have access to a particular resource, the node for that resource is not displayed when the navigation model is rendered at runtime.

4. Save your changes.

10.6 Deleting a Navigation Model

If a navigation model is no longer required within your application, you can delete it.

Note: If you delete an application's default navigation model, you must make sure to change the default navigation model to a valid navigation model. For more information, see Section 10.4, "Selecting the Default Navigation Model."

To delete a navigation model, right-click the navigation model in the Application Navigator and choose **Delete** from the context menu. For more information, see Section 9.4, "Deleting Portal Resources."

10.7 Editing the Navigation Registry File

The navigation registry is a resource catalog specifically for registering which resources users can add to navigation models at runtime. Each Portal Framework application contains one navigation registry file, `navigation-registry.xml`, which is created when you create the application. You can edit this file, for example, to remove the Navigation Reference resources so that users cannot embed other navigation models at runtime.

To edit the navigation registry:

1. In the Application Navigator, right-click the `navigation-registry.xml` file.

   Tip: You can find this file under *`Application_ Root`*`/oracle/webcenter/portalapp/navigations`.

2. Edit the file the same way as any other resource catalog. For more information, see Section 14.3, "Editing a Resource Catalog."

   You can add the following resources to the navigation registry:

   - Folder
   - Link
     - Task Flow
     - Portlet
     - Content
     - Other
   - Resource Catalog
   - Component
   - Custom Folder
   - Custom Content

You can also modify and remove existing resources in the navigation registry, and rearrange resources in the registry.

3. When you are finished, save the `navigation-registry.xml` file.

10.8 Editing the Navigation Renderer

The navigation renderer is a JSPX page that renders non-page resources when accessed through a navigation model, including:

- Portlets
- Content
- External links
- External applications
- Task flows

You can edit the navigation renderer page to change how these types of resources are rendered. For example, you may also want to add an image before or after the navigation renderer task flow or change from a flow to a stretch layout.

> **Note:** In the vast majority of cases, you should be able to edit the existing navigation renderer to meet your requirements. However, if required, you can create your own navigation renderer page. For example, the navigation renderer expects a `content` facet. If you want to use a different facet, you can create your own page and place the navigation renderer task flow in the appropriate location for your template.
>
> If you choose to create your own navigation renderer page, it must include a navigation renderer region that contains the navigation renderer task flow.
>
> To set your page as the navigation renderer for the application, edit the navigation renderer ADF preference (`oracle.webcenter.portalapp.navigation.renderer`) to point to the appropriate file. For detailed instructions for how to edit an ADF preference, see Section 10.4, "Selecting the Default Navigation Model."

The navigation renderer page is hidden by default, so you must first show it in your application before you can edit it.

To edit the navigation renderer:

1. In the Application Navigator, right-click the application project and choose **Project Properties**.
2. In the Project Properties dialog, expand the **Project Source Paths** node and select **Web Application**.
3. Select the **Excluded** tab.
4. Select the navigation renderer file (`navigation-renderer.jspx`) and click **Remove** to remove it from the list of excluded files.
5. Click **OK**.

   The navigation renderer JSPX file is now listed in the Application Navigator under the following node:

```
/oracle/webcenter/portalapp/pages/
```

6. In the Application Navigator, right-click **navigation-renderer.jspx** and choose **Open**.
7. Click the **Source** tab and edit the file as required.
8. When you are finished, save the `navigation-renderer.jspx` file.

10.9 Navigation URL Reserved Keywords

You can use specific reserved keywords to provide direct access to nodes within a navigation model. These reserved keywords are:

- `wcnav_defaultSelection`—Use to access the first navigable node of a navigation model
- `wcnav_currentSelection`—Use to access the currently selected node of a navigation model
- `wcnav_externalId`—Use to access the node within a navigation model with the specified external ID
- `wcnav_title`—Use to access the node within a navigation model with the specified title

You can use these keywords in an `af:goLink` component in a page or page template (Example 10–2) or in the URL of an External Link navigation item in a navigation model (Example 10–3).

Example 10–2 Providing Direct Access to a Navigation Model Node from a goLink Component

```
<af:goLink id="pt_glink1" text="Navigation Item"
           destination="/faces/wcnav_defaultSelection"/>
```

Example 10–3 Providing Direct Access to Navigation Model Node from an External Link Navigation Item

```
<url visible="#{true}"
     factoryClass="oracle.webcenter.portalframework.sitestructure.rc.UrlResourceFactory"
     id="externalLink"
     url="/faces/wcnav_externalId/myNavigationItem">
</url>
```

By default these URLs provide access to nodes within the default navigation model. To directly access a node in a non-default navigation model, you must specify the path of the navigation model by setting the `wcnav.modelPath` URL parameter, for example:

```
/faces/wcnav_externalId/myNavigationItem?wcnav
.modelPath=/oracle/webcenter/siteresources/scopedMD/
s7f446cab_f622_4b68_a83e_b7eaf28b52ec/navigation/gsr0271c712_721a_4565_9f0e_
755784a7093b/
myProjectNavigationModel
```

Depending on where you are using the link, you may need to encode the URL parameters, for example, if the external ID contains spaces or special characters you would specify the URL as `/faces/wcnav_externalId/my%2Fnav%2Fitem`.

10.10 Tips for Developing Navigation Models

When creating a navigation model for your Portal Framework application, consider the following:

- Try to use only one main navigation model. Using multiple navigation models limits the control of friendly URLs.
- Ensure that each section of your Portal Framework application has a friendly subroot name. For example, place all footer links under a Footer folder.
- Include all links that take users to another part of the Portal Framework application, including header and footer links, in the navigation model.
- Use external IDs to surface persistent links in the application so that external applications can reference them without breaking when navigation model nodes are moved.
- If a page defines parameters, you can set these parameters in the navigation model node to dynamically control how the page is rendered.
- Use page links as often as possible. For example, if you want to include a contact link, create a page to display the link and then include that page in the navigation model.
- Include all pages used within the portal as page links in the navigation model.

For more information, see the "Oracle WebCenter & ADF Architecture Team" blog.

10.11 Visualizing Portal Navigation

The **navigation visualization** determines how the navigation appears in the application. For example, navigation can be provided as a set of tabs along the top of each page, or perhaps as a tree structure along the side of the page. Another common navigation visualization is to provide a "master-detail" navigation, for example, tabs along the top of the page, with each tab having additional navigation provided as a tree structure along the side of the page.

Typically, you add navigation visualization to page templates, so that it can be defined in one place and propagated consistently across the whole portal. However, you can also add navigation visualization to individual pages.

Oracle WebCenter Portal provides several built-in navigation task flows in the **WebCenter Portal - Services Catalog** of the resource catalog that you can add to pages or page templates to visualize the navigation. These built-in navigation task flows provide a quick way to test your navigation model, but they provide a fairly simple navigation visualization. For more information about these built-in navigation task flows, see the "Adding Navigation to a Page Template" section in *Building Portals with Oracle WebCenter Portal*.

It is more likely that you will require a more advanced visualization. To do this, you must create your own navigation UI using ADF navigation components and the Oracle WebCenter Portal navigation APIs.

Note: If the navigation model referenced by the page or page template includes External Link navigation items that use `mailto:` links, you must explicitly handle these. The example below uses JSTL to inspect the navigation item's `externalURL` to see if it starts with the string `mailto:`. If it does, an ADF Faces `goLink` component is used to render the link.

```
<c:choose>
  <c:when test="${fn:startsWith(node.externalURL, 'mailto:')}">
    <af:goLink id="pt_gl_mail" text="#{node.title}"
               destination="#{node.externalURL}"/>
  </c:when>
  <c:otherwise>
    ...
  </c:otherwise>
</c:choose>
```

Oracle WebCenter Portal provides two sets of APIs for adding navigation to your portal:

- Expression Language (EL) APIs—Use EL expressions to obtain the navigation model and navigation nodes.
- REST APIs—Use standard HTTP methods to point to the navigation model and navigation nodes, returning a standard representation of any retrieved object. REST APIs can be used when using client-side programming languages, for example JavaScript + HTML, or environments, for example an iPhone.

Note: Any task flow that uses the navigation model to trigger navigation within an application must include a `parent-action` activity, named `wcnav_parentAction`, in the task flow definition that propagates the `wcnav_outcome` to the root level, as follows:

```
<parent-action id="wcnav_parentAction">
  <root-outcome>wcnav_outcome</root-outcome>
</parent-action>
```

This section includes the following topics:

- Section 10.11.1, "Using the Navigation Expression Language APIs"
- Section 10.11.2, "Using the Navigation REST APIs"
- Section 10.11.3, "Tips for Visualizing Portal Navigation"

10.11.1 Using the Navigation Expression Language APIs

Oracle WebCenter Portal provides a set of expression language (EL) APIs that you can use to obtain the navigation model and represent that navigation model as a runtime model. The runtime models can be bound directly to ADF Faces navigation components.

The available navigation EL expressions are listed in full in Section G.7, "ELs Related to Navigation."

This section includes the following topics:

- Section 10.11.1.1, "Introduction to the Navigation Context"

- Section 10.11.1.2, "Introduction to the Navigation Runtime Model"
- Section 10.11.1.3, "Introduction to the Navigation Resource"
- Section 10.11.1.4, "How to Render the Navigation Model as a List of Links"
- Section 10.11.1.5, "How to Render the Navigation Model as a Tree"
- Section 10.11.1.6, "How to Render the Navigation Model as a Three-Level Menu"
- Section 10.11.1.7, "How to Render the Navigation Model as Breadcrumbs"
- Section 10.11.1.8, "How to Render Master-Detail Navigation"

> **Note:** This section includes some examples of how to use the navigation EL APIs. For a full working example, see the default page templates (pageTemplate_globe.jspx and pageTemplate_swooshy.jspx) created when you create a Portal Framework application.

10.11.1.1 Introduction to the Navigation Context

The Navigation Context is the entry point to access all navigation elements within your system. Specifically, it enables you to access navigation models via preference, state, and direct reference, as well as providing the hooks to create custom UI to actually navigate to the nodes.

Navigation Model Access

- Default navigation model (preference)—This is the model specified by the ADF preference oracle.webcenter.portalapp.navigation.model in the adf-config.xml file. This enables you to define the general model to be used throughout your application and enables you to change the value in one place rather than having to go to each page and page template to set the value. The EL expression to retrieve the default navigation model is:

  ```
  #{navigationContext.defaultNavigationModel}
  ```

  > **Note:** For more information about how to set the oracle.webcenter.portalapp.navigation.model preference, see Section 10.4, "Selecting the Default Navigation Model."

- Current navigation model (state)—This model is the one used to navigate to the current view and, if it is not set, returns the default navigation model. Your application may contain multiple navigation models. The EL expression to retrieve the current navigation model is:

  ```
  #{navigationContext.currentNavigationModel}
  ```

  Using this expression enables you to have a single value within a page or page template (for example, for displaying breadcrumbs) and have it display the correct value without having to select a specific navigation model.

- Direct navigation model access (direct reference)—You can also select a specific navigation model by passing in the path to the XML definition of the model. The EL expression to retrieve a specific navigation model is:

  ```
  #{navigationContext.navigationModel['modelPath=path']}
  ```

where *path* is the path to the navigation model definition file, for example:

```
#{navigationContext.navigationModel['modelPath=/oracle/webcenter/portalapp/navi
gations/myNavigation']}
```

Note: You do not need to include the `.xml` file name extension.

Resource Navigation

Use these ELs for core bean operations for binding the navigation model to the UI component's `actionListener` attribute. For example:

```
#{navigationContext.processAction}
```

Examples

Example 10–4 creates a simple tree UI using the Navigation Context to access the current navigation model and render the tree using `<af:outputText/>`.

Example 10–4 Simple Tree Navigation UI

```
<af:tree var="node"
    value="#{navigationContext.currentNavigationModel.treeModel['startNode=/,
    includeStartNode=true,
    depth=1']}"
    id="t1">
  <f:facet name="nodeStamp">
    <af:outputText value="#{node.title}" id="ot1"/>
  </f:facet>
</af:tree>
```

Example 10–5 uses the Navigation Context's `processAction` listener to handle navigation for an ADF `commandImageLink` component, passing in the current node as the parameter called *node* as an attribute to the `actionListener`.

Example 10–5 Binding the Navigation Model to the UI Component

```
<af:tree var="node"
    value="#{navigationContext.currentNavigationModel.treeModel['startNode=/,
           includeStartNode=true,
           depth=1']}"
    id="t1">
  <f:facet name="nodeStamp">
    <af:commandImageLink text="#{node.title}"
        id="sm_c1b"
        actionListener="#{navigationContext.processAction}"
        inlineStyle="#{node.selected ? 'font-weight:bold;' : ''}">
      <f:attribute name="node" value="#{node}"/>
    </af:commandImageLink>
  </f:facet>
</af:tree>
```

10.11.1.2 Introduction to the Navigation Runtime Model

The Navigation Runtime Model exposes the underlying XML definition as runtime models, as well as providing direct access to individual nodes. The runtime models take into account such factors as security and visibility to produce a session-specific representation that can be bound to UI objects.

Note: Note the difference between the *navigation model* that you create to define the content, structure, and metadata of the navigation and the *navigation **runtime** model* that determines how the navigation model behaves at runtime.

You can access the whole model by using the default runtime model (`defaultTreeModel`, `defaultListModel`, `defaultMenuModel`, and `defaultSiteMap`), or access a specific sub-tree using the various parameters when creating the runtime model. For example:

```
#{navigationContext.defaultNavigationModel.menuModel['startNode=home,
    includeStartNode=false, depth=2']}
```

For more information about the underlying ADF Faces MenuModel, TreeModel, and ListModel, see the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

Model Access

You can create the following runtime models based on the underlying navigation model:

- UI Models
  - Tree model

    ```
    #{navigationContext.defaultNavigationModel.defaultTreeModel}
    #{navigationContext.defaultNavigationModel.treeModel['parameters']}
    ```

  - Menu model

    ```
    #{navigationContext.defaultNavigationModel.defaultMenuModel}
    #{navigationContext.defaultNavigationModel.menuModel['parameters']}
    ```

  - List model

    ```
    #{navigationContext.defaultNavigationModel.defaultListModel}
    #{navigationContext.defaultNavigationModel.listModel['parameters']}
    ```

- Search Engine Model
  - Sitemap

    ```
    #{navigationContext.defaultNavigationModel.defaultSiteMap}
    #{navigationContext.defaultNavigationModel.siteMap['parameters']}
    ```

Resource (or Node) Access

You can access specific nodes within the navigation model using the follow EL expressions:

- `#{navigationContext.defaultNavigationModel.currentSelection}`
- `#{navigationContext.defaultNavigationModel.rootNode}`
- `#{navigationContext.defaultNavigationModel.node['path']}`

Examples

Example 10–6 renders the current navigation model's menu model as a breadcrumb.

Example 10–6 Rendering the Navigation Model as a Menu Model

```
<af:breadCrumbs id="bc1"
    var="node"
    value="#{navigationContext.currentNavigationModel.defaultMenuModel}">
  <f:facet name="nodeStamp">
    <af:commandNavigationItem id="cni1"
        text="#{node.title}"
        actionListener="#{navigationContext.processAction}"
        partialSubmit="true">
      <f:attribute name="node" value="#{node}"/>
    </af:commandNavigationItem>
  </f:facet>
</af:breadCrumbs>
```

Example 10–7 produces a Sitemap for the application based on the default navigation model.

Example 10–7 Producing a Sitemap

```
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page"  version="2.1"
    xmlns:f="http://java.sun.com/jsf/core">
  <jsp:directive.page contentType="text/xml;charset=UTF-8" />
  <f:view>
    ${navigationContext.defaultNavigationModel.defaultSiteMap}
  </f:view>
</jsp:root>
```

For more information about Sitemaps, see Section 10.13, "Using a Navigation Model to Create a Sitemap."

10.11.1.3 Introduction to the Navigation Resource

The Navigation Resource provides access to individual properties against each node within the navigation model. These fall into the following categories:

- **Attributes**—Common properties that the user can specify against any navigation element and are used for rendering the node on the page, including:
  - **Title**—The title displayed for the node when the navigation model is rendered at runtime.
  - **AccessKey**—A key mnemonic (single character) that users can enter to access the node without using the mouse.
  - **Description**—A description of the node.
  - **IconURI**—An icon to visually represent the node. This is displayed next to the Title when the navigation model is rendered at runtime.
  - **Subject**—Keywords to facilitate searching of the node.
  - **Target**—The location on the container page where the node is displayed when it is selected, either in the same browser window (`_self`), a new window (`_blank`), or a popup (`_popup`), or any other location supported by the navigation UI.
  - **ToolTip**—Text that displays to provide additional information about the node when users hover the mouse over the Title.
  - **Modified**—The date of the last modification of the node. This attribute is used for Sitemap creation.

  - **ChangeFrequency**—How frequently the node is likely to change: always, hourly, daily, weekly, monthly, yearly, never. This attribute is used for Sitemap creation.
  - **Significance**—The priority of this node relative to other nodes in the navigation model, within the range 0.0 to 1.0. This attribute is used for Sitemap creation.
  - **ExternalId**—An ID to enable a direct reference to any node in the navigation model from a static link in the page.

- **Parameters**—User-defined properties that are specific to each node. These are name/value pairs and can contain any value.
- **State**—Built-in properties that you can query and use to navigate to the node. For example:
  - Type of node, for example, folder or separator
  - Whether the node is navigable
  - The path to the node
  - Parent, child, or sibling node access
  - Whether the node is the currently selected node within the navigation model or on the selected node's path

  For a complete list, see Section G.7, "ELs Related to Navigation."

Examples

Example 10–8 renders an ADF `commandImageLink` component with various attributes.

Example 10–8 Rendering a commandImageLink with Attributes

```
<af:commandImageLink text="#{node.title}"
    id="cil1"
    actionListener="#{navigationContext.processAction}"
    shortDesc="#{node.attributes['ToolTip']}"
    accessKey="#{node.attributes['AccessKey']}"
    inlineStyle="#{node.selected ? 'font-weight:bold;' : ''}">
  <f:attribute name="node" value="#{node}"/>
</af:commandImageLink>
```

Example 10–9 accesses values passed from a node to the corresponding page through parameters.

Example 10–9 Passing Node Values to Page Parameters

`homePageDef.xml`

```
<pageDefinition xmlns="http://xmlns.oracle.com/adfm/uimodel"
    version="11.1.1.55.96" id="homePageDef"
    Package="oracle.webcenter.portalapp.pages">
  <parameters>
    <parameter id="NavigationParameter"
        value="#{navigationContext.currentNavigationModel.currentSelection.parameters
            ['MyNavParam']}"/>
  </parameters>
```

Example 10–10 conditionally displays breadcrumb links based on whether you can navigate to the node. It also bases the UI component on the type of the node.

Example 10–10 Conditionally Displaying Navigation Nodes

```
<af:breadCrumbs id="bc1"
                var="node"
                value="#{navigationContext.currentNavigationModel.defaultMenuModel}">
  <f:facet name="nodeStamp">
    <af:switcher facetName="#{node.navigable}" id="swn1">
      <f:facet name="true">
        <af:commandNavigationItem id="cni1" text="#{node.title}"
                                  actionListener="#{navigationContext.processAction}"
                                  partialSubmit="true">
          <f:attribute name="node" value="#{node}"/>
        </af:commandNavigationItem>
      </f:facet>
      <f:facet name="false">
        <af:outputText value="#{node.title}" rendered="#{!node.separator}" id="ot3"/>
      </f:facet>
    </af:switcher>
  </f:facet>
</af:breadCrumbs>
```

10.11.1.4 How to Render the Navigation Model as a List of Links

One common way to visualize a portal's navigation is as a list of links. Clicking a link navigates to the resource associated with it.

Example 10–11 retrieves the list model for the current navigation model and renders it vertically on the page. The code iterates through the navigation model, binding each node in turn to an ADF `commandImageLink` component. If a node contains children, a second iterator renders those children on the page. If a node is not navigable, it is not rendered as a link. The currently selected node is displayed in bold.

Example 10–11 Navigation as a List of Links

```
<af:panelGroupLayout id="pgl1" layout="vertical">
  <af:spacer id="sp1" height="20px"/>
  <af:iterator id="i1"
               value="#{navigationContext.currentNavigationModel.listModel['startNode=/,
                     includeStartNode=false']}"
               var="node">
    <af:panelGroupLayout layout="vertical">
      <af:commandImageLink id="cil2" text="#{node.title}"
                           actionListener="#{navigationContext.processAction}"
                           action="pprnav"
                           icon="#{node.attributes[pageFlowScope.tnBean.iconKey]}"
                           disabled="#{not node.navigable}"
                           inlineStyle="#{node.onSelectedPath ? 'font-weight:bold;' : ''}">
        <f:attribute name="node" value="#{node}"/>
      </af:commandImageLink>
      <af:iterator id="i2" value="#{node.children}" var="node2">
        <af:panelList id="pl1">
          <af:commandImageLink id="cil3" text="#{node2.title}"
                               actionListener="#{navigationContext.processAction}"
                               action="pprnav"
                               icon="#{node2.attributes[pageFlowScope.tnBean.iconKey]}"
                               disabled="#{not node2.navigable}"
                               inlineStyle="#{node2.onSelectedPath ? 'font-weight:bold;' : ''}">
            <f:attribute name="node" value="#{node2}"/>
          </af:commandImageLink>
        </af:panelList>
      </af:iterator>
    </af:panelGroupLayout>
  </af:iterator>
  <af:spacer id="sp3" height="20px"/>
</af:panelGroupLayout>
```

10.11.1.5 How to Render the Navigation Model as a Tree

Another common way to visualize portal navigation is as a tree structure. A navigation tree is typically listed down the side of the page, so it is a useful way of displaying the entire navigation hierarchy. Users can navigate immediately to any node in the navigation. The advantage of using a tree structure over a simple list of links, is that users can expand and collapse the different nodes of the navigation model.

To include a tree structure in your page or page template, you can bind the ADF Faces `tree` navigation component to your navigation model. Example 10–12 shows how to do this. In the example, the second level of the navigation hierarchy is collapsed by default, but an icon enables users to expand a node to show its children.

Example 10–12 Navigation as a Tree

```
<af:panelGroupLayout id="pgl1" layout="vertical">
  <af:spacer id="sp2" height="20px"/>
  <af:tree id="tree1" var="node" initiallyExpanded="true"
          value="#{navigationContext.currentNavigationModel.treeModel['includeStartNode=false']}">
    <f:facet name="nodeStamp">
      <af:commandImageLink id="cil2" text="#{node.title}"
                           actionListener="#{navigationContext.processAction}"
                           action="pprnav"
                           icon="#{node.attributes[pageFlowScope.tnBean.iconKey]}"
                           disabled="#{not node.navigable}"
                           inlineStyle="#{node.onSelectedPath ? 'font-weight:bold;' : ''}">
        <f:attribute name="node" value="#{node}"/>
      </af:commandImageLink>
    </f:facet>
  </af:tree>
  <af:spacer id="sp3" height="20px"/>
</af:panelGroupLayout>
```

10.11.1.6 How to Render the Navigation Model as a Three-Level Menu

You can also render your navigation as a menu. In a menu, the top level of navigation is displayed. When the user hovers the mouse over a particular node, if that node has children, they are displayed as a popup menu.

Figure 10–13 retrieves the list model for the current navigation model and renders it vertically on the page. The code iterates through the navigation model. If a node contains children, then a second iterator iterates through those children. Nodes without children are rendered as menu items. In the second level of the navigation model, if any of the nodes have children, then a third iterator is executed. Again, nodes without children are rendered as menu items. At the third level of the navigation mode, nodes are rendered as menu items. Non-navigable nodes are not rendered as links. The currently selected node is displayed in bold.

Example 10–13 Navigation as a Menu

```
<af:panelGroupLayout id="pgl1" layout="vertical">
  <af:spacer id="sp1" height="20px"/>
  <af:menuBar id="mb1">
```

```
    <af:iterator id="i1"
                 value="#{navigationContext.currentNavigationModel.listModel['startNode=/,
                       includeStartNode=false']}"
                 var="node">
      <af:switcher id="s1"
                   facetName="#{empty node.children ? 'leafNode' : 'parentNode'}">
        <f:facet name="parentNode">
          <af:menu id="m1" text="#{node.title}"
                   inlineStyle="#{node.onSelectedPath ? 'font-weight:bold;' : ''}">
            <af:iterator id="i2" value="#{node.children}"
                         var="node2">
              <af:switcher id="s2"
                           facetName="#{empty node2.children ? 'leafNode' : 'parentNode'}">
                <f:facet name="parentNode">
                  <af:menu id="m2" text="#{node2.title}"
                           inlineStyle="#{node2.onSelectedPath ? 'font-weight:bold;' : ''}">
                    <af:iterator id="i3" value="#{node2.children}"
                                 var="node3">
                      <af:commandMenuItem id="cml3"
                                          text="#{node3.title}"
                                          actionListener="#{navigationContext.processAction}"
                                          action="pprnav"
                                          icon="#{node3.attributes[pageFlowScope.tnBean.iconKey]}"
                                          disabled="#{not node3.navigable}"
                                          inlineStyle="#{node3.onSelectedPath ?
                                                      'font-weight:bold;' : ''}">
                        <f:attribute name="node" value="#{node3}"/>
                      </af:commandMenuItem>
                    </af:iterator>
                  </af:menu>
                </f:facet>
                <f:facet name="leafNode">
                  <af:commandMenuItem id="cml1"
                                      text="#{node2.title}"
                                      actionListener="#{navigationContext.processAction}"
                                      action="pprnav"
                                      icon="#{node2.attributes[pageFlowScope.tnBean.iconKey]}"
                                      disabled="#{not node2.navigable}"
                                      inlineStyle="#{node2.onSelectedPath ?
                                                  'font-weight:bold;' : ''}">
                    <f:attribute name="node" value="#{node2}"/>
                  </af:commandMenuItem>
                </f:facet>
              </af:switcher>
            </af:iterator>
          </af:menu>
        </f:facet>
        <f:facet name="leafNode">
          <af:commandMenuItem id="cml2" text="#{node.title}"
                              actionListener="#{navigationContext.processAction}"
                              action="pprnav"
                              icon="#{node.attributes[pageFlowScope.tnBean.iconKey]}"
                              disabled="#{not node.navigable}"
                              inlineStyle="#{node.onSelectedPath ? 'font-weight:bold;' : ''}">
            <f:attribute name="node" value="#{node}"/>
          </af:commandMenuItem>
        </f:facet>
      </af:switcher>
    </af:iterator>
  </af:menuBar>
  <af:spacer id="sp3" height="20px"/>
</af:panelGroupLayout>
```

10.11.1.7 How to Render the Navigation Model as Breadcrumbs

To provide users with a quick way of orientating themselves within the portal navigation, you can provide a trail of breadcrumbs on the page. Breadcrumbs show the current location in the portal and the path taken through the navigation to get there. Users can then quickly return to any point along that path. Breadcrumbs are typically used on a page in addition to other forms of navigation.

To include breadcrumbs in your page or page template, you can bind the ADF Faces `breadCrumbs` navigation component to your navigation model. Example 10–14 shows how to do this.

Example 10–14 Navigation as Breadcrumbs

```
<af:panelGroupLayout id="pgl1" layout="vertical">
  <af:spacer id="sp1" height="20px"/>
  <af:breadCrumbs id="bc1" var="node"
                  value="#{navigationContext.currentNavigationModel.menuModel[
                        'includeStartNode=false']}">
    <f:facet name="nodeStamp">
      <af:commandNavigationItem id="cil1" text="#{node.title}"
                                actionListener="#{navigationContext.processAction}"
                                action="pprnav"
                                icon="#{node.attributes[pageFlowScope.tnBean.iconKey]}"
                                disabled="#{not node.navigable}">
        <f:attribute name="node" value="#{node}"/>
      </af:commandNavigationItem>
    </f:facet>
  </af:breadCrumbs>
  <af:spacer id="sp2" height="20px"/>
</af:panelGroupLayout>
```

10.11.1.8 How to Render Master-Detail Navigation

Often portals provide a "master-detail" navigation visualization, for example, as tabs along the top of the page, with each tab having additional navigation provided as a tree structure along the side of the page.

The master-detail navigation in Example 10–15 uses the same navigation model for the master and detail navigation. The master navigation renders the top level of the navigation model as a list of links along the top of the page. The detail navigation renders the children of the currently selected top level node as a tree.

> **Tip:** For the `c:set` tag to work correctly in the following examples, you must include the JSTL library by adding the following to the `jsp:root` tag:
>
> ```
> xmlns:c="http://java.sun.com/jsp/jstl/core"
> ```

Example 10–15 Master-Detail Navigation Using a Single Navigation Model

```
<af:panelGroupLayout id="pgl1" layout="vertical">
  <af:spacer id="sp1" height="20px"/>
  <!-- Master -->
  <af:navigationPane id="np1" var="node" hint="bar" level="1"
                     value="#{navigationContext.navigationModel[
                           'modelPath=/oracle/webcenter/portalapp/navigations/master-detail']
                           .defaultMenuModel}">
```

```
    <f:facet name="nodeStamp">
      <af:commandNavigationItem id="cil1" text="#{node.title}"
                                actionListener="#{navigationContext.processAction}"
                                action="pprnav"
                                icon="#{node.attributes[pageFlowScope.tnBean.iconKey]}"
                                disabled="#{not node.navigable}"
                                inlineStyle="#{node.onSelectedPath ? 'font-weight:bold;' : ''}">

        <f:attribute name="node" value="#{node}"/>
      </af:commandNavigationItem>
    </f:facet>
  </af:navigationPane>
  <af:spacer id="sp2" height="20px"/>
  <!-- Setup the parameters for detail query -->
  <c:set value="startNode=/${navigationContext.navigationModel[
             'modelPath=/oracle/webcenter/portalapp/navigations/master-detail']
             .currentSelection.prettyUrlPath[1]}, includeStartNode=false"
         var="currSel" scope="session"/>
  <!-- Detail -->
  <af:tree id="tree1" var="node2" initiallyExpanded="true"
           value="#{navigationContext.navigationModel[
                 'modelPath=/oracle/webcenter/portalapp/navigations/master-detail']
                 .treeModel[currSel]}">
    <f:facet name="nodeStamp">
      <af:commandImageLink id="cil2" text="#{node2.title}"
                           actionListener="#{navigationContext.processAction}"
                           action="pprnav"
                           icon="#{node2.attributes[pageFlowScope.tnBean.iconKey]}"
                           disabled="#{not node2.navigable}"
                           inlineStyle="#{node2.onSelectedPath ? 'font-weight:bold;' : ''}">
        <f:attribute name="node" value="#{node2}"/>
      </af:commandImageLink>
    </f:facet>
  </af:tree>
  <af:spacer id="sp3" height="20px"/>
</af:panelGroupLayout>
```

The example above can also be written to use two different navigation models, one for the master navigation, and one for the detail navigation. Example 10–16 shows how.

Example 10–16 Master-Detail Navigation Using Multiple Navigation Models

```
<af:panelGroupLayout id="pgl1" layout="vertical">
  <af:spacer id="sp1" height="20px"/>
  <!-- Master -->
  <af:navigationPane id="np1" var="node" hint="bar" level="1"
                     value="#{navigationContext.navigationModel[
                           'modelPath=/oracle/webcenter/portalapp/navigations/master']
                           .defaultMenuModel}">
    <f:facet name="nodeStamp">
      <af:commandNavigationItem id="cil1" text="#{node.title}"
                                actionListener="#{navigationContext.processAction}"
                                action="pprnav"
                                icon="#{node.attributes[pageFlowScope.tnBean.iconKey]}"
                                disabled="#{not node.navigable}"
                                inlineStyle="#{node.onSelectedPath ? 'font-weight:bold;' : ''}">
        <f:attribute name="node" value="#{node}"/>
      </af:commandNavigationItem>
    </f:facet>
  </af:navigationPane>
  <af:spacer id="sp2" height="20px"/>
  <!-- Setup the parameters for detail query -->
  <c:set value="startNode=/${navigationContext.navigationModel[
              'modelPath=/oracle/webcenter/portalapp/navigations/master']
              .currentSelection.prettyUrlPath[1]}, includeStartNode=false"
        var="currSel" scope="session"/>
  <!-- Detail -->
  <af:tree id="tree1" var="node2" initiallyExpanded="true"
                     value="#{navigationContext.navigationModel[
                           'modelPath=/oracle/webcenter/portalapp/navigations/master']
                           .treeModel[currSel]}">
    <f:facet name="nodeStamp">
      <af:commandImageLink id="cil2" text="#{node2.title}"
                          actionListener="#{navigationContext.processAction}"
                          action="pprnav"
                          icon="#{node2.attributes[pageFlowScope.tnBean.iconKey]}"
                          disabled="#{not node2.navigable}"
                          inlineStyle="#{node2.onSelectedPath ? 'font-weight:bold;' : ''}">
        <f:attribute name="node" value="#{node2}"/>
      </af:commandImageLink>
    </f:facet>
  </af:tree>
  <af:spacer id="sp3" height="20px"/>
</af:panelGroupLayout>
```

10.11.2 Using the Navigation REST APIs

Oracle WebCenter Portal provides REST APIs to access the navigation model of your application. Use the navigation REST APIs to access the interface used to visualize the navigation model. You would typically use REST when creating Rich Internet Applications that are client-side scripted and require the ability to interact with data from a server-side application. For example, the Oracle WebCenter Portal iPhone App uses REST APIs to interact with a Portal Framework application.

For an introduction to the REST APIs, see Chapter 53, "Using Oracle WebCenter Portal REST APIs."

To access the navigation REST APIs, construct a URL as follows:

```
http://host:port/<ApplicationContextRoot>/api/navigations/default-navigation-model
```

where host and *port* are the *hostname* and port number for the server where the portal is running, and *<ApplicationContextRoot>* is the context root for the portal application. For example:

```
http://localhost:7101/MyPortalApplication-Portal-context-root/api/navigations/defa
ult-navigation-model
```

The response to this request provides the entry point URI (`href`) for the navigation REST APIs, identified by the link element with the following `resourceType`:

```
urn:oracle:webcenter:navigations
```

Sending a `GET` request to this entry point URI returns a list of navigation models within the application, for example:

```
<sitestructure>
  ...
  <navigation-list>
    oracle/webcenter/siteresources/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/
    navigations/default-navigation
  </navigation-list>
  <navigation-list>
    oracle/webcenter/siteresources/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/
    navigations/admin-navigation
  </navigation-list>
  <navigation-list>
    oracle/webcenter/siteresources/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/
    navigations/myNavigation
  </navigation-list>
  ...
</sitestructure>
```

Using this information, you can start to retrieve information about specific navigation models and the nodes within them, using the URIs listed in Table 10–5. The URIs shown in Table 10–5 can be appended to the `http://host:port/<ApplicationContextRoot>` part of the URL to access the desired REST endpoint.

Table 10–5 REST URI Model for Navigation

REST URI	Returns
`.../api/navigations`	All navigation models in the application.
`.../api/navigations/default-navigation-model`	The properties of the default navigation model.
`.../api/navigations/`*`pathToModel`*`/`*`modelId`*	The properties of the specified navigation model (*`modelId`*).
`.../api/navigations/`*`pathToModel`*`/`*`modelId`*`/resources`	All root resources under the specified navigation model (*`modelId`*).
`.../api/navigations/`*`pathToModel`*`/`*`modelId`*`/resources/`*`pathToResource`*`/`*`resourceId`*	The specified resource (*`resourceID`*) from the specified navigation model (*`modelId`*).
`...api/navigations/`*`pathToModel`*`/`*`modelId`*`/resources/`*`pathToResource`*`/`*`resourceId`*`/children`	A navigation tree listing all the children of the specified resource (*`resourceId`*) from the specified navigation model (*`modelId`*).
`.../api/navigations/`*`pathToModel`*`/`*`modelId`*`/resources/`*`pathToResource`*`/`*`resourceId`*`/children?depth=`*`dep`*	A navigation tree listing the children of the specified resource (*`resourceId`*) from the specified navigation model (*`modelId`*) up to a specified level (*`dep`*).

Each navigable node has a `prettyURL` element that you can use to drill down further in the navigation model hierarchy.

10.11.3 Tips for Visualizing Portal Navigation

When visualizing portal navigation model, consider the following:

- Use ADF Faces layout components to organize your page or page template, rather than HTML `div` and `span` tags. For more information, see the "Organizing Content on Web Pages" chapter in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.
- If your Portal Framework application is public facing, or you want to enable search engine optimization, add navigation visualization using the `af:goLink` component in conjunction with the `goLinkPrettyUrl` method. You can also use other variations, such as `goButton`, `goImageLink`, and `goMenuItem`.

  For example:

```
<af.goLink
  destination="#{navigationContext.defaultNavigationModel.node['pagePath']
              .goLinkPrettyUrl"}
  text="mylink" />
```

- Manage styling, decorative images, and geometry using skins.
- Select the page template using the default page template setting in `adf-config.xml` or using the **Render URL in Page Template** option for individual navigation links.
- If you use the `af:commandLink` component, or one of its variations such as `commandButton`; `commandMenuItem`; and so on, to visualize your portal navigation, you must use the following `web.xml` parameters to force the ADF framework to redirect instead of using PPR navigation:

  ```
  oracle.adf.view.rich.pprNavigation.OPTIONS
  oracle.webcenter.navigationframework.REDIRECT_OPTIONS
  ```

  For more information, see Section 10.12, "Setting Context Parameters."

For more information, see the "Oracle WebCenter & ADF Architecture Team" blog.

10.12 Setting Context Parameters

If you want to use the af.CommandLink component to visualize your portal navigation, you must set the `oracle.adf.view.rich.pprNavigation.OPTIONS` context parameter in the `web.xml` file to force the ADF framework to redirect instead of using partial page refresh (PPR).

If your application does not use PPR, the URL in the browser changes whenever a user navigates to a node in the navigation model. However, the URL shown by the browser does not reflect the current page; it shows the URL of the last page shown.

To enable the browser to display the URL of the current page, you can set the `oracle.webcenter.navigationframework.REDIRECT_OPTIONS` context parameter in the `web.xml` file.

> **Note:** Setting the `oracle.webcenter.navigationframework.REDIRECT_OPTIONS` context parameter affects performance by adding an extra request/response for every navigation.

To set context parameters:

1. In the Application Navigator, right-click the **web.xml** file and choose **Open**.
2. In the Overview Editor, expand the Context Initialization Parameters section.
3. Click the **Create Context Initialization Parameter** icon.
4. In the Name field, enter oracle.adf.view.rich.pprNavigation.OPTIONS.
5. In the Value field, enter off.

   This adds the following to the web.xml file:

   ```
   <context-param>
     <param-name>oracle.adf.view.rich.pprNavigation.OPTIONS</param-name>
     <param-value>off</param-value>
   </context-param>
   ```

6. In the **Name** field, enter `oracle.webcenter.navigationframework.REDIRECT_OPTIONS`.

7. In the **Value** field, enter `toPrettyURL`.

   This adds the following to the `web.xml` file:

   ```
   <context-param>
    <param-name>oracle.webcenter.navigationframework.REDIRECT_OPTIONS</param-name>
    <param-value>toPrettyURL</param-value>
   </context-param>
   ```

8. Save the `web.xml` file.

10.13 Using a Navigation Model to Create a Sitemap

When a search engine crawls a web site, it parses the HTML for standard links (for example, `<a href="url">text</a>`). However, ADF-based web sites generate links as JavaScript, which when executed in a browser, cause the page change or navigation. These JavaScript links cannot be interpreted by search engines.

Some popular search engines, such as Google and Bing, support Sitemaps. A Sitemap is an XML file that lists URLs for a site along with additional metadata about each URL (for example, when it was last updated, how often it usually changes, and how important it is relative to other URLs in the site), so that search engines can more intelligently crawl the site. By submitting a Sitemap to a search engine, or by referencing the Sitemap in your `robots.txt` file, you can feed a list of pages into the search engine for indexing.

For more information about Sitemaps, go to:

`http://sitemaps.org/`

Portal Framework applications can provide a Sitemap URL that you can register with search engines to get them to index your set of pages. If the user-agent of the search engine matches one supported by ADF, such as Google's googlebot or Microsoft's bingbot, the HTML is returned for the request instead of the JavaScript.

You can create a Sitemap for your application based on a navigation model, as shown in Example 10–17.

Example 10–17 Creating a Sitemap

```
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          Xmlns:f=http://java.sun.com/jsf/core">
  <jsp:directive.page contentType="text/xml;charset=UTF-8" />
  <f:view>
    ${navigationContext.defaultNavigationModel.defaultSiteMap}
  </f:view>
</jsp:root>
```

10.14 Switching the Locale Dynamically

The WebCenter Navigation Model supports localization of certain textual strings such as `Title`. The setting of the resource bundle based strings is configured through the Navigation Model editor. For more information see, Section 14.3.9, "How to Set Display Options for a Resource Catalog or Resource."

Once the strings have been defined and the application configured with the supporting Locales, you can view the changes when switching the browser language settings. This is easy to implement, however, if the requirement is to be able to dynamically switch the Locale through a user interaction such as a drop-down list, then you must create custom code to support this requirement. In this section, one possible solution for this requirement is presented. This section assumes that the `face-config.xml` file has already been modified to support the different Locales for the application. For more information see, Chapter 75, "Building Multilanguage Portals."

Example Solution

This example solution contains an ADF `af:selectOneChoice` (SOC) component, which will be responsible for enabling the user interaction for the dynamic switching of the Locale. The SOC will be wired to a managed bean that will serve two important functions: one function is to store the users Locale selection, and the other function is to provide the `valueChangeEvent` listener method to enable the setting of the new Locale. In this example, the new Locale is stored in a variable and accessed by the `valueChangeEvent`.

```
Locale preferredLocale

public void listChanged(ValueChangeEvent valueChangeEvent) {
   String locale = valueChangeEvent.getNewValue().toString();
   changeLocale(locale);
   setCurrentLocale(locale);
  setPreferredLocale(FacesContext.getCurrentInstance().getViewRoot().getLocale());
}
```

This method also calls the `changeLocale` method, which is responsible for updating the current view:

```
private void changeLocale(String lang) {
   Locale newLocale = new Locale(lang);
   FacesContext fctx = FacesContext.getCurrentInstance();
   fctx.getViewRoot().setLocale(newLocale);
   resetPage();
}
```

This method then finishes the Locale change by calling `resetPage()`:

```
public void resetPage() {
   FacesContext context = FacesContext.getCurrentInstance();
   UIViewRoot root = context.getViewRoot();
   _returnViewId = root.getViewId();
   if (_returnViewId == null)
      return;
   ExternalContext external = context.getExternalContext();
   Application application = context.getApplication();
   ViewHandler viewHandler = application.getViewHandler();
   String actionURL = viewHandler.getActionURL(context, _returnViewId);
   actionURL = external.encodeActionURL(actionURL);
   try {
      external.redirect(actionURL);
   } catch (IOException e) {
      String message = e.getMessage();
      // to do ...
   }
}
```

Now that the code is in place to handle the switching, the next step is to enable the dynamic switching. This behavior can be achieved by implementing a custom Phase

Listener to get the new Locale from the managed bean, then enable `UIViewRoot` to be set with this Locale. The code for handling this will be in the overridden `beforePhase()` method.

> **Note:** Example code has not been optimized and can contain performance contentions.

The code using `SiteStructureContext` is the focus in this example, and is necessary to ensure that the navigation model is updated. Otherwise, the model (Locale) can only be updated by the browser settings.

```
public void beforePhase(PagePhaseEvent pagePhaseEvent) {
   Integer phase = pagePhaseEvent.getPhaseId();
   if (phase.equals(ADFLifecycle.PREPARE_MODEL_ID)) {
   FacesContext fctx = FacesContext.getCurrentInstance();
   ChangeLocale changeLocale =
      ChangeLocale)fctx.getApplication().evaluateExpressionGet
      (fctx,"#{ChangeLocale}", Object.class);
   Locale preferredLocale = changeLocale.getPreferredLocale();
   UIViewRoot uiViewRoot = fctx.getCurrentInstance().getViewRoot();
   if (preferredLocale == null) {
       changeLocale.setPreferredLocale(uiViewRoot.getLocale());
   } else {
       uiViewRoot.setLocale(preferredLocale);
   }
   try {
      SiteStructureContext ctx = SiteStructureContext.getInstance();
      SiteStructure model = ctx.getDefaultSiteStructure();
      model.invalidateCache();
    } catch (ResourceNotFoundException rnfe) {
        rnfe.printStackTrace();
    }
 }
}
```

11 Developing Page Templates

This chapter describes how to use Oracle JDeveloper to design and develop page templates for portal pages displayed in WebCenter Portal Framework applications and portals built with WebCenter Portal (Portal Builder).

This chapter includes the following topics:

11.1 Introduction to Developing Page Templates

Page templates define how individual pages and groups of pages display on a user's screen, and help to ensure that the pages in a portal are consistent in structure and layout. If you change a page template, then all pages that reference that template automatically inherit the changes.

> **See Also:** For general information about page templates, see the "Using Page Templates" section in *Web User Interface Developer's Guide for Oracle Application Development Framework*.

Oracle recommends that you use JDeveloper to develop page templates for both Portal Framework applications and portals built with WebCenter Portal (Portal Builder). In JDeveloper, you can build fully functional page templates from scratch or you can refine and further develop existing page templates to suit your particular requirements. You can also develop page templates in Portal Builder, but the editing capabilities are limited.

When fully developed, you can upload page templates directly to WebCenter Portal (the portal server) for immediate use or for testing. Alternatively, you can export the page template to a file and upload the page template to WebCenter Portal later on through Portal Builder.

You can develop page templates in the following ways:

- Build page templates from scratch, as described in Section 11.3, "Creating a Page Template."
- Download out-of-the-box page templates provided with WebCenter Portal (Portal Builder), and modify them, as described in Section 11.4, "Editing a Page Template."
- Leverage the out-of-the-box page templates provided with JDeveloper, as described in Section 11.1.4, "Understanding the Built-In Page Templates in a WebCenter Portal Framework Application" and Section 11.4, "Editing a Page Template."

This section includes the following topics:

- Section 11.1.1, "Understanding Page Template Structure"
- Section 11.1.2, "Understanding Page Template Layout"
- Section 11.1.3, "Understanding Page Template Layout Components"
- Section 11.1.4, "Understanding the Built-In Page Templates in a WebCenter Portal Framework Application"

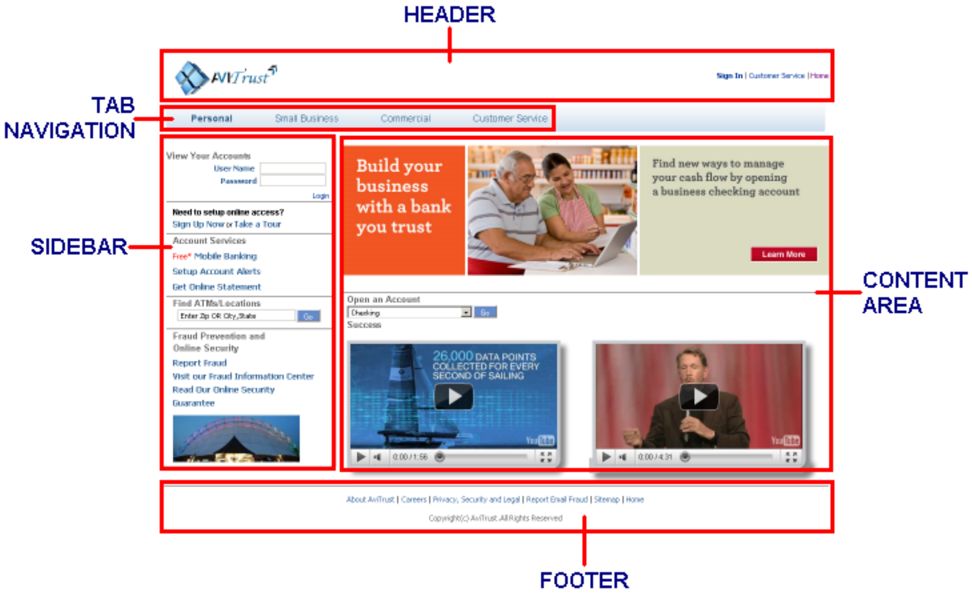
11.1.1 Understanding Page Template Structure

Typical elements of a page template include:

- Header, content area (different in each page), and footer. The header and footer commonly include brand-specific elements. For example, a header usually includes a logo and possibly a slogan, and a footer usually includes contact and copyright information.
- Navigation. A page template can expose the navigation for a portal in many ways. For example, on a mobile device, portal navigation may be shown as a popup or slide in/out. On a desktop browser, portal navigation is typically shown along the top of the page, or down the side of the page.
- Branding elements. For example, a page template my include a company logo, slogan, or copyright message.
- Links and actions. For example, a log in/log out link, drop-down menus, or global links (such as links to send a mail message to the web administrator or to display a privacy statement).
- Conditional elements. For example, some elements on the page might differ depending on whether the user is public or authenticated or depending on the user's role and privileges.

Figure 11–1 shows a sample application based on a page template that illustrates these elements.

Figure 11–1 Sample Portal that Uses a Page Template


HEADER
TAB NAVIGATION
SIDEBAR
CONTENT AREA
FOOTER
AViTrust
Sign In | Customer Service | Home
Personal
Small Business
Commercial
Customer Service
View Your Accounts
User Name
Password
Login
Need to setup online access?
Sign Up Now or Take a Tour
Account Services
Free* Mobile Banking
Setup Account Alerts
Get Online Statement
Find ATMs/Locations
Go
Fraud Prevention and Online Security
Report Fraud
Visit our Fraud Information Center
Read Our Online Security Guarantee
Build your business with a bank you trust
Find new ways to manage your cash flow by opening a business checking account
Learn More
Open an Account
Checking
Success
26,000 DATA POINTS COLLECTED FOR EVERY SECOND OF SAILING
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11.1.2 Understanding Page Template Layout

One of the most important aspects of page template design is the layout of components, both elements of the template and page content. There are two basic strategies:

- A *flowing* layout is the most typical layout. Components are arranged side by side or one below the other, displayed using their natural size. When the content of the page extends beyond the size of the browser window, the browser displays scroll bars on the page.
- A *stretching* layout may be a suitable choice when your page content fills a large area, or you want the page content to grow and shrink depending on the size of the browser window. Components are stretched to occupy the available space on the page. For example, a stretching layout may be suitable when a page contains a table or graph that you want to fill up the whole content area, no matter what size it is. Another example is a page that contains an editing area, where you want the editor to be exactly as tall and wide as the space given to the content area. This layout has a region for the page content, and adds scroll bars to the region on the page when the content cannot be contained within the size of the browser window. In other words, individual components display scroll bars (which might mean that you have multiple scroll bars on one page).

  Stretching enables you to maximize the usage of the viewable area. You can use tabs, accordions, menus, and popups to expand your viewable area. When scroll bars are added to the page, the navigation area, page header, and page footer remain in view while the content area scrolls.

Because most web sites use a flowing layout, you will probably also want to use a flowing layout as it will likely feel more familiar to your users. However, stretching layouts are good for dashboards and applications that are rich in nature or when you want to mimic a desktop experience. You can also combine flowing and stretching layout on the same page.

Vertical Behavior

Depending on whether your layout is flowing or stretching, the vertical behavior of the page differs as follows:

- **Flowing layout:**
  - The header and/or footer might not always be visible
  - The height of the page is calculated based on the page contents
  - The content is never stretched vertically
  - The browser might display a scroll bar
- **Stretching layout:**
  - The header and footer are always visible
  - The height of the page is determined by the browser window
  - The content is stretched vertically
  - The content area might display a scroll bar

Horizontal Behavior

Depending on whether your layout is flowing or stretching, the horizontal behavior of the page differs as follows:

- **Flowing layout:**
  - If your page includes a side bar (for example, left-side navigation), the side bar might not always be visible
  - The width of the page is calculated based on the components
  - Some components might be stretched to fill up existing space
  - The browser might display a scroll bar
- **Stretching layout:**
  - If your page includes a side bar (for example, left-side navigation), the side bar is always visible
  - The width of the page is determined by the browser window
  - The content is stretched horizontally
  - The content might display a scroll bar

11.1.3 Understanding Page Template Layout Components

The underlying structure of a page template is provided by Oracle Application Development Framework (ADF) layout components. After you decide on the appropriate layout to use for your page template (see Section 11.1.2, "Understanding Page Template Layout"), you will use ADF layout components to create your page template. This is a complex task, and requires knowledge of the ADF components that will achieve the structure and layout you require, and best practices to employ (see Section 11.2, "Best Practices for Developing Page Templates").

See Also:

- For details on what different layout components look like, see the ADF Faces Rich Client demo online tool:

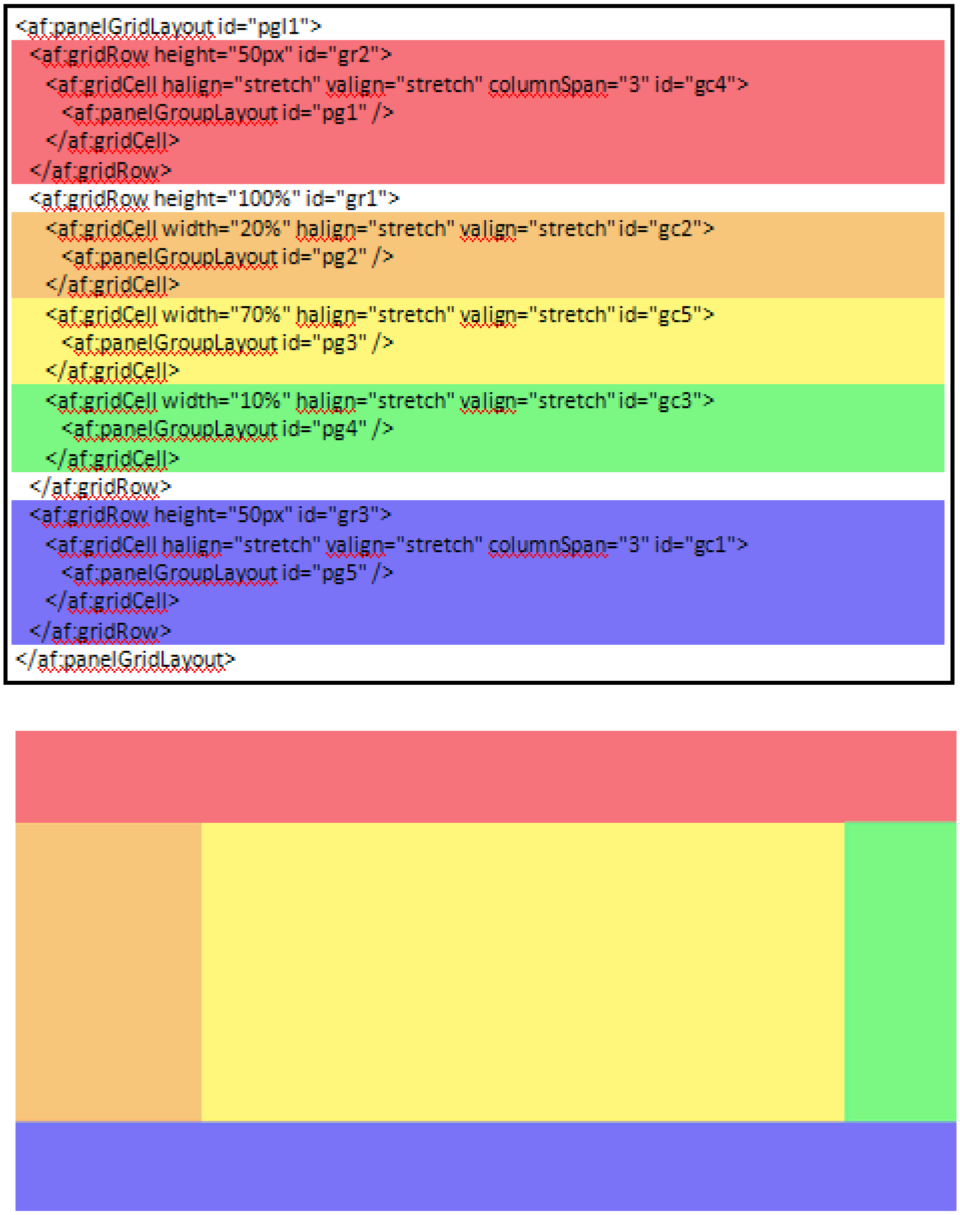
  `http://jdevadf.oracle.com/adf-richclient-demo/faces/visualDesigns/index.jspx`

  In the demo tool, you can select **Page** or **Page Template** from the **View Source** menu to see what layout components and attributes are used to achieve the page structure.
- Section 11.8, "Page Templates Tutorials and Examples"

Figure 11–2 and Figure 11–3 illustrate common ADF components used in a page template layout, showing the page template code followed by the generated layout:

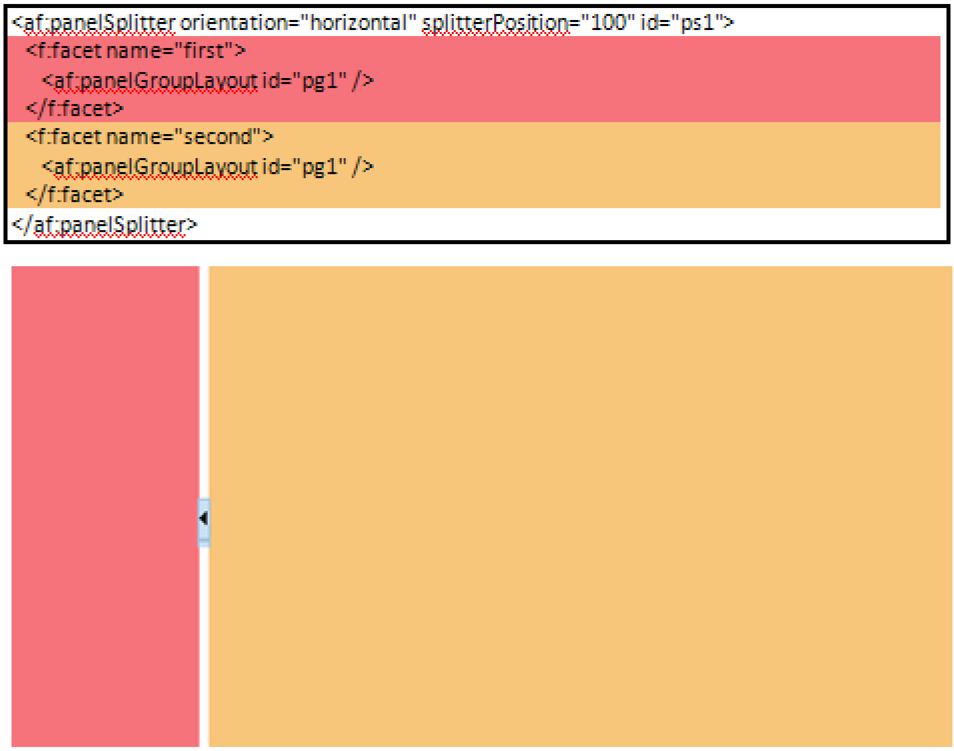
- `af:panelGridLayout`—a versatile layout component that uses rows (`gridRow`) and cells (`gridCell`) to define a structured layout. This component is the preferred general layout component as it offers a small client side footprint while being very flexible in layout capabilities. It allows you to more naturally define areas of the page to match your desired layout in the form of rows and columns. With `panelGridLayout`, you can easily specify fixed or variable column widths (% or pixels), which cannot be done as easily with other layout components. See Figure 11–2.
- `af:panelGroupLayout`—a flowing series of components arranged horizontally, vertically, or in scrollable structures. Typically, `panelGroupLayout` is used with flowing layouts, and with flowing content inside a stretching layout. It provides vertical and horizontal scroll bars if the content does not fit into the available space. See Figure 11–2 and Figure 11–3.
- `af:panelSplitter`—a stretched box divided into two user-modifiable sections. See Figure 11–3.

Figure 11–2 Page Template Code and Generated Stretching Layout: Example 1



```
<af:panelGridLayout id="pgl1">
  <af:gridRow height="50px" id="gr2">
    <af:gridCell halign="stretch" valign="stretch" columnSpan="3" id="gc4">
      <af:panelGroupLayout id="pg1" />
    </af:gridCell>
  </af:gridRow>
  <af:gridRow height="100%" id="gr1">
    <af:gridCell width="20%" halign="stretch" valign="stretch" id="gc2">
      <af:panelGroupLayout id="pg2" />
    </af:gridCell>
    <af:gridCell width="70%" halign="stretch" valign="stretch" id="gc5">
      <af:panelGroupLayout id="pg3" />
    </af:gridCell>
    <af:gridCell width="10%" halign="stretch" valign="stretch" id="gc3">
      <af:panelGroupLayout id="pg4" />
    </af:gridCell>
  </af:gridRow>
  <af:gridRow height="50px" id="gr3">
    <af:gridCell halign="stretch" valign="stretch" columnSpan="3" id="gc1">
      <af:panelGroupLayout id="pg5" />
    </af:gridCell>
  </af:gridRow>
</af:panelGridLayout>
```

Figure 11–3 Page Template Code and Generated Stretching Layout: Example 2



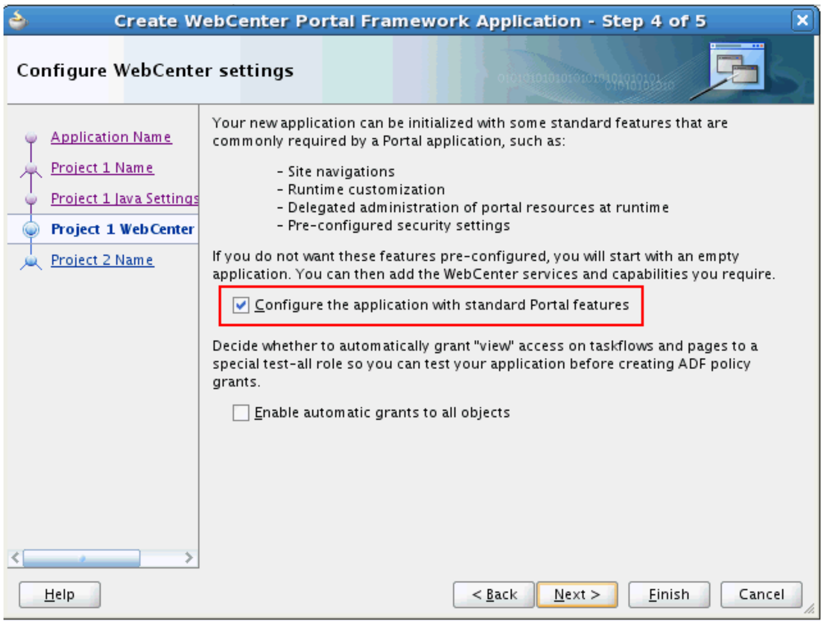
```
<af:panelSplitter orientation="horizontal" splitterPosition="100" id="ps1">
  <f:facet name="first">
    <af:panelGroupLayout id="pg1" />
  </f:facet>
  <f:facet name="second">
    <af:panelGroupLayout id="pg1" />
  </f:facet>
</af:panelSplitter>
```

11.1.4 Understanding the Built-In Page Templates in a WebCenter Portal Framework Application

Note: For information about the built-in page templates, see the "About Built-in Page Templates" section in *Building Portals with Oracle WebCenter Portal.* You can download these page templates and modify them in JDeveloper, as described in Section 11.4, "Editing a Page Template."

When you create a Portal Framework application, and select the **Configure the application with standard Portal features** check box (see Section 6.1, "Creating a New WebCenter Portal Framework Application"), as shown in Figure 11–4, two built-in templates are added to your application: `pageTemplate_globe.jspx` and `pageTemplate_swooshy.jspx`.

Figure 11–4 Create WebCenter Portal Framework Wizard Step 4 of 5



Create WebCenter Portal Framework Application - Step 4 of 5

Configure WebCenter settings

Your new application can be initialized with some standard features that are commonly required by a Portal application, such as:

- Site navigations
- Runtime customization
- Delegated administration of portal resources at runtime
- Pre-configured security settings

If you do not want these features pre-configured, you will start with an empty application. You can then add the WebCenter services and capabilities you require.

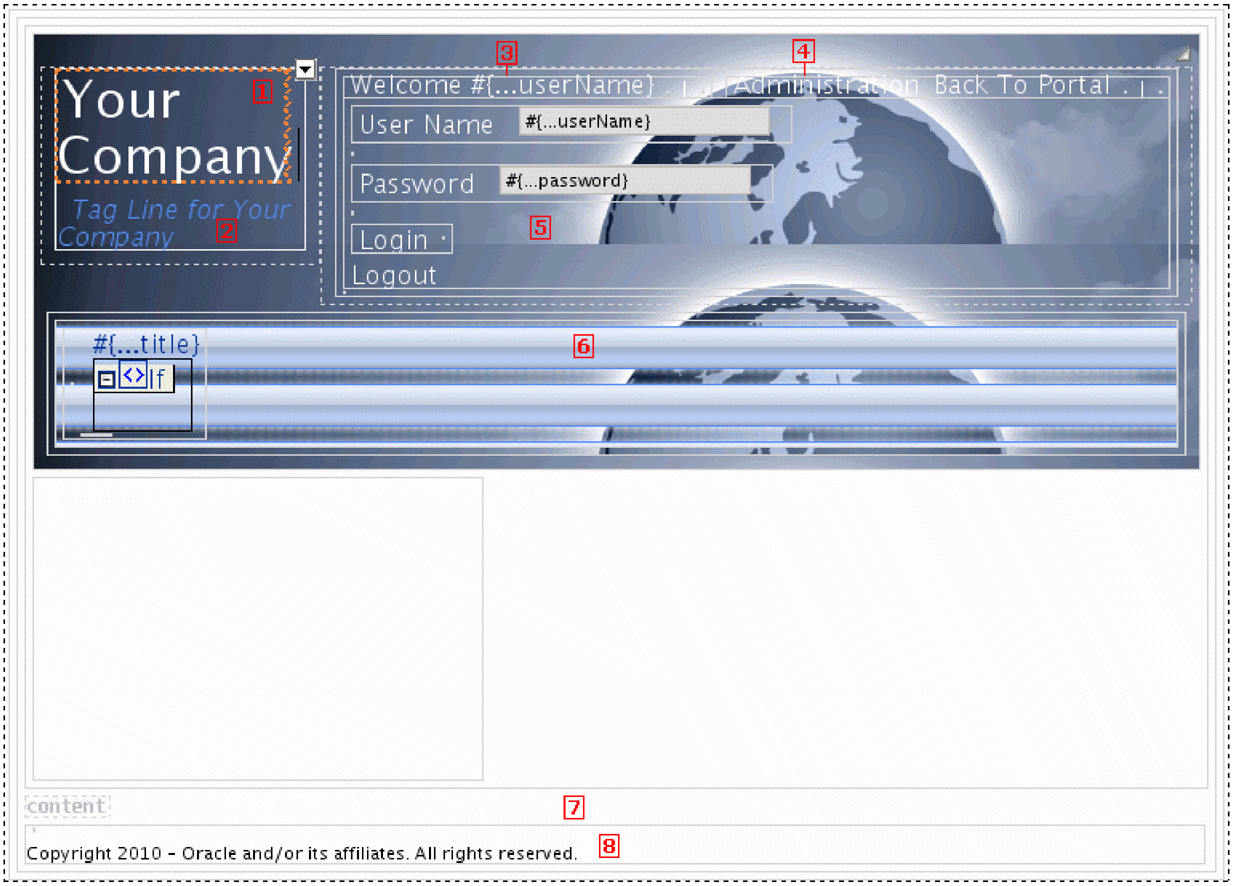
☑ Configure the application with standard Portal features

Decide whether to automatically grant "view" access on taskflows and pages to a special test-all role so you can test your application before creating ADF policy grants.

☐ Enable automatic grants to all objects

These built-in page templates both offer essentially the same functionality but with different graphics. Figure 11–5 shows the `pageTemplate_globe.jspx` page template.

Figure 11–5 Built-In Page Template - pageTemplate_globe.jspx



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1. Link to the portal home page
2. Tag line
3. Welcome message
4. Link to the runtime administration console
5. Login area that converts to a logout link when users are logged in
6. Navigation bar
7. Area for adding content to pages based on the template
8. Copyright notice

These page templates use the following attributes:

Table 11–1 Built-In Page Template Attributes

Name	Type	Default Value
`contentWidth`	String	`960px`
`showNavigation`	Boolean	`true`
`showGreetings`	Boolean	`#{securityContext.authenticated}`
`showLogin`	Boolean	`true`
`showAdmin`	Boolean	`#{securityContext.authenticated}`
`isAdminPage`	Boolean	`false`
`isEditingTemplate`	Boolean	`false`

You can edit these built-in page templates to meet your particular requirements, or you can create your own from scratch. If you choose to create your own page templates, Oracle recommends that you refer to the latest built-in page templates, which provide examples of recommended layout components that include fewer task flows and faster performance. See the "About Built-in Page Templates" section in *Building Portals with Oracle WebCenter Portal.*

11.2 Best Practices for Developing Page Templates

Because page templates are present in every page of a portal, the design of your page templates should be carefully planned to optimize their performance and conform to best practices. This section provides tips for developing page templates for a portal.

Note about Page Templates in WebCenter Portal (Portal Builder):

The development of a page template is a complex task. Oracle recommends that you use JDeveloper to develop page templates for both Portal Framework applications and portals built with WebCenter Portal (Portal Builder). You can also develop page templates in Portal Builder, but the editing capabilities are limited.

When fully developed, you can upload page templates directly to WebCenter Portal (the portal server) for immediate use or for testing. Alternatively, you can export the page template to a file and upload the page template to WebCenter Portal later on through Portal Builder.

For more information, see Section 11.3, "Creating a Page Template," Section 11.4, "Editing a Page Template," and Section 55.1, "Developing Assets for WebCenter Portal."

Table 11–2 provides a quick reference summary of considerations and guidance for achieving the best results out of your page templates.

Table 11–2 Best Practices Summary for Page Templates

Considerations	Best Practices
Performance	While all of this section, "Best Practices for Developing Page Templates", is aimed at improving the performance of your page templates, there are a few general tips to keep in mind as overall best practices: ■ Minimize the use of embedded task flows. For examples, refer to the latest built-in page templates included with WebCenter Portal, described in the "About Built-in Page Templates" section in *Building Portals with Oracle WebCenter Portal.* ■ Minimize the use of ADF layout components, using `panelGridLayout` to implement your page template structure. The fewer ADF layout components, the easier it is to apply skins. ■ Avoid using images for decorative purposes (such as rounded corners). Consider using CSS instead of images. ■ Defer loading of ADF components, such as menus and dialogs, where possible. This can be controlled through ADF such as `contentDelivery`, `childCreation`, and so on. ■ Avoid elements that require extra time in rendering page templates and try to substitute for elements that require less processing time.

Table 11–2 (Cont.) Best Practices Summary for Page Templates

Considerations	Best Practices
Layout	One of the most important aspects of page template design is how to lay out components, both elements of the template and page content. Page templates can have a flowing layout or a stretching layout. For more details about these two strategies, see Section 11.1.2, "Understanding Page Template Layout." As a page template developer, you can control whether the content facet is in a stretching or flowing region of the page. Page content must be created taking the layout strategy into consideration. Once you decide on the best strategy for your page templates, see the following sections for tips on creating the layout you choose: ■ Section 11.2.1, "Best Practices for Creating Stretching Layouts" ■ Section 11.2.2, "Best Practices for Creating Flowing Layouts"
Navigation	A page template can expose the navigation for a portal in many ways. For example, in a desktop browser, portal navigation is typically shown along the top of the page, or down the side of the page: ■ A *top navigation* page template exposes the portal navigation in header area. Top navigation makes effective use of the horizontal space on the page, and is recommended when there are seven or fewer top level pages in the portal navigation. This page template design generally has a header, page and footer sections, and is an ideal starting point for sites that require a flowing layout. ■ A *side navigation* page template exposes the portal navigation in a sidebar on the left side of the page. The vertical nature of side navigation allows for a more lengthy list of navigation items, and is recommended when there are more than seven top level pages in the portal navigation. Choose a side navigation template for more complex navigation models. On different devices, other navigation models can be used. For example, in page templates optimized for mobile devices, navigation can be provided as either a popup or slide in/out. The navigation model provided out-of-the-box with WebCenter Portal (`Portal Default Navigation Model`) is a shared asset that can be embedded in a page template to provide ready-built navigation that can be customized and extended as desired. For more information, see the "Editing a Navigation Model" and "About Built-in Page Templates" sections in *Building Portals with Oracle WebCenter Portal*.
Skin	Each page template works together with a skin to determine the overall look and feel of the pages in your portal. While the page template controls the structure of components on the page, the skin controls the visual appearance of those components, such as the colors, fonts, and other aspects such as the position, height, and width of components on the page. Each page template can define a preferred skin to identify the skin that works best with that page template. When the page template is selected as the default page template for a portal or as the system default, the default skin automatically updates to the page template's preferred skin. For more information, see Chapter 13, "Developing Skins."

Table 11–2 (Cont.) Best Practices Summary for Page Templates

Considerations	Best Practices
Storage location	In a Portal Framework application, to expose the new page template in the **Assets** page of the runtime administration console, you must create the page template under the `*Application_Root*/Portal/public_html/oracle/webcenter/portalapp/pagetemplates` directory, which contains the out-of-the-box templates. Creating your page templates in this directory provides the following advantages: ■ Page templates can be packaged into resource archives, which can be imported and used in other WebCenter Portal Framework applications, or portals built with Portal Builder. You can create general purpose, reusable page templates. ■ Page templates can be managed at run time using the Administration Console. After importing a page template, you need to edit `pagetemplate-metadata.xml` to register the newly imported template for JDeveloper. For more information, see Section 9.5.1, "Enabling Runtime Administration of Portal Resources."
Runtime behavior	If you develop a page template in JDeveloper that you plan to allow authorized users to edit in Composer at runtime, follow the tips provided in Section 11.2.3, "Best Practices for Developing Page Templates That Can Be Edited at Runtime." Select the **Create Associated ADFm Page Definition** option when developing a page template so that the template can include portlets and task flows and to enable runtime switching. For more information, see Section 11.3, "Creating a Page Template." and Section 11.5.3, "How to Enable Dynamic Switching of Page Templates at Runtime in a WebCenter Portal Framework Application."
Components	For details on what different ADF layout components look like, see the ADF Faces Rich Client demo online tool (`http://jdevadf.oracle.com/adf-richclient-demo/faces/visualDesigns/index.jspx`). Select **Page** or **Page Template** from the **View Source** menu for a component to see what tags and attributes are used as well as what the component structure looks like for the page. Because a page template layout can be changed, create pages and design custom components that display properly in flowing and stretching context. For tips on customizing the appearance of components, see Section 11.2.4, "Best Practices for Customizing the Appearance of Components."
Scrolling	Add scroll bars only around flowing island content. For tips on implementing scroll bars, see Section 11.2.5, "Best Practices for Defining Scrolling in a Page Template."
Margins, borders, and padding	Due to browser CSS Box Model Rules, defining margins, borders and padding on components might be complex. For tips on resolving the complexities of defining margins, borders and padding on components, see Section 11.2.6, "Best Practices for Defining Margins, Borders, and Padding."

Table 11–2 (Cont.) Best Practices Summary for Page Templates

Considerations	Best Practices
Attributes	Consider attributes that can be set in your page templates or pages that use the page templates. For example, `showFooter` specifies whether or not to show the page footer. A page template without attributes is syntactically correct. However, page template attributes are useful when you want to use one page template for several pages where the template should render slightly differently. Information about using attributes in your page templates is provided throughout this chapter, including Section 11.2.7, "Best Practices for Hiding Content in Page Templates in a Portal Framework Application" and Section 11.3, "Creating a Page Template."
Links	To add links to page templates, copy components provided in the out-of-the-box page templates to include links navigation, menus, breadcrumbs, buttons, and images. `go` components such as `goButton` and `goLink` have little to no client side footprint since they do not carry client side functionality. They are also preferred over command components (`commandButton`, `commandLink`) for general navigation in portals because they enable URLs that are optimized for search engines.
Internationalization	To create page templates with internationalization techniques in mind, see Chapter 75, "Building Multilanguage Portals" for information about recommended practices such as storing static text in resource bundle files.
Naming page templates (display name)	The display name is exposed to users when creating a new page. For this reason, you should make the page template name something that helps users quickly identify which type of pages the template should be used for.

This section includes the following topics:

- Section 11.2.1, "Best Practices for Creating Stretching Layouts"
- Section 11.2.2, "Best Practices for Creating Flowing Layouts"
- Section 11.2.3, "Best Practices for Developing Page Templates That Can Be Edited at Runtime"
- Section 11.2.4, "Best Practices for Customizing the Appearance of Components"
- Section 11.2.5, "Best Practices for Defining Scrolling in a Page Template"
- Section 11.2.6, "Best Practices for Defining Margins, Borders, and Padding"
- Section 11.2.7, "Best Practices for Hiding Content in Page Templates in a Portal Framework Application"

11.2.1 Best Practices for Creating Stretching Layouts

If your page template is best suited to a stretching layout (see Section 11.1.2, "Understanding Page Template Layout"), follow these tips as you develop the layout:

- Build the outer structure with containers that can be stretched and can stretch their children. Inside your `document` component, use containers such as `panelGridLayout` (Figure 11–2) with rows (`gridRow`) and cells (`gridCell`), and `panelSplitter` (Figure 11–3).

> **Note:** Each layout or panel component's tag documentation identifies whether it is stretchable and how to achieve it in its "Geometry Management" documentation. Some components have attributes to determine whether children will be stretched or not. For example: `document` has a `maximized` attribute, `showDetailItem` has a `stretchChildren` attribute.

- Create flowing islands. Inside of the stretchable outer structure, create islands of flowing (non-stretched) components. To make this transition from stretching to flowing, use `panelGroupLayout` with `layout="scroll"` or `layout="vertical"` since it supports being stretched but will not stretch its children.
- On stretching components, set `dimensionsFrom="auto"` so that the stretching component (for example, `panelStretchLayout`) will only try to stretch its child if it itself is being stretched. If it is not being stretched, then it will flow (not stretch) its children.
- Do not stretch something vertically (by using a height with a percent value) when inside a flowing container.
- Do not use the `position` CSS property in an `inlineStyle`. Doing so will impede the ability to override this property with a style specified in the skin.

> **Note:** The following components are just some of the components that cannot be reliably stretched:
>
> - Most input components
> - `panelBorderLayout`
> - `panelFormLayout`
> - `panelGroupLayout` (with `layout="default"`)
> - `panelGroupLayout` (with `layout="horizontal"`)
> - `panelHeader` (with `type="flow"`)
> - `panelLabelAndMessage`
> - `panelList`
> - `panelGrid`
> - `tableLayout` (Apache MyFaces Trinidad HTML Component)

11.2.2 Best Practices for Creating Flowing Layouts

If your page template is best suited to a flowing layout (see Section 11.1.2, "Understanding Page Template Layout"), follow these tips as you develop the layout:

- Use `panelGridLayout` with rows (`gridRow`) and cells (`gridCell`) to define a structured layout that will flow.
- To avoid multiple scroll bars, do not nest scrolling `panelGroupLayout` components, instead use `layout="vertical"`.
- Most stretchable ADF components also work in flowing context with `dimensionsFrom="auto"`.

- To stretch a component horizontally, use `styleClass="AFStretchWidth"` (instead of `inlineStyle="width:100.0%"`).

Working with customizable components:

- In `panelCustomizable`, use `layout="auto"` to detect whether to stretch its children.
- To support flowing and stretching layouts, use `showDetailFrame` with `stretchChildren="auto"`.

11.2.3 Best Practices for Developing Page Templates That Can Be Edited at Runtime

To create a page template at design time (in JDeveloper) that is suited to being editable at runtime (in Composer), follow these tips:

- Add components from the Composer group in the Component Palette.
- Do not add `pageCustomizable` to a page template.
- Add at least one `panelCustomizable` component, which provides a container with horizontal or vertical layout that holds other components.
- Inside a `panelCustomizable` component, add ADF components (such as `outputText`, `richTextEditor`, or `goLink`) surrounded by a `showDetailFrame`, which provides a chrome for a component that enables you to add actions like show, hide, and move. You can edit the frame or the embedded component properties.

> **Caution:** Use this technique sparingly, as `showDetailFrame` components impact processing time. If the end user is not expected to move components around, do not wrap them in a `showDetailFrame`.

Many of the components available to add to a page at design time are also available at runtime in the resource catalog. Table 11–3 maps design time components to runtime components.

Table 11–3 Component Mapping: Design time to Runtime

Design Time (JDeveloper)	Runtime (Composer)
`panelCustomizable`	`Box`
`outputText`	`HTML Markup`
`goLink`	`Hyperlink`
`goImageLink`	`Image`
`showDetailFrame`	`Movable Box`
`richTextEditor`	`Text`
`inlineFrame`	`Web Page`

11.2.4 Best Practices for Customizing the Appearance of Components

To customize the appearance of components, follow these tips:

- For custom styling, use Cascading Style Sheets (CSS), which is easy to maintain and can be changed without changing the page template source. For example, make the background color of a page blue using the CSS code `background-color: blue`.

- Use a custom skin for consistently modified appearances if the existing skin doesn't provide all that you need.
- For instance-specific alternative styling, use the `styleClass` attribute. Keep the corresponding style definitions in an easy-to-maintain location such as in a custom skin (recommended) or in a style provided by the `af:resource` tag.
- As a last resort, use component attributes such as `inlineStyle`, `contentStyle`, and `labelStyle`. These are harder to maintain as they are scattered throughout components rather than collected in a single style sheet, contribute more to the page's raw HTML size, and may not even be needed if one or more of the above mechanisms are used. Styles are directly processed by the web browser, which gives you a great deal of power but at the cost of being error-prone.
- Browsers do not support all styles on all elements and certain combinations of styles produce non-obvious results. Here is some guidance on style configurations to avoid:
  - An `inlineStyle` with a `height` value with `%` units
  - An `inlineStyle` with a `width` value between `90%` and `100%` (use `styleClass="AFStretchWidth"` or `styleClass="AFAuxiliaryStretchWidth"` instead)
  - An `inlineStyle` with `height`, `top`, and `bottom` values
  - An `inlineStyle` with `width`, `left`, and `right` values
  - An `inlineStyle` with a `position` value
  - In a child being stretched by a parent component, an `inlineStyle` with `width` or `height` values

11.2.5 Best Practices for Defining Scrolling in a Page Template

To define scrolling in a page template, follow these tips:

- Try to avoid the need for end users to scroll horizontally by designing the page content to occupy the available screen size.
- Add scroll bars only around flowing island content. The recommended transition component for switching from a stretching outer frame into a flowing island is the `panelGroupLayout` with `layout="scroll"`. If the contents of this `panelGroupLayout` cannot fit in the space allocated, the browser will determine whether scroll bars are needed and will add them automatically.
- Do not nest scrolling `panelGroupLayout` components because this will make the user see multiple scroll bars. Also, this should only be used at transitions from stretching to flowing areas and since you should not have stretching areas inside of flowing areas, you would generally never end up with nested scroll bars. It is best to minimize the number of areas that users must scroll in order to see what they are looking to find. Take time to consider what scrolling users will need. In cases where undesired scroll bars exist, you may want to change the `layout` attribute of the `panelGroupLayout` to `vertical`.

11.2.6 Best Practices for Defining Margins, Borders, and Padding

Due to browser CSS Box Model Rules, defining margins, borders and padding on components can be complex. In many cases, to apply these kinds of styles, you need to use multiple components together:

- In a scrolling area, you can add an extra `panelGroupLayout` with `layout="vertical"` with the padding defined on it, inside of the outer `panelGroupLayout` with `layout="scroll"`.
- In a stretching area, you may need to wrap a `panelGroupLayout` component inside a `panelGridLayout` with spacers inside `gridCell` components. See Figure 11–2.

> **See Also:** Refer to the Navigation-Master-Detail, Tiled Flowing, and Tiled Stretching layout pattern examples for various mechanisms to apply padding:
>
> `http://jdevadf.oracle.com/adf-richclient-demo/faces/feature/layoutBasicTest.jspx`

11.2.7 Best Practices for Hiding Content in Page Templates in a Portal Framework Application

In a Portal Framework application, there are several special pages based on a page template that hide parts of the page template. These pages use the attributes specified in the page template to accomplish this:

- In out-of-the-box `login.jspx` and `error.jspx`: `showNavigation=false` and `showLogin=false`.
- In built-in administration pages: `isAdminPage=true`.
- When editing a template, Assets Manager sets `isEditingTemplate=true`.

Use these attributes in your custom page template if the template will be used as the default template or if you use the out-of-the-box login page.

You may allow page templates with editable components to be edited using Composer. Oracle recommends you hide the template content, except the content facet reference, when editing the page so that only the page content, not the page template, can be edited. For example, use the rendered attribute:

```
rendered = "#{!composerContext.inEditMode or attrs.isEditingTemplate}"
```

11.3 Creating a Page Template

Before you create a page template, read through Section 11.2, "Best Practices for Developing Page Templates."

This section describes how to start from scratch with a new page template of your own design. Alternatively, you can start with the two built-in page templates provided in Portal Framework applications, or the latest page templates provided with WebCenter Portal (recommended), and modify them according to your requirements. To use an existing page template as a starting place, see Section 11.4, "Editing a Page Template."

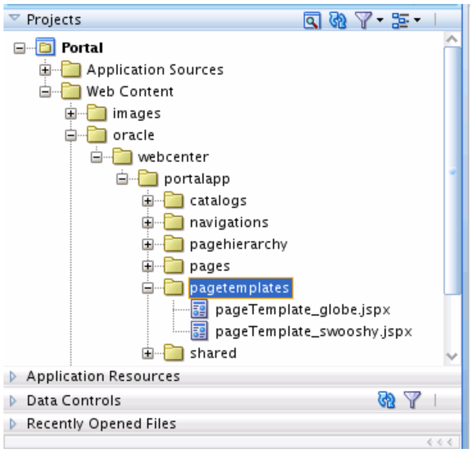
Note: Creating a page template is a complex task. Oracle recommends that you use JDeveloper to develop page templates for both Portal Framework applications and portals built with WebCenter Portal (Portal Builder). You can also develop page templates in Portal Builder, but the editing capabilities are limited.

When fully developed, you can upload page templates directly to WebCenter Portal (the portal server) for immediate use or for testing. Alternatively, you can export the page template to a file and upload the page template to WebCenter Portal later on through Portal Builder.

To create a page template:

1. In the Application Navigator, right-click the node where you want to create and store page templates (Figure 11–6) and choose **New**:

Figure 11–6 Contents of the pagetemplates Folder



   - For Portal Framework applications, the recommended directory is `/oracle/webcenter/portalapp/pagetemplates`

   Note: In a Portal Framework application, to expose the new page template in the **Assets** page of the runtime administration console, you must create the page template under the `*Application_Root*/Portal/public_html/oracle/webcenter/portalapp` directory. By default, Portal Framework applications include a separate `pagetemplates` directory, which contains the built-in page templates.

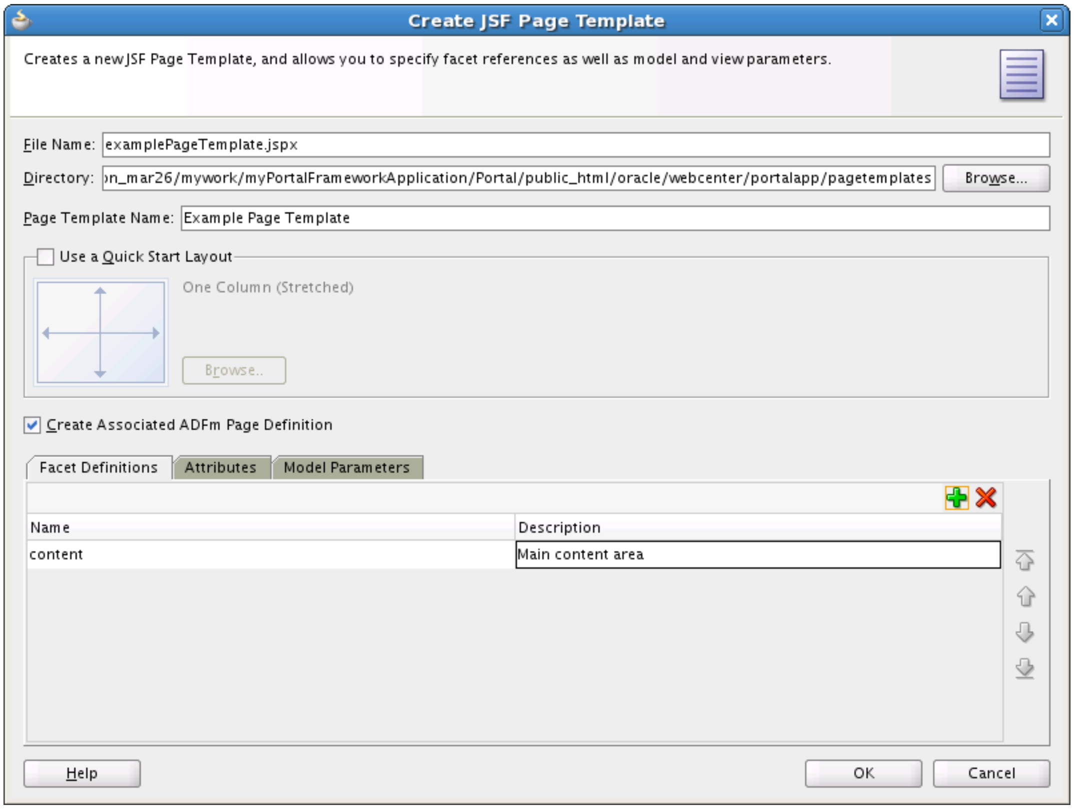
   - For page templates to be used in WebCenter Portal (Portal Builder), use the `WebCenterSpacesResource` project to select a directory for shared assets or portal assets, as described in Section 55.1, "Developing Assets for WebCenter Portal."

2. In the New Gallery, expand **Web Tier**, select **JSF** and then **JSF Page Template**, and click **OK**.

3. In the Create JSF Page Template dialog (Figure 11–7), in the **File Name** field, enter a name for the JSPX file that represents the page template (for example `myCompanyPageTemplate.jspx`).

The file name identifies the page template in the Application Navigator.

Figure 11–7 The Create JSF Page Template Dialog



Create JSF Page Template

Creates a new JSF Page Template, and allows you to specify facet references as well as model and view parameters.

File Name: examplePageTemplate.jspx

Directory: ›n_mar26/mywork/myPortalFrameworkApplication/Portal/public_html/oracle/webcenter/portalapp/pagetemplates

Page Template Name: Example Page Template

□ Use a Quick Start Layout

One Column (Stretched)

☑ Create Associated ADFm Page Definition

Name	Description
content	Main content area

4. In the **Directory** field, verify or enter the full directory path of the location under which to create the page template.

5. In the **Page Template Name** field, enter a display name for the page template that will help users quickly identify which type of pages this template should be used for.

6. If you want to use one of the predefined layouts for your page template, select **Use a Quick Start Layout**.

7. Select **Create Associated ADFm Page Definition** to use ADFm Model data bindings in the page template.

   Associating a page definition with the page template enables you to include objects that have model elements to them (for example, task flows and portlets) in the page template. It also enables users to switch to a different page template at runtime. For runtime page template switching to work, one of the following conditions must be met:

   – All page templates in the application have associated page definitions.

   – None of the page templates in the application have associated page definitions.

   Therefore, because the built-in page templates provided with Portal Framework applications have associated page definitions, for page template switching to work in Portal Framework applications, any other page templates created within the application must also have associated page definitions.

8. Click the **Facet Definitions** tab to define the areas, or *facets*, in the page template where content can be inserted.

   Facets are placeholders in the template that will be filled in by the pages using the template. An ADF page template can have any number of facets, but a Portal Framework application requires that each template have one facet called `content`. Typically Portal Framework applications do not use any other facets, since WebCenter Portal's runtime tools recognize only this facet. Other facets could be used only at design time, in JDeveloper.

   A page template that is intended for use in a WebCenter Portal application must contain at least one facet definition that must be called `content`. To create this facet definition:

   a. Click the **New** icon to add a new row to the **Facet Definitions** tab.

   b. In the **Name** field for the new facet definition, enter `content`.

   c. In the **Description** field, enter a brief description for the facet definition, for example `Main content area`.

   d. Create additional facet definitions as required.

   e. For information about how to add the facets to the required location in the page template, see Section 11.4, "Editing a Page Template."

   Example 11–1 shows the `content` facet definition in the `<af:xmlContent>` section of the `pageTemplate_globe.jspx` built-in page template.

Example 11–1 Content Facet in the Globe Built-In Page Template

```
<af:xmlContent>
  <component xmlns="http://xmlns.oracle.com/adf/faces/rich/component">
    <display-name>Globe Page Template</display-name>
    <facet>
      <description>Facet for content</description>
      <facet-name>content</facet-name>
    <facet>
    ...
  </component>
</af:xmlContent>
```

9. Click the **Attributes** tab and click the **New** icon to define attributes for passing values from pages that use the template to the template itself. These values can be used by the page template to drive what is actually displayed on individual pages that use the template.

   A page template without attributes is syntactically correct. However, page template attributes are useful when you want to use one page template for several pages where the template should render slightly differently.

   For example, the `pageTemplate_globe.jspx` built-in page template includes a link to the seeded Administration page. If the current page *is* the Administration page, then this link does not need to be displayed. The template uses an attribute, called `isAdminPage`, to identify whether the current page is the seeded Administration page. The value of this attribute, set by pages that use the template, determines whether or not to display the link to the Administration page.

   Example 11–2 shows the `isAdminPage` attribute definition in the page template.

Example 11–2 Attribute Definition in the Globe Built-In Page Template

```
<af:xmlContent>
```

```
  ...
    <attribute>
      <attribute-name>isAdminPage</attribute-name>
      <attribute-class>java.lang.Boolean</attribute-class>
      <default-value>#{false}</default-value>
    </attribute>
  ...
</af:xmlContent>
```

Example 11–3 shows how the page template uses the value of the `isAdminPage` attribute to determine whether or not to render the link to the seeded Administration page.

Example 11–3 Conditional Value for Rendering the Administration Page Link

```
<af:pageTemplateDef var="attrs">
  ...
  <af:goLink id="pt_glnk1" text="Administration"
             destination="/admin"
             rendered="#{attrs.showAdmin !attrs.isAdminPage}"
             inlineStyle="font-size:small; color:White;"/>
```

Example 11–4 shows how the seeded **Administration** page sets the `isAdminPage` attribute to `true`, ensuring that the page template does not render the link when users are viewing the **Administration** page.

Example 11–4 Setting the Value of a Page Template Attribute

```
<af:pageTemplate value="#{bindings.pageTemplateBinding.templateModel}" id="pt1">
  <f:attribute name="isAdminPage" value="#{true}"/>
```

Example 11–5 shows how the page template uses the value of the `contentWidth` attribute to set the page width. The default value is 960 pixels.

Example 11–5 contentWidth Attribute

```
<attribute>
  <attribute-name>contentWidth</attribute-name>
  <attribute-class>java.lang.String</attribute-class>
  <default-value>960px</default-value>
</attribute>
```

Example 11–6 shows how the page template uses the value of the `showNavigation` and `showLogin` attributes to show or hide the login link and the navigation bar.

10. Click **OK**.

    The page template is created and opened in the visual editor. The next step is to edit the page template to define its layout and content.

11.4 Editing a Page Template

You can edit your page template after its initial creation. You can also edit one of the built-in page templates to alter it to meet your specific requirements. Any changes you make are automatically rolled out to any pages that use the page template.

Note: Editing a page template is a complex task. Oracle recommends that you use JDeveloper to develop page templates for both Portal Framework applications and portals built with WebCenter Portal (Portal Builder). You can also develop page templates in Portal Builder, but the editing capabilities are limited.

When fully developed, you can upload page templates directly to WebCenter Portal (the portal server) for immediate use or for testing. Alternatively, you can export the page template to a file and upload the page template to WebCenter Portal later on through Portal Builder.

Before you edit a page template, read through Section 11.2, "Best Practices for Developing Page Templates."

For examples of features that you can include in your own page templates, refer to:

- The two built-in page templates in Portal Framework applications. See Section 11.1.4, "Understanding the Built-In Page Templates in a WebCenter Portal Framework Application."
- The built-in page templates provided with WebCenter Portal, specifically the latest templates that include fewer task flows and the performance-optimizing `panelGridLayout` component, which uses rows (`gridRow`) and cells (`gridCell`) to define a structured layout. See the "About Built-in Page Templates" section in *Building Portals with Oracle WebCenter Portal.*

Even if you do not intend to base your page templates on the built-in ones at all, it is still worth studying them for ideas. For example, the built-in page templates include a login form, and a good example of navigation visualization, which you can modify according to your requirements.

If iterative development is enabled, any changes that you make to page templates can be seen immediately in a running Portal Framework application. For more information about iterative development, see Section 2.3.1, "Preparing for Iterative Development in a Portal Framework Application."

To edit a page template:

1. To add WebCenter Portal-specific components to your page template, you must first add the JSP library to your project in JDeveloper. For example:

   ```
   JDev_HOME/jdeveloper/webcenter/modules/oracle.webcenter.framework_
   11.1.1/spaces-components.jar
   ```

   After adding the library to your project, you see a new component palette named `SpacesDeclarativeComponents`. You can drop components from the palette into your page template. These same built-in components are available at run time through the resource catalog, under **Template Development**.

2. In the Application Navigator, right-click the page template that you want to edit, and choose **Open**.

   - For Portal Framework applications, the recommended directory for page templates is `/oracle/webcenter/portalapp/pagetemplates`

Note: In a Portal Framework application, to expose the new page template in the **Assets** page of the runtime administration console, the page template must be stored under the `*Application_Root*/Portal/public_html/oracle/webcenter/portalapp` directory. By default, Portal Framework applications include a separate `pagetemplates` directory.

- For page templates to be used in WebCenter Portal (Portal Builder), use the `WebCenterSpacesResource` project to locate page templates for shared assets or portal assets, as described in Section 55.1, "Developing Assets for WebCenter Portal."

3. In the visual editor, make required changes to the layout and content of the page template.

   a. Drag components from the Component Palette and drop them onto the page template in the visual editor.

      Navigation visualization is a very important aspect of a page template. For information about adding navigation visualization to your page template, see Section 10.11, "Visualizing Portal Navigation."

      For information about adding other resources to your page template, such as portlets, task flows, or content, see Chapter 15, "Creating Pages and Adding Resources."

      Other features you might want to provide in your page template include a log in/log out area or a search field. The built-in page templates include an example of a login form.

      Throughout your page templates, you can use expression language (EL) expressions to specify a variable value instead of a constant value. For descriptions of common EL expressions, see Appendix G, "Expression Language Expressions."

   b. For areas on the page template where users can place their own content in pages based on the template:

      a. Drag the **FacetRef** component from the Component Palette and drop it onto the appropriate location on the page template.

      b. In the Insert Facet Ref dialog, from the **Facet Name** drop-down list, select the facet that you want to use for this area of the page template. If you enter a new facet name, JDeveloper creates a new facet definition in the page template definition file.

      Example 11–6 shows how the `content` facet is included in the `pageTemplate_globe.jspx` built-in page template.

Example 11–6 The content Facet in the Globe Built-In Page Template

```
<af:pageTemplateDef var="attrs">
  <af:panelGroupLayout id="pt_root" layout="scroll">
    <af:panelGroupLayout id="pt_pg12" layout="vertical">
      ...
      <af:facetRef facetName="content"/>
      ...
    </af:panelGroupLayout>
  </af:panelGroupLayout>
  ...
```

```
<af:pageTemplateDef>
```

c. To add new facet definitions or attributes, select the `af:pageTemplateDef` tag in the Structure window and use the Property Inspector. For examples, see the steps in Section 11.3, "Creating a Page Template."

d. For general information about JSF page templates, see the "Using Page Templates" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

4. Save the page template definition file.

11.5 Applying a Page Template to a Page

This section describes how to apply a page template to a page in a Portal Framework application.

> **Note:** If you developed a page template in JDeveloper for use in WebCenter Portal (Portal Builder), this task is performed using Portal Builder, where the page template is selected at either the application level or the portal level to define the structure and layout (header, body, navigation, and footer) of all pages in the portal. For Portal Builder, see the "Choosing a Default Page Template" section in *Administering Oracle WebCenter Portal* to configure global defaults across portals, and the "Changing the Page Template for a Portal" section in *Building Portals with Oracle WebCenter Portal* to select the default page template for the portal.

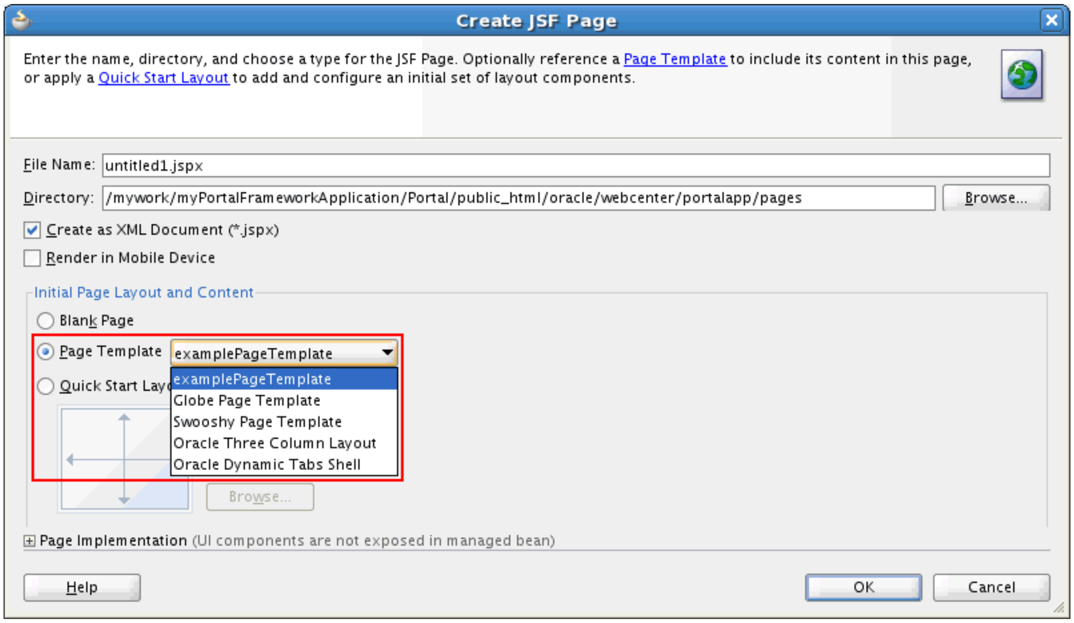
This section includes the following topics:

- Section 11.5.1, "How to Apply a Page Template During Page Creation in a WebCenter Portal Framework Application"
- Section 11.5.2, "How to Change the Page Template Applied to a Page in a WebCenter Portal Framework Application"
- Section 11.5.3, "How to Enable Dynamic Switching of Page Templates at Runtime in a WebCenter Portal Framework Application"
- Section 11.5.3.1, "What Happens at Runtime"

11.5.1 How to Apply a Page Template During Page Creation in a WebCenter Portal Framework Application

When you create a JSF page in a Portal Framework application, you can choose the page template to apply to the page in the Create JSF Page dialog, as shown in Figure 11–8.

Figure 11–8 Page Template Option in the Create JSF Page Dialog



Create JSF Page

Enter the name, directory, and choose a type for the JSF Page. Optionally reference a Page Template to include its content in this page, or apply a Quick Start Layout to add and configure an initial set of layout components.

File Name: untitled1.jspx

Directory: /mywork/myPortalFrameworkApplication/Portal/public_html/oracle/webcenter/portalapp/pages

☑ Create as XML Document (*.jspx)

□ Render in Mobile Device

Initial Page Layout and Content

○ Blank Page

● Page Template examplePageTemplate

○ Quick Start Lay

⊞ Page Implementation (UI components are not exposed in managed bean)

For more information about creating pages in Portal Framework applications, see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."

11.5.2 How to Change the Page Template Applied to a Page in a WebCenter Portal Framework Application

When you create a page, you select a specific page template to use for that page (see Section 11.5.1, "How to Apply a Page Template During Page Creation in a WebCenter Portal Framework Application"). This adds a static reference to the page template to the JSPX file for the page. Example 11–7 shows such a reference.

Example 11–7 Referencing A Page Template in a Page

```
<af:pageTemplate
    viewId="/oracle/webcenter/portalapp/pagetemplates/pageTemplate_globe.jspx"
    value="#{bindings.pageTemplateBinding}"
    id="pt1">
  <f:facet name="content"/>
</af:pageTemplate>
```

A binding of the page template is created in the page's page definition file. Example 11–8 shows such a binding.

Example 11–8 Binding a Page Template to a Page

```
<executables>
  <variableIterator id="variables"/>
  <page path="oracle.webcenter.portalapp.pagetemplates.pageTemplate_globePageDef"
        id="pageTemplateBinding" Refresh="ifNeeded"/>
</executables>
```

To apply a different page template to a page, you must change both these references.

11.5.3 How to Enable Dynamic Switching of Page Templates at Runtime in a WebCenter Portal Framework Application

You can change the references in a page's JSPX file and page definition file to use an EL expression that identifies the page template to use from the default page template setting. Users with the appropriate permissions can use the runtime administration console to switch to a different default page template.

> **Note:** You can switch between page templates at runtime only if the page template was created with an associated page definition.

To enable dynamic switching of page templates at runtime:

1. In the Application Navigator, right-click the JSPX file for the page, and choose **Open**.
2. Click the **Source** tab.
3. Replace the following code:

   ```
   <af:pageTemplate viewId="pathToPageTemplate"
                    value="#{bindings.pageTemplateBinding}"
                    id="ptId">
     <f:facet name="content"/>
   </af:pageTemplate>
   ```

   with:

   ```
   <af:pageTemplate value="#{bindings.pageTemplateBinding.templateModel}"
                    id="ptId">
     <f:facet name="content"/>
   </af:pageTemplate>
   ```

   This indicates that the page template to be used by the page is defined in the page template's page definition.
4. Right-click the JSPX file and choose **Go to Page Definition**.
5. Click the **Source** tab.
6. Replace the following code:

   ```
   <page path="pathToPageTemplatePageDef"
         id="pageTemplateBinding" Refresh="ifNeeded"/>
   ```

   with:

   ```
   <page viewId="${preferenceBean.defaultPageTemplate}"
         id="pageTemplateBinding" Refresh="ifNeeded"/>
   ```

   The `${preferenceBean.defaultPageTemplate}` EL expression retrieves the name of the page template from the default page template setting.
7. You can set the default page template, as described in Section 11.6, "Selecting the Default Page Template."

11.5.3.1 What Happens at Runtime

When users with appropriate permission select a page template in the runtime administration console, it will be used by all the pages because the expression

`#{bindings.pageTemplateBinding.templateModel}` always returns the page template set in the administration console.

> **See Also:** For information about configuring defaults for Portal Framework applications, see the "Choosing a Default Page Template" section in *Administering Oracle WebCenter Portal*.

11.6 Selecting the Default Page Template

This section describes how to set the default page template that should be used by default for all pages in a Portal Framework application.

> **Note:** If you developed a page template for use in WebCenter Portal (Portal Builder), this task is performed using Portal Builder, where the default page template is selected at either the application level or the portal level for all pages in the portal. For Portal Builder, see the "Choosing a Default Page Template" section in *Administering Oracle WebCenter Portal* to configure global defaults across portals, and the "Changing the Page Template for a Portal" section in *Building Portals with Oracle WebCenter Portal* to select the default page template for the portal.

When you first create a Portal Framework application, the `pageTemplate_globe.jspx` built-in page template is set as the application's default page template. If you subsequently create your own page template to use for the structure and layout of your application pages, you can set it as the default page template.

You can set the default page template for a Portal Framework application by editing the `oracle.webcenter.portalapp.pagetemplate.pageTemplate` preference in the `adf-config.xml` file. The preference bean `#{preferenceBean}` allows runtime access to this section in `adf-config.xml` and the configuration specified there.

To select the default page template:

1. In the Application Resources pane of the Application Navigator, right-click the **adf-config.xml** file, and choose **Open**.

   > **Tip:** To locate the `adf-config.xml` file, expand the **Descriptors** node, and then the **ADF META-INF** node.

2. Click the **Source** tab.
3. Locate the ADF preference with the following ID:

   ```
   oracle.webcenter.portalapp.pagetemplate.pageTemplate
   ```

4. Set the value attribute to the path of the page template that you want to use as the default for the application, for example:

   ```
   value="/oracle/webcenter/portalapp/pagetemplates/myPageTemplate.jspx
   ```

   Example 11–9 shows an example of the complete preference element.

Example 11–9 The Default Page Template ADF Preference

```
<preference id="oracle.webcenter.portalapp.pagetemplate.pageTemplate"
            desc="Default Page Template"
            value="/oracle/webcenter/portalapp/pagetemplates/myPageTemplate.jspx"
```

```
          resourceType="Template" display="true"/>
```

5. Save the `adf-config.xml` file.

You can now reference the default page template without having to specify its actual name. Example 11–10 shows the EL expression to include in a page's page definition file to indicate that a page should use the application's default page template, rather than an explicitly selected page template.

Example 11–10 EL Expression to Use the Application Default Page Template

```
<page viewId="${preferenceBean.defaultPageTemplate}"
      id="pageTemplateBinding" Refresh="ifNeeded"/>
```

11.7 Deleting a Page Template

This section describes how to delete a page template in a Portal Framework application.

Note: If you developed a page template for use in WebCenter Portal (Portal Builder), this task is performed using Portal Builder, where the default page template is deleted at either the application level or the portal level. For Portal Builder, see the "Deleting an Asset" section in Building Portals with Oracle WebCenter Portal.

Caution: Before you delete a page template, ensure that there are no pages that use the page template. When you delete a page template, attempting to run any page that has a direct reference to the page template will result in a runtime error.

To delete a page template in JDeveloper:

- Right-click the page template in the Application Navigator and choose **Delete** from the context menu.

For more information, see Section 9.4, "Deleting Portal Resources."

11.8 Page Templates Tutorials and Examples

The following supplementary tutorials and examples provide additional information about page templates:

- *Dissecting a Page Template*. Analyzes the details of a simple page template for an Oracle WebCenter Portal Framework application, including recommended practices.

  `http://www.oracle.com/technetwork/middleware/webcenter/portal/learnmore/dissectingapagetemplate-1926909.pdf`

- *Oracle WebCenter Portal Online Training: Creating and Using Page Templates in Oracle WebCenter Portal Applications*. Provides a recorded presentation and slides to create and use page templates for a portal in an earlier release.

  `http://www.oracle.com/technetwork/middleware/webcenter/portal/learnmore/pagetemplates-1438595.pdf`

- *Optimizing WebCenter Portal Mobile Delivery*. Identifies and analyzes some common WebCenter Portal performance bottlenecks related to page weight and describes a generic approach that can streamline a portal while improving the performance and response times. Of particular interest in the context of developing page templates is the section "Page Design and Component Choices." A sample application is available for download.

  `http://www.ateam-oracle.com/webcenter-mobile-delivery/`

- *Working with Links in WebCenter Application*. Describes considerations for using links. Pertinent to page templates are links in menus, breadcrumbs, buttons, and images.

  `http://www.ateam-oracle.com/working-with-links-in-webcenter-application/`

12

Developing Page Styles and Task Flow Styles

This chapter describes how to use Oracle JDeveloper to create and manage page styles and task flow styles for your WebCenter Portal Framework applications.

This chapter includes the following topics:

- Section 12.1, "Introduction to Styles"
- Section 12.2, "Developing Page Styles"
- Section 12.3, "Developing Task Flow Styles"

12.1 Introduction to Styles

Oracle WebCenter Portal provides several different styles to determine the layout of content within a portal:

- **Page styles** determine the layout of content in a new page that is created at runtime. For more information, see Section 12.1.1, "Introduction to Page Styles."
- **Task flow styles** determine the layout of content in a task flow that is created at runtime. Task flow styles can also include objects that can be bound to any data visualization that is added to the task flow. For more information, see Section 12.1.2, "Introduction to Task Flow Styles."
- **Content Presenter display templates** define the layout of Content Presenter content items on a page. These templates are not discussed in this chapter. For more information, see Chapter 27, "Creating Content Presenter Display Templates."

Runtime Management

Portal Framework applications support the runtime administration of styles to help users continue developing a portal even after it has been deployed. With runtime administration, authorized users can manage styles in a browser-based environment, with no requirement to install or understand JDeveloper. For more information, see Section 9.5, "Working with Portal Resources at Runtime."

Round-Trip Development

You can bring runtime-created or modified styles back into JDeveloper, to ensure that any changes are not lost when the portal is redeployed. You can also edit these styles to further enhance them if necessary, and upload them back into the deployed portal. For more information, see Section 9.6, "Working with Round-Trip Development."

Note: You cannot create Content Presenter display templates at runtime. You can create page and task flow styles at runtime only by making a copy of an existing style.

This section includes the following topics:

- Section 12.1.1, "Introduction to Page Styles"
- Section 12.1.2, "Introduction to Task Flow Styles"

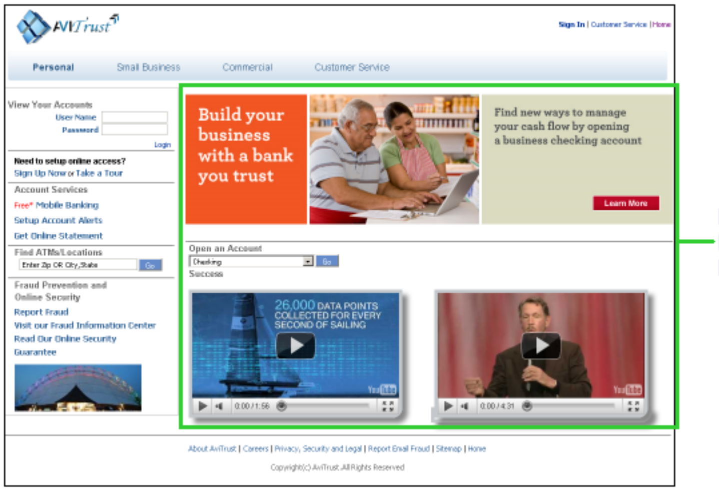
12.1.1 Introduction to Page Styles

A page style is a JSPX page used for pages created at runtime. It describes the layout of a newly created page and may also dictate the type of content that the page supports.

When a user creates a page using a page style, the layout and initial content are copied from the page style to the newly created page. Unlike page templates, page styles are not reference-based, that is, if you change a page style, the change is not inherited in pages that use the style.

Typically, a page style contains components that enhance the usefulness and appearance of a given page. These include an in-place HTML text editor, images, layout boxes, hyperlinks, and so on. Content contributors can further populate the page with content. Figure 12–1 shows a sample portal page that is based on a page style.

Figure 12–1 Sample Page that Uses a Page Style

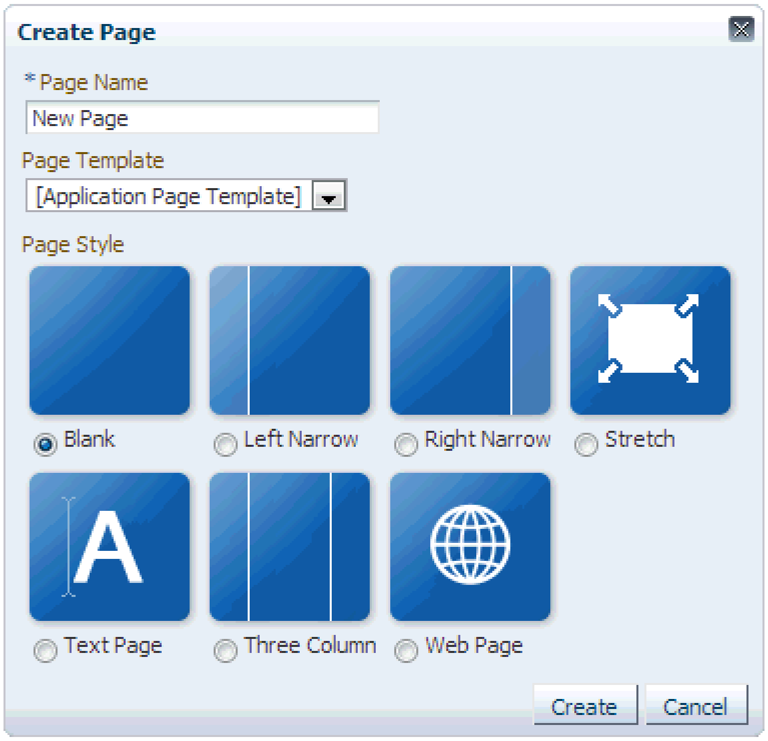

AVITrust
Sign In | Customer Service | Home
Personal
Small Business
Commercial
Customer Service
View Your Accounts
User Name
Password
Login
Need to setup online access?
Sign Up Now or Take a Tour
Account Services
Free* Mobile Banking
Setup Account Alerts
Get Online Statement
Find ATMs/Locations
Enter Zip OR City,State
Go
Fraud Prevention and Online Security
Report Fraud
Visit our Fraud Information Center
Read Our Online Security Guarantee
Build your business with a bank you trust
Find new ways to manage your cash flow by opening a business checking account
Learn More
Open an Account
Checking
Go
Success
26,000 DATA POINTS COLLECTED FOR EVERY SECOND OF SAILING
About AviTrust | Careers | Privacy, Security and Legal | Report Email Fraud | Sitemap | Home
Copyright(c) AviTrust All Rights Reserved

DEFINED BY THE PAGE STYLE

You create page styles in JDeveloper, but they are only used at runtime to create pages.

A user can create pages at runtime based on the available page styles. The **Create Page** option is available in the Assets page of the runtime administration console. It is also available in other application pages that contain the `Page - Create New` task flow. When a user clicks **Create Page**, the Create Page dialog displays a set of predefined styles, as shown in Figure 12–2. The user can choose a style and create a page based on that. As the layout is already in place in the new page, the user only needs to add content to different areas of the page.

Figure 12–2 Create Page Dialog



Create Page

* Page Name

New Page

Page Template

[Application Page Template]

Page Style

● Blank ○ Left Narrow ○ Right Narrow ○ Stretch

○ Text Page ○ Three Column ○ Web Page

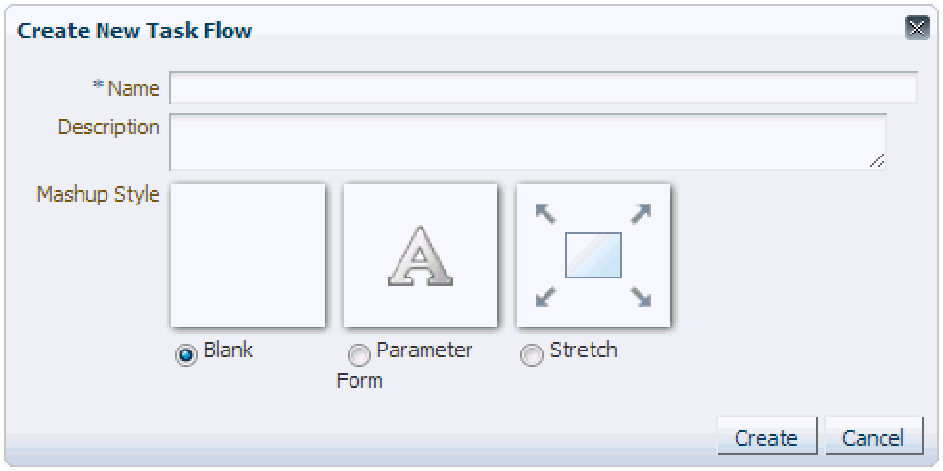
12.1.2 Introduction to Task Flow Styles

Task flow styles are very similar to page styles, except that they are used at runtime to create task flows rather than pages. Task flow styles are especially useful when creating task flows for use with Data Presenter, as they can include objects that can then be bound to any data visualization that is added to the task flow.

Task flow styles are used only when creating task flows at runtime, but they are created and published in JDeveloper.

Task flow styles are displayed in the Create New Task Flow dialog box (Figure 12–3). Users can choose a style and create a task flow based on that style. For more information, see the "Working with Task Flows" section in *Building Portals with Oracle WebCenter Portal*.

Figure 12–3 Create New Task Flow Dialog



Create New Task Flow

* Name

Description

Mashup Style

● Blank ○ Parameter Form ○ Stretch

12.2 Developing Page Styles

Page styles are JSPX pages that can be used as templates to create new pages at runtime.

When users create a new page at runtime, the Create Page dialog, shown in Figure 12–2, displays the available page styles.

This section includes the following topics:

- Section 12.2.1, "How to Create a Page Style"
- Section 12.2.2, "What You May Need to Know About Developing Page Styles"
- Section 12.2.3, "How to Delete a Page Style"

Note: You can develop page styles in JDeveloper for use in WebCenter Portal. For more information, see Section 9.7, "Working with WebCenter Portal Resources."

12.2.1 How to Create a Page Style

The recommended method for creating page styles is to download one of the existing page styles and import it into JDeveloper. You can then use this page style as the starting point for your new page style and then export it for uploading back into your application.

Creating a page style this way also ensures that it is available in the Create Page dialog.

To create a page style:

1. In the deployed application, download one of the existing page styles. For more information, see the "Downloading an Asset" section in *Building Portals with Oracle WebCenter Portal*.
2. Import the downloaded page style into JDeveloper. For more information, see Section 9.6.2, "How to Import a Portal Resource into JDeveloper."
3. In the Application Navigator, right-click the imported page style, and choose **Open**.

4. In the visual editor, make any changes to the layout of content of the page style, in the same way as you would edit any page.

   For information about how to define the content of the page style, see Section 17.6.1, "How to Create Templates for Pages Created at Runtime" and Section 12.2.2, "What You May Need to Know About Developing Page Styles."

   Example 12–1 shows the code for a sample page style, /oracle/webcenter/portalapp/pages/pageStyles/TemplateFlowingTwoColumn.jspx, which creates a basic page designed to flow and provide two columns that are 35 percent and 65 percent in proportion. Example 12–2 shows the associated page definition file, /oracle/webcenter/portalapp/pages/pageStyles/TemplateFlowingTwoColumnPageDef.jspx.

Example 12–1 Source Code of a Custom Page Style

```
<?xml version='1.0' encoding='utf-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page"
xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"
xmlns:f="http://java.sun.com/jsf/core"
xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
xmlns:trh="http://myfaces.apache.org/trinidad/html" version="2.1">
  <jsp:directive.page deferredSyntaxAllowedAsLiteral="true"/>
  <jsp:directive.page contentType="text/html;charset=utf-8"/>
  <f:view>
    <af:document title="#{pageDocBean.title}" id="docrt">
      <af:form usesUpload="true" id="f1">
        <af:pageTemplate value="#{bindings.pageTemplateBinding.templateModel}"
        id="T">
          <f:facet name="content">
            <pe:pageCustomizable id="pcl1">
              <af:panelGroupLayout id="pgl1" layout="scroll"
              styleClass="replace_with_scheme_name"
              inlineStyle="replace_with_inline_style">
                <trh:tableLayout id="tl1" width="100%">
                  <trh:rowLayout id="rl1">
                    <trh:cellFormat id="cf1" width="35%" valign="top">
                      <cust:panelCustomizable id="hm_pnc1" layout="scroll"/>
                    </trh:cellFormat>
                    <trh:cellFormat id="cf2" width="65%" valign="top">
                      <cust:panelCustomizable id="hm_pnc2" layout="scroll"/>
                    </trh:cellFormat>
                  </trh:rowLayout>
                </trh:tableLayout>
                <trh:tableLayout id="tl2"/>
              </af:panelGroupLayout>
              <f:facet name="editor">
                <pe:pageEditorPanel id="pep1"/>
              </f:facet>
            </pe:pageCustomizable>
          </f:facet>
        </af:pageTemplate>
      </af:form>
    </af:document>
  </f:view>
</jsp:root>
```

Example 12–2 Page Definition of the Custom Page Style

```
<pageDefinition version="11.1.1.41.30" id="TemplateFlowingTwoColumnPageDef"
  Package="oracle.webcenter.siteresources.scopedMD.s8bba98ff_4cbb_40b8_beee_
296c916a23ed.pageStyle.gsr2b052c53_0eba_43fd_81e2_7f12dbb885a5">
  <parameters/>
  <executables>
    <page viewId="#{preferenceBean.defaultPageTemplate}"
          id="pageTemplateBinding" Refresh="ifNeeded"/>
    <taskFlow id="pageeditorpanel"
taskFlowId="#{pageEditorBean.pageEditorPanel}"/>
  </executables>
</pageDefinition>
```

5. Save your changes.
6. Export the page style. For more information, see Section 9.6.3, "How to Export a Portal Resource from JDeveloper."
7. Upload the exported page style into the deployed application. For more information, see the "Uploading an Asset" section in *Building Portals with Oracle WebCenter Portal*.

12.2.2 What You May Need to Know About Developing Page Styles

There are a few prerequisites for developing page styles to be exposed as portal resources.

- If a page style is based on a page template, then while designing the page style JSPX file, add the `content` facet, or any other facet defined in the page template, to contain page content.
- To make the page customizable, add a `Page Customizable` component within the content facet. As the `Page Customizable` contains a child `Panel Customizable` component by default, users can add content to the page at runtime.
- To enable dynamic selection of the page template to use for the page style, in the page style JSPX file, specify that the page template is defined in the page style's page definition, as follows:

  ```
  <af:pageTemplate value="#{bindings.pageTemplateBinding.templateModel}" id="T">
  ```

  You can then specify an EL value in the page style page definition to retrieve the name of the page template from the default page template setting, as follows:

  ```
  <page viewId="#{preferenceBean.defaultPageTemplateViewId}"
        id="pageTemplateBinding" Refresh="ifNeeded"/>
  ```

  At runtime, users with the appropriate permissions can switch to a different page template by selecting a new default page template in the runtime administration console. For more information, see the "Choosing a Default Page Template" section in *Administering Oracle WebCenter Portal*.
- You can create a managed bean that controls which page template to use, as shown in the following example:

  ```
  public class siteTemplatesManager {
      final private String templateA = "/templateA.jspx";
      final private String templateB = "/templateB.jspx";
      private String currentSiteTemplateViewId;

      public siteTemplatesManager() {
  ```

```
            super();
            currentSiteTemplateViewId = templateA;
        }
        public String gettemplateViewId() {
            return currentSiteTemplateViewId;
        }
        public void settemplateAViewId(ActionEvent ae) {
            currentSiteTemplateViewId = templateA;
        }
        public void settemplateBViewId(ActionEvent ae) {
            currentSiteTemplateViewId = templateB;
        }
    }
```

12.2.3 How to Delete a Page Style

If a page style is no longer required within your application, you can delete it.

When you delete a page style, it is no longer listed in the Create Page dialog. Deleting a page style has no impact on pages that have already been created using the page style.

To delete a page style, right-click the page style in the Application Navigator and choose **Delete** from the context menu. For more information, see Section 9.4, "Deleting Portal Resources."

12.3 Developing Task Flow Styles

Task flow styles are ADF task flows that can be used as templates to create new task flows at runtime.

You may choose to create task flow styles for the following purposes:

- To provide a specific, consistent layout for task flows.
- To seed a UI picker that can in turn be used in the task flows created from the task flow style, for example, a task flow style with a portal picker drop down. When a task flow based on this style is populated with an Activity Stream task flow, the picker drop down can be wired to an input parameter on the Activity Stream task flow. The Activity Stream task flow then displays activities specific to the selected portal.
- To provide a predefined UI that can be bound separately to data, for example, you can create a flowing data layout in the task flow style, create a task flow from it, drop a data control, then bind the flowing data layout to the data control.

When users create a new task flow at runtime, the Create New Task Flow dialog, shown in Figure 12–3, displays the available task flow styles.

This section includes the following topics:

- Section 12.3.1, "How to Create a Task Flow Style"
- Section 12.3.2, "What You May Need to Know About Developing Task Flow Styles"
- Section 12.3.3, "How to Delete a Task Flow Style"

Note: You can develop task flow styles in JDeveloper for use in WebCenter Portal. For more information, see Section 9.7, "Working with WebCenter Portal Resources."

12.3.1 How to Create a Task Flow Style

Creating a task flow style is the same as creating a task flow, but you create task flow styles only so that they can be used as templates to create task flows at runtime.

The recommended method for creating task flow styles is to download one of the existing task flow styles and import it into JDeveloper. You can then use this task flow style as the starting point for your new task flow style and then export it for uploading back into your application.

Creating a task flow style this way also ensures that it is available in the Create New Task Flow dialog.

To create a task flow style:

1. In the deployed application, download one of the existing task flow styles. For more information, see the "Downloading an Asset" section in *Building Portals with Oracle WebCenter Portal*.
2. Import the downloaded task flow style into JDeveloper. For more information, see Section 9.6.2, "How to Import a Portal Resource into JDeveloper."
3. In the Application Navigator, right-click the imported task flow style, and choose **Open**.
4. Make any changes to the code of the task flow style.
5. Save your changes.
6. Export the task flow style. For more information, see Section 9.6.3, "How to Export a Portal Resource from JDeveloper."
7. Upload the exported task flow style into the deployed application. For more information, see the "Uploading an Asset" section in *Building Portals with Oracle WebCenter Portal*.

12.3.2 What You May Need to Know About Developing Task Flow Styles

To expose a task flow style for use when creating task flows at runtime, you must consider the following requirements:

- Create *only one* view fragment for a task flow that will be used as a task flow style. The view fragment JSFF file must be created in the same location as the task flow definition XML file.
- Add a `Panel Customizable` component to the view fragment from the Composer tag library. This ensures that task flows based on this task flow style can be populated at runtime.
- Create a page definition for the view fragment, by right-clicking the JSFF file and choosing **Go to Page Definition**. The page definition for the view fragment must also be located in the same directory as the task flow definition XML file.
- If the task flow style refers to code, for example, using an EL value, then that code must be present in the deployed application.

12.3.3 How to Delete a Task Flow Style

If a task flow style is no longer required within your application, you can delete it.

When you delete a task flow style, it is no longer listed in the Create New Task Flow dialog at runtime. Deleting a task flow style has no impact on task flows that have already been created using the task flow style.

To delete a task flow style, right-click the task flow style in the Application Navigator and choose Delete from the context menu. For more information, see Section 9.4, "Deleting Portal Resources."

13 Developing Skins

This chapter describes how to use Oracle JDeveloper to create and manage skins for your WebCenter Portal Framework applications.

This chapter includes the following topics:

13.1 Introduction to Developing Skins

Skins help you define the colors, fonts, images, and some dimensional details like the height and width of your application components to represent your company's preferred look and feel.

Skins are based on the Cascading Style Sheet (CSS) specification. A skin is a CSS file containing various skin selectors that define the styles of your application components. You can adjust the look and feel of any component by changing its style-related properties. Use of a skin in an application helps you to avoid specifying styles for each component individually or inserting a style sheet on each page. Every component automatically uses the styles defined in the skin. Skins help you to change an application's appearance without changing the portal pages themselves.

ADF Faces skins drive the look and feel of Portal Framework applications. For more information about ADF Faces skins, see the "ADF Faces Skins" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

Seeded Skin

When you create a Portal Framework application, a seeded skin, `portal-skin.css`, is added to your application.

You can edit this seeded skin to meet your particular requirements, or you can create your own. If you choose to create your own skin, the seeded skin is still a useful tool for you to discover the different things you can achieve in your own skin.

Runtime Management

Portal Framework applications support the runtime administration of skins to help users continue developing a portal even after it has been deployed. With runtime administration, authorized users can manage an application's skins, and create new ones, in a browser-based environment, with no requirement to install or understand JDeveloper. For more information, see Section 9.5, "Working with Portal Resources at Runtime."

Round-Trip Development

You can bring skins that have been created or modified at runtime back into JDeveloper, to ensure that any changes are not lost if the portal is redeployed. You can also edit these skins to further enhance them if necessary, and upload them back into the deployed portal. For more information, see Section 9.6, "Working with Round-Trip Development."

13.2 Best Practices for Developing Skins

When skinning WebCenter Portal, you can look at it from coarse-grain and fine-grain standpoint. At the coarse-grain level many large elements on the page, such as the background and the center of the page, can use very basic styling techniques to impart a look and feel to particular corporate brand with very little effort. At the fine-grain level you can apply the styling to specific components and controls within the page. The most efficient way to develop your skin is to start by defining the coarse-grain elements and then use fine-grain styling to tune your overall look and feel to be inline with your corporate brand.

In many cases a hybrid model of styling works very well. Taking the coarse-grained elements (page background, main portion of the body, and so on) and using traditional CSS approaches with those, but then getting specific using the ADF skinning, will work together to generate the overall appearance for WebCenter Portal.

An example of a hybrid approach would be using technology in WebCenter Portal to generate a menu that uses unordered lists and list items, then applying traditional CSS to them. Even though you are benefiting from WebCenter Portal's navigation models, you are not doing traditional ADF skinning – but instead using standard CSS.

Expression Language (EL) allows you to access the various objects for navigation within your template design. Looping in EL is simple and coding is done inline with the page template. You can mix regular HTML directly into the looping markup.

13.2.1 Externalizing Static Assets

When using coarse-grained techniques in addition to ADF styling, it is often helpful to hold various styling assets outside of WebCenter Portal. To do this you can use WebCenter Content to manage all of the unstructured assets for WebCenter Portal. They can include things like CSS and images that you want manage within your environment and provides revision control and workflow. This is a best practice if you want to allow design teams to access and work with WebCenter Portal without involving the development team for each and every change

13.3 Creating a Skin

By default, Portal Framework applications use the `portal` skin, which is defined in the `portal-skin.css` file. You can easily edit this file to suit your requirements. However, if you want to use a custom skin in your application, you must create a CSS file and define the required skin selectors.

This section includes the following topics:

- Section 13.3.1, "How to Create a CSS File"
- Section 13.3.2, "How to Define Skin Style Selectors"
- Section 13.3.3, "What You May Need to Know About Skin-Related Artifacts"

13.3.1 How to Create a CSS File

For information about creating an ADF Faces skin, see the "How to Add a Custom Skin to an Application" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

> **Note:** When you create a CSS file, by default, JDeveloper places it under the `*Application_Root*/Portal/public_html/css` folder.
>
> However, skins created at this default location are not included on the Assets page of the runtime administration console, and thus cannot be managed at runtime.
>
> To enable authorized users to manage a skin at runtime, you must create it in the following directory:
>
> `*Application_Root*/Portal/public_html/oracle/webcenter/portalapp`
>
> By default, Portal Framework applications include a separate `skins` directory.
>
> For more information, see Section 9.5.1.2, "How to Include a Portal Resource on the Assets Page."

13.3.2 How to Define Skin Style Selectors

After creating the CSS file, you must define the required ADF Faces skin selectors for the components in your application. For example, you can use the `.AFDefaultFontFamily:alias` selector to specify the font family for your application as follows:

```
.AFDefaultFontFamily:alias {
font-family: Tahoma, Verdana, Helvetica, sans-serif;
}
```

For information about:

- ADF Faces skin selectors in general, refer to the "Skin Style Selectors" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*. Also refer to Oracle JDeveloper's online help for information about the selectors that you can use in a skin. These are documented in the "Skin Selectors for Fusion's ADF Faces Components" and "Skin Selectors for Fusion's Data Visualization Tools Components" topics in JDeveloper's online help.
- Defining ADF Faces component style selectors, see the "Defining Skin Style Properties" and "Changing the Style Properties of a Component" sections in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

13.3.3 What You May Need to Know About Skin-Related Artifacts

Oracle recommends that you store asset-related artifacts, such as images and icons, on your content server and that you create a folder structure on your content server specifically for asset artifacts so that content is easy to identify and move, if required.

13.4 Editing a Skin

You can make changes to your skin after its initial creation by editing the CSS file to edit or add style selectors. You can also edit the seeded `portal` skin by editing the `portal-skin.css` file.

To edit a skin:

1. In the Application Navigator, right-click the skin that you want to edit, for example **portal-skin.css**, and choose **Open**.
2. In the source code for the skin, define the required ADF Faces skin selectors for the components in your application. For example, to set a font size of `16px` for your application content, you can use the `.AFDefaultFont:alias` skin selector as follows:

   For more information, see Section 13.3.2, "How to Define Skin Style Selectors."
3. Save the CSS file.

13.5 Applying a Skin to Your Application

Every Portal Framework application defines a default skin that determines the appearance of all the pages within the application.

When you first create a Portal Framework application, the seeded skin, portal, is set as the application's default skin. If you subsequently create your own skin, you can set it as the default instead.

You can set the default skin for a Portal Framework application by editing the `oracle.webcenter.portalapp.skin` preference in the `adf-config.xml` file.

> **Note:** If runtime administration is enabled, authorized users can change the skin at runtime. For information, see the "Changing the Skin for a Portal" section in *Building Portals with Oracle WebCenter Portal*.

To apply a skin to your application:

1. In the Application Resources pane of the Application Navigator, right-click the **adf-config.xml** file, and choose **Open**.

   > **Tip:** To locate the `adf-config.xml` file, expand the **Descriptors** node, and then the **ADF META-INF** node.
2. Click the **Source** tab.
3. Locate the ADF preference with the following ID:

   ```
   oracle.webcenter.portalapp.skin
   ```
4. Set the value attribute to the family name of the skin that you want to apply to your application, for example:

   ```
   value="portal"
   ```

   This value must be same as the value specified for the `Skin Family` attribute in the Create Portal Resource or Update Portal Resource dialog of the skin.

5. Optionally, in the `desc` property, specify a description of the skin you want to apply. At runtime, this value shows up as the display name of the skin.
6. The `display` property specifies whether the skin is listed in the skin picker at runtime. Example 13–1 shows an example of the complete preference element.

Example 13–1 The Default Skin ADF Preference

```
<portal:preference id="oracle.webcenter.portalapp.skin"
                   desc="Default Portal Skin" value="portal"
                   resourceType="Skin" display="true"/>
```

7. Save the `adf-config.xml` file.

> **Note:** If you want to apply a skin created at a location other than `*Application_Root*/Portal/public_html/oracle/webcenter/portalapp/skins`, you must register the skin in the `trinidad-skins.xml` file and configure your application to use the skin. For information, see the "How to Register a Custom Skin" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

13.6 Conditionally Changing Skins for Users

You can assign different skins per user, page, application, and so on, without impacting the actual application logic. To conditionally set a skin, you use the `<skin-family>` entry in the `trinidad-config.xml` file.

You can use EL expressions that can be evaluated dynamically to determine the skin to display. For example, if you want to use the German skin when the user's browser is set to the German locale, and to use the English skin otherwise, use the following `<skin-family>` entry in the `trinidad-config.xml` file:

```
<skin-family>#{facesContext.viewRoot.locale.language=='de' ? 'german' :
'english'}</skin-family>
```

For more information, see the "How to Configure a Component for Changing Skins Dynamically" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

> **Note:** The default value of `<skin-family>` is `#{preferenceBean.defaultTrinidadSkin}`. If you change the default value, your application users cannot set skins at runtime in the Resource Manager.

You can also use the `SkinSetting` API to set the skin for a user conditionally. Refer to the API for information about the calls you can use. The API is available here:

`http://download.oracle.com/docs/cd/E15523_01/apirefs.1111/e15995/oracle/webcenter/generalsettings/model/SkinSetting.html`

13.7 Deploying a Skin as a Separate Shared Library

Oracle WebCenter Portal provides various default skins. All Oracle WebCenter Portal skin artifacts are available in the shared library, `oracle.webcenter.skin`. The shared library is packaged as an EAR, and includes several skin JARs that contain the following types of files:

- .css file, the skin selector file
- .png, the image files
- .js, the javascript file
- trinidad-skins.xml, the skin definition file

By default, the oracle.webcenter.skin shared library is referenced by all Portal Framework applications and Portlet Producer applications. Therefore, all skins are available through the classpath. When you use a portlet in your Portal Framework application, the portlet is rendered using the skin defined for your application. Therefore, to achieve skin sharing, the same skin must be accessible through the shared library, to both the Portal Framework application and the Portlet Producer application.

However, there may be a case where you modified portal-skin.css in your Portal Framework application. So, the skin available in the shared library is not the same as the updated version available in the Portal Framework application. If the skin's version in the Portal Framework application is not identical to the skin in the shared library, skin sharing between Portal Framework application and Portlet Producer application will fail because the portlet producer can access only the original version of the skin packaged in the shared library, while the Portal Framework application uses the modified skin. The Portal Framework application renders with the latest skin changes, while the portlet within the same application renders with the original skin from the shared library. This behavior is called skin coordination.

Instead of using the default skin, you may create a new custom skin in your Portal Framework application, either as a portal resource or define it in the trinidad-skins.xml with a unique skin family ID. If your application uses a portlet, the portlet producer will not be able to find the custom skin in the shared library. This causes a skin mismatch problem, and the portlet is rendered with a bare bone, simple skin rather than the custom skin used by the Portal Framework application.

Therefore, whenever you modify a skin or create a custom skin for your Portal Framework applications, you must deploy the new or modified skin as a shared library.

To deploy a skin as a shared library:

1. Ensure that a copy of trinidad-skins.xml is available in the WEB-INF folder of your Portal Framework application. If not, create a new one.
2. Update trinidad-skins.xml to point to the newly created skin CSS file.
3. Create a new MANIFEST.MF file in the project and provide the details for the new shared library.

   The following is a sample code in a MANIFEST.MF file:

```
Manifest-Version: 1.0
 Ant-Version: Apache Ant 1.7.1
 Created-By: 1.6.0 (Sun Microsystems, Inc.)
 Extension-Name: oracle.webcenter.customskin
 Implementation-Title: oracle.webcenter.customskin
 Implementation-Version: 11.1.1
 Implementation-Vendor: Oracle
 Specification-Title: Custom WebCenter shared library
 Specification-Version: 11.1.1
```

4. Create a new deployment profile:
    a. Right-click the **Portal** project, then choose **New**.
    b. In the New Gallery dialog, choose **General** > **Deployment Profile** > **Shared Library JAR File**, and click **OK**.
    c. In the Create Deployment Profile dialog, in the **Deployment Profile Name** field, enter the profile name and click **OK**.
    d. In the Edit JAR Deployment Profile Properties dialog, ensure that **Include Manifest File** check box is selected.
    e. In the **Additional Manifest Files to Merge into MANIFEST.MF** section, use the **Add** button to add `trinidad-skins.xml` and the desired skin CSS file in the shared library.
    f. Click **OK**.
    g. In the Project Properties dialog, click **OK**.
5. Right-click the **Portal** project, choose **Deploy**, then select the JAR shared library deployment profile name.
6. In the Deploy dialog, select **Deploy to a Weblogic Application Server**, and click **Next**.
7. Select the WebLogic Server that hosts your portlet producer, and click **Next**.
8. Ensure that **Deploy as a Shared Library** is selected, then click **Finish**.
9. Update `/META-INF/weblogic-application.xml` for both the Portal Framework application and the Portlet Producer application to reference the custom skin shared library.

```
 <library-ref>
    <library-name>Custom_Library_Name</library-name>
    <specification-version>Library_Version</specification-version>
  </library-ref>
```

10. Redeploy both the Portal Framework application and the Portlet Producer application.

    The custom skin can now be shared between these applications.

Note: The custom skin shared library must be deployed, and must appear as "Active" on the WebLogic Server console before true skin sharing can be achieved. If there is any issue with the shared library JAR (like incorrect manifest or incorrect version), the deployed shared library will not show up in the WebLogic Server console as "Active".

Note: If you have multiple skin files, you can put all skin artifacts into one shared library JAR, and merge the two `trinidad-skins.xml` files into a single file. You can keep using this shared library for all your custom skins development.

13.8 Troubleshooting Problems with Skins

This section provides information to assist you in troubleshooting problems you may encounter while using skins.

Problem

Your application does not reflect skin changes made at design time.

Solution

During development, after you make changes to a skin, you can see your CSS changes without restarting the server. The CHECK_FILE_MODIFICATION context parameter requires the server to check the timestamp on a skin and reload it if the skin has changed. This setting is automatically set to true if iterative development is enabled for your application. If iterative development is not enabled, ensure that CHECK_FILE_MODIFICATION is set to true in WEB-INF/web.xml, as shown in the following example:

```
<context-param>
<param-name>org.apache.myfaces.trinidad.CHECK_FILE_MODIFICATION</param-name>
<param-value>true</param-value>
</context-param>
```

Problem

Skin selectors appear encoded and compressed when you open a skin's CSS file in a browser.

Solution

By default, class names in a CSS file are compressed to reduce the overall size of the file. So, the skin selectors you see, for example in the Firebug extension of Firefox, are encoded values bearing little relationship to the original names. For example, a CSS file may contain an entry that looks like:

```
 .x123 {color: #534741}
```

It is easier to examine a CSS file when the compression is turned off. You can disable compression by setting the value of DISABLE_CONTENT_COMPRESSION context parameter to true in WEB-INF/web.xml, as shown in the following code:

```
<context-param>
<param-name>org.apache.myfaces.trinidad.DISABLE_CONTENT_COMPRESSION</param-name>
<param-value>true</param-value>
</context-param>
```

With the compression turned off, the entry may look like:

```
.af_panelFormLayout_label-cell
{
color: #534741
}
```

For better performance, it is recommended that you turn on CSS compression in a production environment. If you turn off CSS compression, it may lead to skin mismatching, as described in the next problem scenario.

Problem

When you run a page containing a portlet, the portlet is rendered without any styles or formatting.

Solution

When your application consumes a portlet based on an ADF application, the portlet producer tries to match the skin of your application. If the skins match, the producer uses your application's skin.

Skin compression is not taken into account during skin matching. If the skin compression settings differ but the skins match, the producer returns IDs like ".x123" and expects to find these values in your application; whereas your application may return values like ".af_panelFormLayout_label-cell". Therefore, no styles are found and the portlet rendering fails.

Your application and portlet producers must use the same skin compression settings. If your application uses an uncompressed skin, your portlet producer also must use an uncompressed skin.

Problem

Style sheet files (CSS) within the MDS folder structure (`oracle/webcenter/portalapp`) do not take effect as specified in `trinidad-skins.xml`.

Solution

For style sheet files (CSS) within the MDS folder structure, prefix "`mds:`" to the path in `trinidad-skins.xml`, as shown in the following example:

```
<skin>
   <id>myskin2.desktop</id>
   <family>myskin2</family>
   <render-kit-id>org.apache.myfaces.trinidad.desktop</render-kit-id>
 <style-sheet-name>mds:/oracle/webcenter/portalapp/css/skin.css</style-sheet-name>
   <extends>fusion.desktop</extends>
</skin>
```

Problem

The weblogic log output includes the following message:

```
<SkinFactoryImpl> <getSkin> Cannot find a skin that matches family portal and
version 1.1. We will use the skin portal.desktop
```

Solution

Edit your application's `trinidad-config.xml` file and remove the `<skin-version>` element.

```
<?xml version="1.0" encoding="UTF-8"?>
<trinidad-config xmlns="http://myfaces.apache.org/trinidad/config">
  <skin-family>#{preferenceBean.defaultTrinidadSkin}</skin-family>
  <skin-version)v1.1</skin-version>
</trinidad-config>
```

14

Developing Resource Catalogs

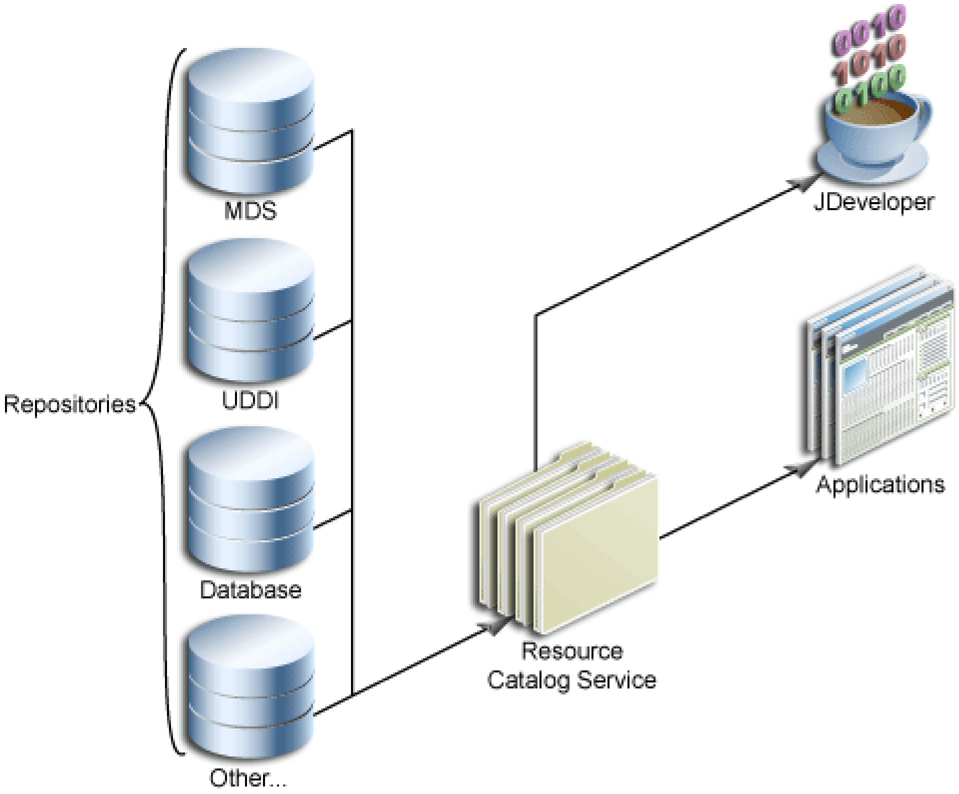
This chapter describes how to use Oracle JDeveloper to create and manage resource catalogs for your WebCenter Portal Framework applications.

This chapter includes the following topics:

14.1 Introduction to Resource Catalogs

Resource catalogs provide a consolidated view of the contents of one or more otherwise unrelated repositories in a unified search and browse user interface. They provide a mechanism for defining and organizing all the resources available for inclusion in a page, page template, or task flow. Resources originate in their source repository and are then exposed through the resource catalog as shown in Figure 14–1.

Figure 14–1 Resource Catalog Overview



When using JDeveloper, you see two types of resource catalogs—design time resource catalogs and runtime resource catalogs.

Design time resource catalogs are available in the Resource Palette and are like favorites lists for developers. The WebCenter Portal - Services Catalog is a design time catalog that is available out-of-the-box when you install the WebCenter Portal extension bundle. You can add task flows and data controls from this catalog to a Portal Framework application. In addition to the WebCenter Portal - Services Catalog, you can define connections and create catalogs to organize resources exposed by those connections. Such resources can be re-used in any application that you are developing.

See Also:

- Section 2.2.2, "Installing the WebCenter Portal Extension for JDeveloper"
- Oracle JDeveloper online Help for more information about the Resource Palette and catalogs.

  To locate this information in JDeveloper, from the **Help** menu, select **Table of Contents**. In Help Center, expand **JDeveloper Basics** and select **Working with the Resource Palette**.

In WebCenter Portal and deployed Portal Framework applications, runtime resource catalogs determine the resources available when using Composer to populate pages, task flows, and page templates.

See Also:

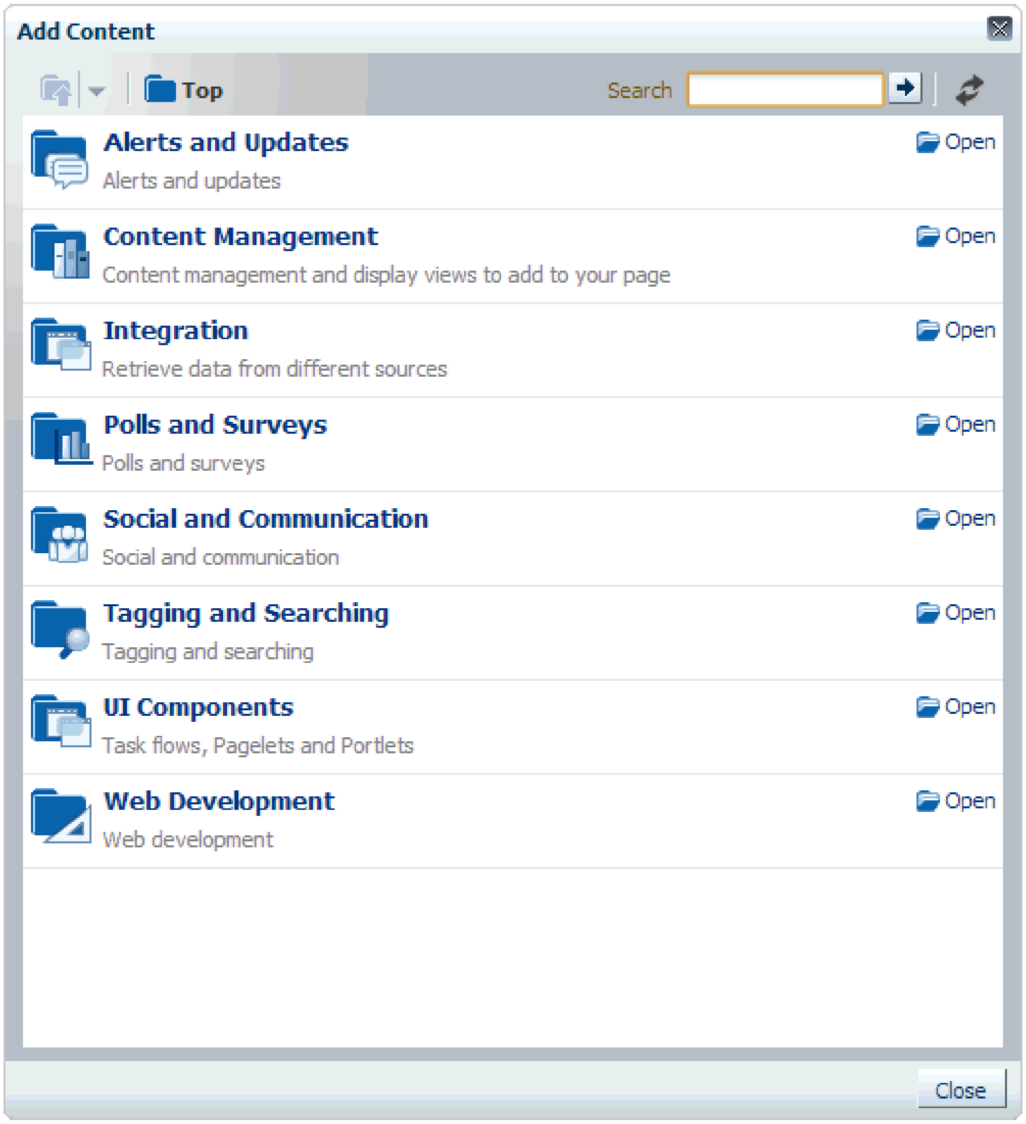
- Section 18.1, "Designing Editable Pages Using Composer Components"
- Chapter 11, "Developing Page Templates"

Seeded Resource Catalog Configuration

When you add a `Page Customizable` component to a page in your application, a seeded resource catalog with the catalog definition file, `default-catalog.xml`, is configured in the application. Depending on the type of application you created, the catalog definition file is created in one of the following folders:

- In a Portal Framework application, the `default-catalog.xml` file is located in the *`Application_Root`*`/Portal/public_html/oracle/webcenter/portalapp/catalogs` directory. The resource catalog in this case contains the folders shown in Figure 14–2.

Figure 14–2 Default Resource Catalog



Alerts and Updates — Open
Alerts and updates

Content Management — Open
Content management and display views to add to your page

Integration — Open
Retrieve data from different sources

Polls and Surveys — Open
Polls and surveys

Social and Communication — Open
Social and communication

Tagging and Searching — Open
Tagging and searching

UI Components — Open
Task flows, Pagelets and Portlets

Web Development — Open
Web development

- In a non-Portal Framework application, the `default-catalog.xml` file is located in the *`APPLICATION_ROOT`*`/Portal/src/portal` directory. The resource catalog in this case contains the **ADF Faces Components** folder, which contains ADF Faces components that a user can add to the page.

If you have registered a portlet producer with your application, then that producer's portlets are displayed in a Portlets folder in the resource catalog. If you have not registered any producers, the Portlets folder is hidden.

You can create your own resource catalogs or modify the seeded catalog and include components relevant to your business.

Runtime Management

Portal Framework applications support the runtime administration of resource catalogs to help users continue developing a portal even after it has been deployed. With runtime administration, authorized users can create and manage resource catalogs in a browser-based environment, with no requirement to install or understand JDeveloper. For more information, see Section 9.5, "Working with Portal Resources at Runtime."

Round-Trip Development

You can bring runtime-created or modified resource catalogs back into JDeveloper, to ensure that any changes are not lost when the portal is redeployed. You can also edit these resource catalogs to further enhance them if necessary, and upload them back into the deployed portal. For more information, see Section 9.6, "Working with Round-Trip Development."

14.2 Creating a Resource Catalog

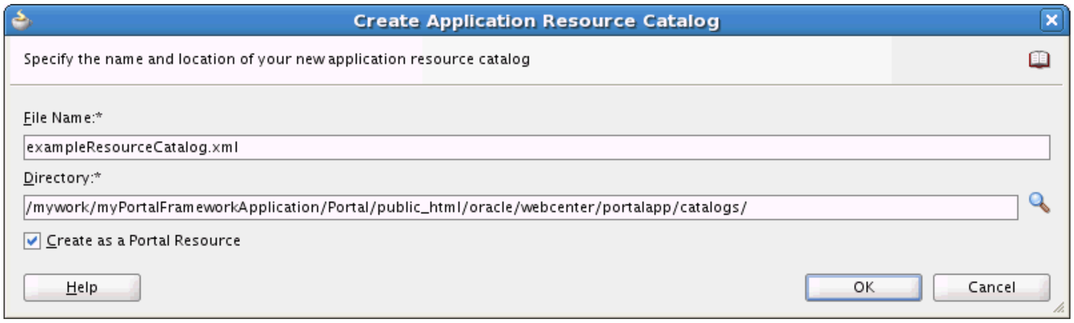
If the seeded resource catalog created for your application does not meet your requirements, or if you want to configure multiple resource catalogs, you can create your own resource catalogs with all the required resources.

> **Note:** To correctly implement resource catalogs, you must know where the application looks for the definitions and the XML schema upon which the definitions are based. See Appendix B, "Composer Component Properties and Files" for further information.

To create a resource catalog:

1. In the Application Navigator, right-click the node where you want to create the resource catalog (typically, `/oracle/webcenter/portalapp/catalogs`) and choose **New**.
2. In the New Gallery, expand **Web Tier**, select **Portal Framework** and then **Resource Catalog**, and click **OK**.
3. In Create Application Resource Catalog dialog, in the **File Name** field, enter a name for the XML file that represents the resource catalog, for example, `users-catalog.xml`.

Figure 14–3 The Create Application Resource Catalog Dialog



Create Application Resource Catalog

Specify the name and location of your new application resource catalog

File Name:*

exampleResourceCatalog.xml

Directory:*

/mywork/myPortalFrameworkApplication/Portal/public_html/oracle/webcenter/portalapp/catalogs/

☑ Create as a Portal Resource

4. In the **Directory** field, enter the full directory path of the location under which to create the resource catalog definition XML file.

> **Note:** In a Portal Framework application, to expose the new resource catalog in the Assets page of the runtime administration console, you must create the resource catalog under the `*Application_Root*/Portal/public_html/oracle/webcenter/portalapp` directory. By default, Portal Framework applications include a separate `catalogs` directory.
>
> In a non-Portal Framework application, create the resource catalog in the `*Application_Root*/Portal/src/portal directory`.

> **Tip:** If you do not select this option now, you can add the resource catalog to the runtime administration console later by right clicking it and choosing **Create Portal Resource**.

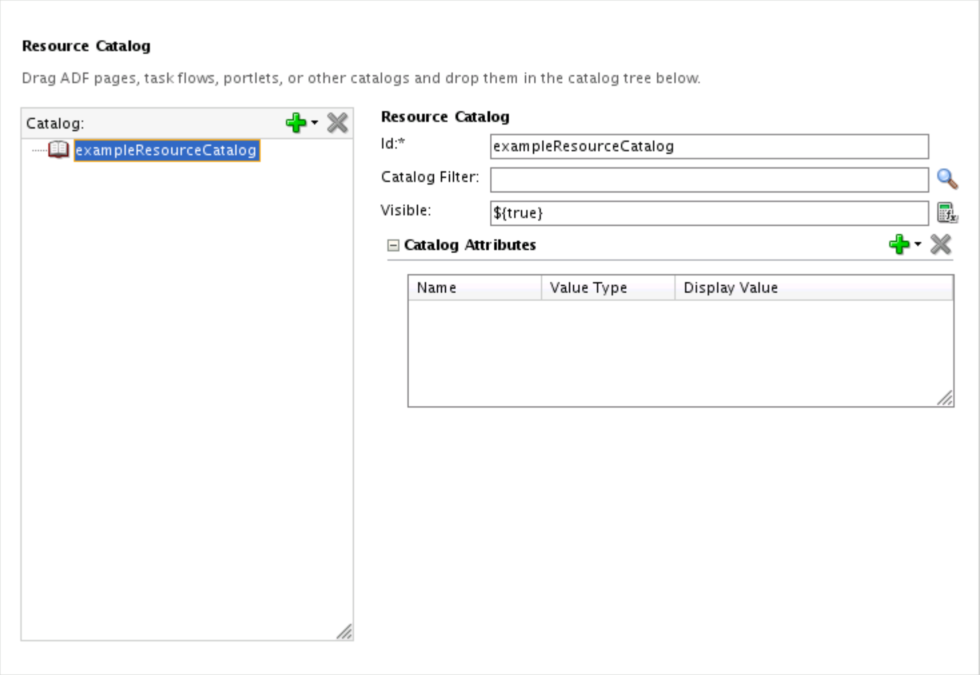
5. Select **Create as Portal Resource** to enable users with the appropriate permissions to manage the resource catalog at runtime in the Assets page of the runtime administration console.

> **Note:** This option is available in a Portal Framework application only if the directory you entered is the `*Application_Root*/Portal/public_html/oracle/webcenter/portalapp` directory or one of its subdirectories.

6. Click **OK**.

   When you create a resource catalog in a Portal Framework application, a catalog definition file (an XML file) is created for the resource catalog in the specified directory. The catalog definition file opens in Design view.

Figure 14–4 A Resource Catalog in Design View



Resource Catalog

Drag ADF pages, task flows, portlets, or other catalogs and drop them in the catalog tree below.

Catalog: exampleResourceCatalog

Resource Catalog

Id:* exampleResourceCatalog

Catalog Filter:

Visible: ${true}

Catalog Attributes

Name	Value Type	Display Value

The catalog definition file is initially empty, so you must edit it to design the structure and content of your resource catalog. For more information, see Section 14.3, "Editing a Resource Catalog."

> **Tip:** If you do not want to add resources from scratch, as a starting point, you could copy the source code of the `default-catalog.xml` file into the Source view of your new catalog definition.

If you created the resource catalog under the appropriate directory and selected the Create as a Portal Resource option, the resource catalog is automatically available for runtime management. For more information, see Section 9.5, "Working with Portal Resources at Runtime."

14.3 Editing a Resource Catalog

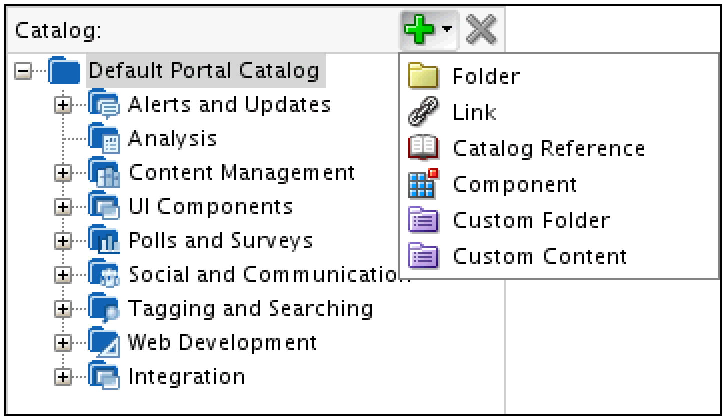
To define the content of your resource catalog you can edit the seeded resource catalog, `default-catalog.xml`, to add the resources that you want users to be able to add to the pages and task flows in your application. The seeded resource catalog is created automatically when you create an application using the WebCenter Portal Framework Application template.

You can also create your own resource catalog and edit that. For more information, see Section 14.2, "Creating a Resource Catalog."

You can add resources to a resource catalog in two ways:

- Drag and drop resources from different areas in JDeveloper onto the resource catalog in Design view.
- Use the options on the Add new node menu in the Design view for the resource catalog (Figure 14–5).

Figure 14–5 The Resource Catalog Add New Node Menu



In the Design view for a resource catalog you can also rearrange, modify, and delete existing resources.

The left half of the XML editor contains the Catalog section, which displays the hierarchical structure of components in the catalog. The right half of the page provides fields to define attributes and parameters on a selected resource.

> **Tip:** If you are creating a resource catalog from scratch, you can refer to the default catalog definition file to get an idea of how resources are included in the catalog.

> **Note:** If you are using a standalone version of Composer (that is, Composer without WebCenter Portal Framework), you can add a resource to the catalog by directly adding a `<resource>` element to the source of the catalog definition file. For more information, see Section C.3.12, "resource."

> **See Also:** For details about the catalog definition file and its attributes:
>
> - Section C.2, "XML Schema"
> - Section C.3, "Catalog Definition Attributes"

This section includes the following topics:

- Section 14.3.1, "How to Define Connections to Resources"
- Section 14.3.2, "How to Drag and Drop a Resource into a Resource Catalog"
- Section 14.3.3, "How to Add a Link to a Resource Catalog"
- Section 14.3.4, "How to Add a Folder to a Resource Catalog"
- Section 14.3.5, "How to Add a Custom Component to a Resource Catalog"
- Section 14.3.6, "How to Add a Custom Folder to a Resource Catalog"
- Section 14.3.7, "How to Add a Custom Content Provider to a Resource Catalog"
- Section 14.3.8, "How to Add a Resource Catalog to Another Resource Catalog"
- Section 14.3.9, "How to Set Display Options for a Resource Catalog or Resource"

- Section 14.3.10, "How to Rearrange Resources in a Catalog"
- Section 14.3.11, "How to Show or Hide a Resource Catalog or Resource"
- Section 14.3.12, "How to Edit a Resource in a Resource Catalog"
- Section 14.3.13, "How to Delete a Resource from a Resource Catalog"
- Section 14.3.14, "How to Expose Data Controls Created at Design Time in a Resource Catalog"
- Section 14.3.15, "How to Expose Data Controls Created at Runtime in a Resource Catalog"
- Section 14.3.16, "How to Control Visibility of Portlets in a Resource Catalog"

14.3.1 How to Define Connections to Resources

Many resources, such as WebCenter Portal tools and services and portlets, are accessed through connections defined in your application's `connections.xml` file. Therefore, you must create connections before adding such resources to the resource catalog.

You can create connections to resources in different ways. This section describes how to create a connection from the Resource Palette. For information about additional ways to create connections, see Section 4.2, "Preparing Your Framework Application for Tools and Services."

To create a connection from the Resource Palette:

1. From the Resource Palette, click the **New** icon in the upper left corner.
2. Choose **New Connection** and then the type of connection you want to create.

   The wizard for your connection type appears.
3. Step through the wizard filling in the necessary information about the connection.

   When you click **Finish**, the connection should appear in the Resource Palette under **Connections**.
4. Right click the connection in the Resource Palette and choose **Add to Application** from the context menu.

   Alternatively, you can drag and drop the connection from the Resource Palette to the Application Resources panel of the Application Navigator.

14.3.2 How to Drag and Drop a Resource into a Resource Catalog

You can add the following resources to a catalog by dragging and dropping them onto the desired location in the Design view of the catalog definition file:

- **Portlets,** from the Application Resources pane or the Resource Palette.
- **Content,** from a WebCenter Content connection in the Application Resources pane or Resource Palette.
- **Task flows,** from the Application Resources pane or the Resource Palette.

> **Note:** If you add an ADF task flow to the catalog and want to export the catalog to an already deployed application, then you must deploy the task flow as a shared library to the deployed application.
>
> For more information, see Section 15.4, "Adding Custom Task Flows to a Page."

- **Resource catalogs,** from the Application Navigator. This embeds one resource catalog inside another.

14.3.3 How to Add a Link to a Resource Catalog

You can add links to the following resources to a catalog:

- **Task Flow**: Link to a WebCenter Portal tools and services task flow (in the Resource Palette) or a custom task flow created in JDeveloper (in the Application Navigator).
- **Portlet**: Link to any registered portlet producer. See Chapter 63, "Consuming Portlets" for detailed information about registering portlet producers and adding portlets to a page.
- **Content**: Link to a file or directory from an existing WebCenter Content connection.
- **Other**: Link to a custom component that you create by providing the XML code for that component.

To add a link:

1. In the Application Navigator, right-click the resource catalog to which you want to add the link, and choose **Open**.
2. In the Design view for the resource catalog, in the Catalog section on the left side, select the node in the resource catalog under which you want to add the link.
3. Click the **Add new node** icon and choose **Link**.

   A `url` element is added to the catalog. The right side of the page displays fields to define the new link's attributes and parameters.
4. The **Id** field is automatically populated with generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the catalog definition file.
5. From the **Type** list, select the type of resource that you want to create. You can choose **Taskflow**, **Portlet**, **Content**, or **Other**.

   > **Notes:** If you add an ADF task flow to the catalog and want to export the catalog to an already deployed application, then you must deploy the task flow as a shared library to the deployed application.
   >
   > For more information, see Section 15.4, "Adding Custom Task Flows to a Page."
6. If you are adding a link to a custom resource (that is, you selected **Other** from the Type list), then specify the factory class of the component. For all other resource types, the **Factory Class** value is automatically populated with the appropriate value for the selected link type.

   The factory classes for the available resource types are as follows:

   - Task flow: `oracle.webcenter.portalframework.sitestructure.rc.TaskFlowResourceFactory`

- Portlet: oracle.webcenter.portalframework.sitestructure.rc.PortletResourceFactory
- Content: oracle.webcenter.content.model.rc.ContentUrlResourceFactory

For more information, see Section C.4, "Factory Classes Available for Adding Dynamic Resources to the Catalog."

7. In the **URL** field, enter the URL to access the resource. If you do not know the location, click the **Browse Files** icon to browse for available resources. Table 14–1 provides the URL format to used for each resource type.

Table 14–1 URL Format for the Different Resource Types

Resource Type	Location in the Application	URL Format
Task Flow from an ADF Library	Resource Palette	`taskflow://`*`pathToTaskFlow/taskFlowDefinitionFilName#taskFlowId`*
Task Flow Within the Application	Application Navigator	`taskflow://`*`pathToTaskFlow/taskFlowDefinitionFileName#taskFlowId`*
Portlet	Portlet producer connection in the Application Resources pane or in the Resource Palette	`portlet://`*`producerId/portletId`*
Content	Content Repository connection in the Application Resources pane	`content://`*`contentConnectionId/documentId`*

Note: If you enter the URL for a portlet or content type resource manually, and if the connection for that resource is available only in the Resource Palette, then ensure that you first add the connection to the application.

8. In the **Visible** field, specify whether the link is listed in the resource catalog at runtime. The default value is the EL expression `#{true}`, which means the link is listed for all users at all times. Enter `false` or `#{false}` to hide the link from all users at all times, or enter an EL expression to specify the conditions under which the link is listed. If the field is empty, the value defaults to `true`.

9. Optionally, in the URL Attributes section, specify any desired display options for the link. For more information, see Section 14.3.9, "How to Set Display Options for a Resource Catalog or Resource."

10. In the URL Parameters section, enter values, as desired, for any parameters supported by the resource. You can bind these parameters to other artifacts in the application.

    Click the **Add** icon to create a row in the Parameters table.

11. Save the catalog definition file.

14.3.4 How to Add a Folder to a Resource Catalog

You can create folders to group similar resources, thereby organizing the catalog better.

To add a folder:

1. In the Application Navigator, right-click the resource catalog to which you want to add the folder, and choose **Open**.

2. In the Design view for the resource catalog, in the Catalog section on the left side, select the node in the resource catalog under which you want to add the folder.

3. Click the **Add new node** icon and choose **Folder**.

   A `folder` element is added to the catalog. The right side of the page displays fields to define the new folder's attributes and parameters.

4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the resource catalog.

5. In the **Visible** field, specify whether the folder is listed in the resource catalog at runtime. The default value is the EL expression `#{true}`, which means the folder is listed for all users at all times. Enter `false` or `#{false}` to hide the folder from all users at all times, or enter an EL expression to specify the conditions under which the folder is listed. If the field is empty, the value defaults to `true`.

6. Optionally, in the Folder Attributes section, specify any desired display options for the folder. For more information, see Section 14.3.9, "How to Set Display Options for a Resource Catalog or Resource."

7. In the Folder Parameters section, enter values, as desired, for any parameters supported by the folder. You can bind these parameters to other artifacts in the application.

   Click the **Add** icon to create a row in the Parameters table.

8. Save the catalog definition file.

14.3.5 How to Add a Custom Component to a Resource Catalog

You can add custom component to a resource catalog, such as simple ADF Faces components, compound objects containing two or more components, and JSF Verbatim tags that let you add arbitrary HTML content inside them. An example for arbitrary HTML that you can add to your catalog is a YouTube video.

To add a custom component:

1. In the Application Navigator, right-click the resource catalog to which you want to add the custom component, and choose **Open**.

2. In the Design view for the resource catalog, in the Catalog section on the left side, select the node in the resource catalog under which you want to add the custom component.

3. Click the **Add new node** icon and choose **Component**.

   A `component` element is added to the catalog. The right side of the page displays fields to define the new component's attributes and parameters.

4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the resource catalog.

5. In the **Component Factory** field, enter the name of a Java class that implements the `oracle.adf.rc.component.ComponentFactory` interface and creates an instance of the component based on a set of parameters, for example, `oracle.adf.rc.component.XmlComponentFactory`.

   As you type the name, the field auto-completes with valid factory classes from the classpath. You can also use the **Browse** icon to select a class.

For more information, see Section C.4, "Factory Classes Available for Adding Dynamic Resources to the Catalog."

6. In the **Visible** field, specify whether the component is listed in the resource catalog at runtime. The default value is the EL expression `#{true}`, which means the component is listed for all users at all times. Enter `false` or `#{false}` to hide the component from all users at all times, or enter an EL expression to specify the conditions under which the component is listed. If the field is empty, the value defaults to `true`.

7. Optionally, in the Component Attributes section, specify any desired display options for the custom component. For more information, see Section 14.3.9, "How to Set Display Options for a Resource Catalog or Resource."

8. Use the Component Parameters section to add parameters that were defined when implementing the factory class.

   For example, if you are adding an XML component, click the **Add** icon in the Parameters section and select **xml**. In the new row that is displayed, specify the XML code for the component in the value field.

   > **Note:** The xml option is displayed only if you selected `oracle.adf.rc.component.XmlComponentFactory` as the component factory.

   To ensure that the component works properly, you must specify the custom component ID to be `#`, and provide the namespace, as shown in the following example:

   ```
   <cust:panelCustomizable id="#"
   xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"/>
   ```

   The `#` value ensures that a unique ID is generated dynamically for the component.

9. Save the catalog definition file.

14.3.6 How to Add a Custom Folder to a Resource Catalog

You can add a folder using a resource catalog adapter so that the folder is populated dynamically. A custom folder is not added as a folder with resources to the catalog; it contains only a reference to the factory class, which displays the resources dynamically.

To add a custom folder:

1. In the Application Navigator, right-click the resource catalog to which you want to add the custom folder, and choose **Open**.

2. In the Design view for the resource catalog, in the Catalog section on the left side, select the node in the resource catalog under which you want to add the custom folder.

3. Click the **Add new node** icon and choose **Custom Folder**.

   A `customFolder` element is added to the catalog. The right side of the page displays fields to define the new folder's attributes and parameters.

4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the resource catalog.

5. In the **Initial Context Factory** field, enter the name of a Java class that implements the `javax.naming.InitialContextFactory` interface and generates the folder based on a set of parameters.

   For more information, see Section C.4, "Factory Classes Available for Adding Dynamic Resources to the Catalog."

6. In the **Visible** field, specify whether the folder is listed in the resource catalog at runtime. The default value is the EL expression `#{true}`, which means the folder is listed for all users at all times. Enter `false` or `#{false}` to hide the folder from all users at all times, or enter an EL expression to specify the conditions under which the folder is listed. If the field is empty, the value defaults to `true`.

7. Select **Insert Folder Contents** to display the contents of the custom folder directly in the catalog rather than displaying them under the folder.

8. Optionally, in the Custom Folder Attributes section, specify any desired display options for the folder. For more information, see Section 14.3.9, "How to Set Display Options for a Resource Catalog or Resource."

9. Use the Custom Folder Parameters section to add parameters that were defined while implementing the factory class. You can bind these parameters to other artifacts in the application.

   Click the **Add** icon in the Parameters section to create a new row in the Parameters table.

   You may see a drop-down menu on the **Add** icon if the factory class exposes parameters, for example, Content Presenter-specific factory classes provide a `templateView` parameter.

10. Save the catalog definition file.

14.3.7 How to Add a Custom Content Provider to a Resource Catalog

A custom content provider dynamically generates zero or more catalog entries at runtime. Catalog entries include folders, links, custom folders, components, and so on. When you add a custom folder, a folder is created in the catalog and is displayed at runtime even if it is empty. However, when you add a custom content element, a folder is created in the catalog, but is displayed at runtime only if it has components inside it. Except for this difference, a custom content provider is similar to a custom folder.

To add a custom content provider:

1. In the Application Navigator, right-click the resource catalog to which you want to add the custom content provider, and choose **Open**.

2. In the Design view for the resource catalog, in the Catalog section on the left side, select the node in the resource catalog under which you want to add the custom content provider.

3. Click the **Add new node** icon and choose **Custom Content**.

   A `customContent` element is added to the catalog. The right side of the page displays fields to define the new folder's attributes and parameters.

4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the resource catalog.

5. In the **Content Provider** field, enter the fully qualified name of a class that implements the interface `oracle.adf.rc.spi.plugin.catalog.CustomContentProviderV2`.

   You can use the **Browse** icon to see a list of classes that implement this interface. Also, see Section C.4, "Factory Classes Available for Adding Dynamic Resources to the Catalog."

6. In the **Visible** field, specify whether the folder is listed in the resource catalog at runtime. The default value is the EL expression `#{true}`, which means the folder is listed for all users at all times. Enter `false` or `#{false}` to hide the folder from all users at all times, or enter an EL expression to specify the conditions under which the folder is listed. If the field is empty, the value defaults to `true`.

7. Optionally, in the Custom Content Attributes section, specify any desired display options for the folder. For more information, see Section 14.3.9, "How to Set Display Options for a Resource Catalog or Resource."

8. Use the Custom Content Parameters section to define parameters on the folder. The parameters you define here are passed to and interpreted by the `CustomContentProviderV2` implementation.

   Click the **Add** icon in the Parameters section to create a new row in the Parameters table.

9. Save the catalog definition file.

14.3.8 How to Add a Resource Catalog to Another Resource Catalog

You can include another resource catalog inside the selected catalog. When you add another catalog, only a pointer to this catalog is included in the catalog definition file. The actual catalog contents are inserted only at runtime.

To add a resource catalog to another resource catalog:

1. In the Application Navigator, right-click the resource catalog to which you want to add the resource catalog, and choose **Open**.

2. In the Design view for the resource catalog, in the Catalog section on the left side, select the node in the resource catalog under which you want to add the resource catalog.

3. Click the **Add new node** icon and choose **Catalog Reference**.

   A `catalog` element is added to the catalog. The right side of the page displays fields to define the resource catalog's attributes and parameters.

4. The **Id** field is automatically populated with a generated ID. You can keep this ID, but you will probably want to change it to something more descriptive. The ID must be unique within the resource catalog.

5. In the **Path** field, enter the MDS path to the catalog definition file, for example, `\oracle\webcenter\portalapp\catalogs\custom-catalog.xml`.

   You can use the **Browse** icon to browse application folders and select the catalog definition file.

6. In the **Visible** field, specify whether the folder is listed in the resource catalog at runtime. The default value is the EL expression `#{true}`, which means the folder is listed for all users at all times. Enter `false` or `#{false}` to hide the folder from all users at all times, or enter an EL expression to specify the conditions under which the folder is listed. If the field is empty, the value defaults to `true`.

7. Optionally, in the Catalog Attributes section, specify any desired display options for the resource catalog. For more information, see Section 14.3.9, "How to Set Display Options for a Resource Catalog or Resource."

8. Save the catalog definition file.

14.3.9 How to Set Display Options for a Resource Catalog or Resource

You can specify various display options for a resource catalog or any of its resources to determine their appearance and behavior. The display options available depend on the type of the resource.

- **Title**: A label to be used for the resource in the catalog. This attribute is defined by default. You can change its value, if required.
- **Description**: A description of this resource.
- **Subject**: Keywords to facilitate keyword searching of the resource catalog.
- **ToolTip**: The tool tip to be displayed when you move the mouse over this resource name in the catalog.
- **IconURI**: The location of the icon to display next to the resource name in the catalog.

To set display options for a resource catalog or resource:

1. In the Application Navigator, right-click the resource catalog and choose **Open**.

2. In the Design view for the resource catalog, in the Catalog column on the left side, select the resource for which you want to set display options.

   To set display options for the resource catalog, select the root node.

3. In the resource's Attributes panel, click the **Add** icon and choose the attribute that you want to set. Table 14–2

Table 14–2 Resource Catalog Display Options

Attribute	Description
Title	The title displayed for the resource in the resource catalog.
Description	A description of the resource.
Subject	Keywords to facilitate searching of the node.
ToolTip	Text that displays to provide additional information about the resource when users hover the mouse over the Title.
IconURI	An icon to visually represent the resource. This is displayed next to the Title in the resource catalog.

4. From the **Value Type** drop-down list, choose:
   - **Literal String—**to specify a string as the value for the attribute.
   - **Resource Bundle—**to use a resource bundle to provide localized values for the attribute.

5. In the **Display Value** field, enter the value for the attribute. If you are using a resource bundle, click the **Browse** icon to select the resource bundle to search for the localized value.

6. Save the catalog definition file.

14.3.10 How to Rearrange Resources in a Catalog

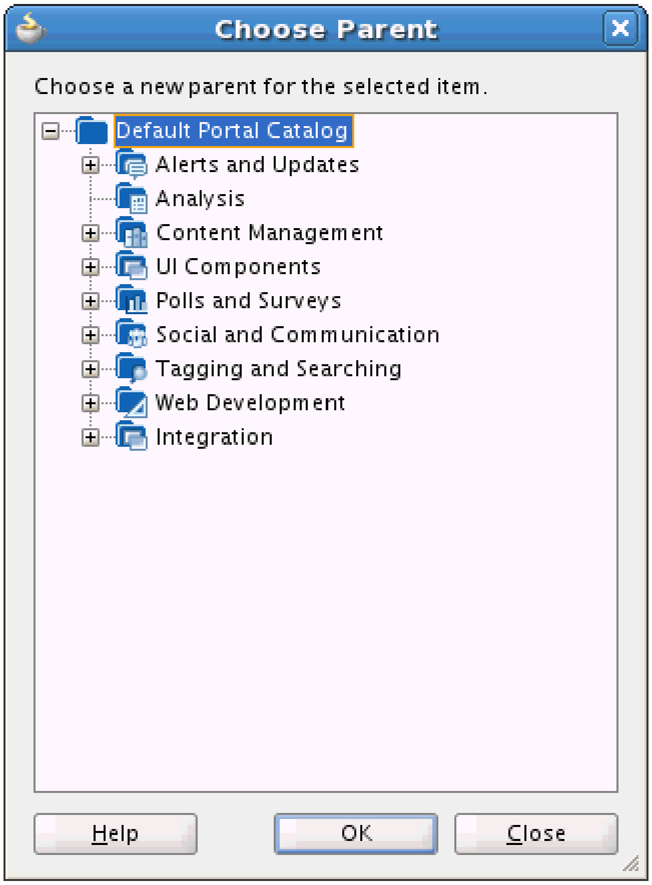
You can move resources to different folders within a resource catalog after you have added them. You can rearrange resources in the following ways:

- Drag and drop a resource from one folder into another.
- Use the **Change Parent** context menu option to move a resource to a different folder.

To rearrange a resource using the Change Parent option:

1. In the Application Navigator, right-click the resource catalog and choose **Open**.
2. In the Design view for the resource catalog, in the Catalog column on the left side, right-click the resource and choose **Change Parent** from the context menu.
3. In the Choose Parent dialog (Figure 14–6), select the folder in which to include the resource and click **OK**.

Figure 14–6 The Change Parent Dialog



Choose Parent

Choose a new parent for the selected item.

- Default Portal Catalog
  - Alerts and Updates
  - Analysis
  - Content Management
  - UI Components
  - Polls and Surveys
  - Social and Communication
  - Tagging and Searching
  - Web Development
  - Integration

Note: The **OK** button is enabled only when you select a valid location for the resource.

---

4. Save the navigation model definition file.

14.3.11 How to Show or Hide a Resource Catalog or Resource

You can specify whether or not a resource catalog or one of its resources is visible at runtime.

> **Tip:** As well as specifying an absolute true or false value, you can also dynamically determine whether or not the resource catalog or resource is available by using an EL expression to specify the conditions under which it is visible.

To show or hide a resource catalog or resource:

1. In the Application Navigator, right-click the resource catalog and choose **Open**.
2. In the Design view for the resource catalog, in the Catalog column on the left side, select the resource for which you want to set the visibility.

   To set the visibility of the navigation model resource catalog, select the root node.
3. In the **Visible** field, specify whether the resource catalog or resource is available for use in the application. This field takes an EL value. The default is `#{true}`, which means the resource catalog or resource is visible. Enter `false` or `#{false}` to hide the resource catalog or resource, or enter an EL expression to specify the conditions under which it is available. If the field is empty, the value defaults to `true`.
4. Save the navigation model definition file.

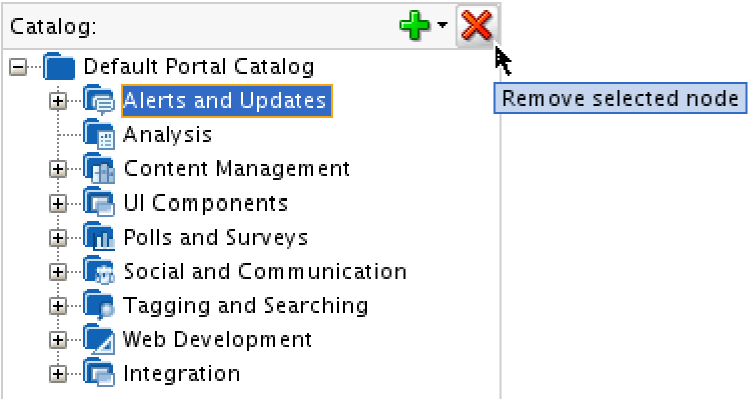
14.3.12 How to Edit a Resource in a Resource Catalog

To edit a resource, select it in the Catalog section of the catalog definition file. The resource's attributes and parameters are displayed in the right half of the page. You can edit values for these attributes and parameters and save the catalog definition file. For details about a resource's attributes and parameters, see the appropriate section earlier in this chapter.

14.3.13 How to Delete a Resource from a Resource Catalog

To delete a resource, select it in the Catalog section of the catalog definition file and click the **Remove selected node** icon (Figure 14–7).

Figure 14–7 Delete Option in the Resource Catalog Design View



14.3.14 How to Expose Data Controls Created at Design Time in a Resource Catalog

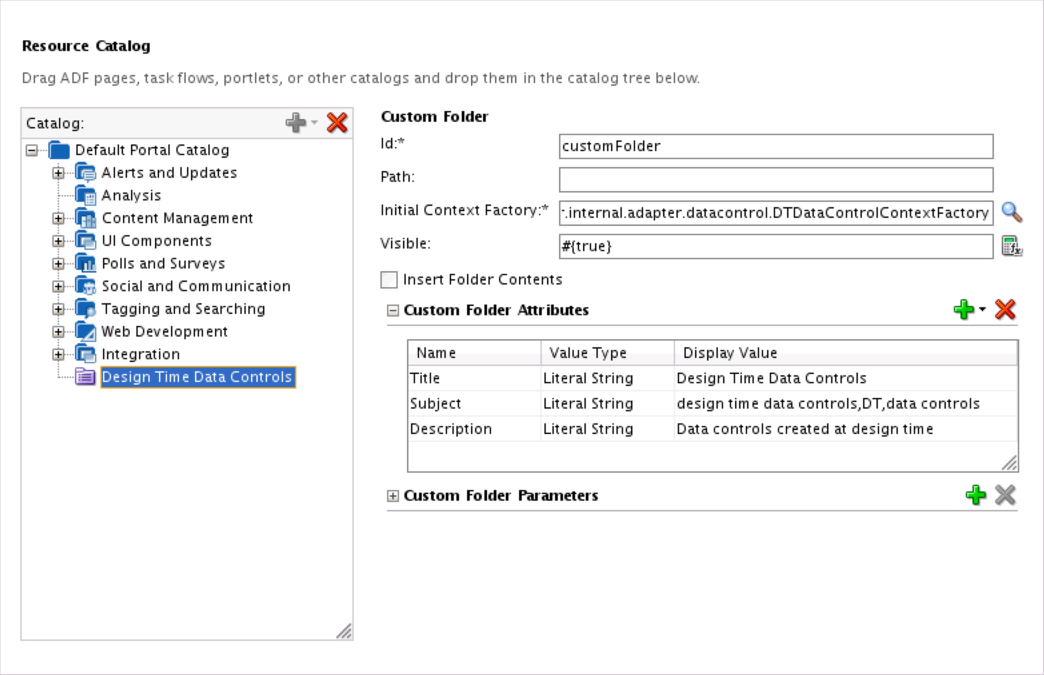
Oracle WebCenter Portal exposes a large number of service data controls that can be added to application pages and task flows. In addition, you may have created your own SQL or Web Services data controls in JDeveloper. To enable users to add these data controls to pages and task flows, you must expose the data controls in the resource catalog. For this, you must add a `customFolder` entry in your catalog definition file, as shown in Example 14–1 and Figure 14–8:

Example 14–1 Custom Folder for Design Time Created Data Controls

```
<customFolder id="dtDataControls"

factoryClass="oracle.webcenter.datacomposer.internal.adapter.datacontrol.DTDataCon
trolContextFactory">
  <attributes>
    <attribute value="Design Time Data Controls" attributeId="Title"/>
    <attribute value="Data controls created at design time"
attributeId="Description"/>
    <attribute value="design time data controls,DT, data controls"
attributeId="Subject"/>
    <attribute value="/adf/webcenter/folderlists_qualifier.png"
attributeId="IconURI"/>
  </attributes>
</customFolder>
```

Figure 14–8 Design Time Data Controls Folder



Resource Catalog

Drag ADF pages, task flows, portlets, or other catalogs and drop them in the catalog tree below.

Custom Folder

Id:* customFolder

Path:

Initial Context Factory:* ·.internal.adapter.datacontrol.DTDataControlContextFactory

Visible: #{true}

□ Insert Folder Contents

Custom Folder Attributes

Name	Value Type	Display Value
Title	Literal String	Design Time Data Controls
Subject	Literal String	design time data controls,DT,data controls
Description	Literal String	Data controls created at design time

Custom Folder Parameters

To expose the `customFolder` as a translatable resource in the catalog, the folder's string attributes must be stored as resource strings in a resource bundle. For this, the catalog definition file must have a `resourceBundle` attribute and each translatable attribute must have an `isKey` attribute. Then the attribute value is saved in a resource bundle, as shown in the following example:

The `resourceBundle` attribute on the catalog definition:

```
<catalogDefinition id="DefaultCatalog" visible="#{true}"

resourceBundle="oracle.webcenter.portalapp.catalogs.DefaultCatalogBundle"
                    definitionFilter="portal.catalog.DefaultCatalogFilter"
                    xmlns="http://xmlns.oracle.com/adf/rcs/catalog">
```

The `isKey` attribute defined on the attributes of a translatable resource:

```
<customFolder id="dtDataControls"

factoryClass="oracle.webcenter.datacomposer.internal.adapter.datacontrol.DTDataCon
trolContextFactory">
  <attributes>
    <attribute value="DATACONTROL_FOLDER.TITLE" isKey="true" attributeId="Title"/>
    <attribute value="DATACONTROL_FOLDER.DESCRIPTION" attributeId="Description"
isKey="true"/>
    <attribute value="DATACONTROL_FOLDER.KEYWORDS" attributeId="Subject"
isKey="true"/>
    <attribute value="/adf/webcenter/folderlists_qualifier.png" isKey="false"
attributeId="IconURI"/>
  </attributes>
</customFolder>
```

For more information about using resource bundles, see Section 20.12, "Configuring Runtime Resource String Editing."

At runtime, the resource catalog displays a folder titled **Design Time Data Controls** irrespective of whether the application has any design-time data controls.

In a deployed application, the Assets page of the runtime administration console allows you to add design-time data controls individually to custom catalogs. Out-of-the-box catalogs cannot be edited at runtime. For more information, see the "Adding a Resource to a Resource Catalog" section in *Building Portals with Oracle WebCenter Portal*.

Exposing Custom Data Controls in an Already Deployed Application

If you created a SQL or web service data control in your application, and want to expose them in an already deployed application, you must perform the following steps:

- Package the application into an ADF shared library.
- Deploy the application to the WebLogic Server instance. For more information, see Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)."

When you perform this configuration, the deployed data controls are available in the Design Time Data Controls folder in the runtime Resource Registry. Users can add the data controls from the registry to any custom resource catalog, from where they can be consumed in pages and task flows.

14.3.15 How to Expose Data Controls Created at Runtime in a Resource Catalog

Users can create data controls at runtime in the Assets page of the runtime administration console. If you want your resource catalog to dynamically display data controls created at runtime, add a `customFolder` entry in your catalog definition file, as shown in Example 14–2.

Example 14–2 Custom Folder for Runtime Created Data Controls

```
<customFolder id="rtDataControls"

factoryClass="oracle.webcenter.datacomposer.internal.adapter.datacontrol.DataContr
olContextFactory">
  <attributes>
    <attribute value="Runtime Data Controls" attributeId="Title"/>
    <attribute value="Data controls created at runtime"
attributeId="Description"/>
    <attribute value="runtime data controls,RT,data controls"
attributeId="Subject"/>
    <attribute value="/adf/webcenter/folderlists_qualifier.png"
attributeId="IconURI"/>
  </attributes>
</customFolder>
```

To expose this folder as a translatable resource, the folder's string attributes must be stored as resource strings in a resource bundle. See Section 14.3.14, "How to Expose Data Controls Created at Design Time in a Resource Catalog" for an example of how to create translatable resources.

At runtime, the catalog displays a folder titled **Runtime Data Controls** irrespective of whether the folder has any data controls.

14.3.16 How to Control Visibility of Portlets in a Resource Catalog

Out-of-the-box, a resource catalog displays portlets from all the available producers irrespective of whether the portlets are secured or not. As a result, users are allowed to consume even secured portlets to which they do not have access. When a user adds such a portlet to a page, the portlet component is added, but it does not display any content. To ensure that users view and consume only those portlets that they can access, you can control the visibility of portlets in the resource catalog. Implement the `PortletItemSecurityHelper` interface to display portlets conditionally in the resource catalog, based on the user's permissions.

To control visibility of portlets in a resource catalog:

1. Implement the `PortletItemSecurityHelper` interface in your own item security helper class, for example, `CustomPortletSecurityHelper.java`.

   Example 14–3 shows a sample implementation of the `PortletItemSecurityHelper` interface. The following assumptions are made for the purpose of this example:

   - Grants are defined for each portlet to control who can see it.
   - A permission class, `PortletVisibilityPermission`, is defined to check a user's permissions on the portlet.

Example 14–3 Sample Implementation of PortletItemSecurityHelper

```
public class CustomPortletSecurityHelper extends PortletItemSecurityHelper
{
    public boolean canView(String producerId, String portletId)
    {
        String permissionPath = producerId + '/' + portletId;
        PortletVisibilityPermission permission = new PortletVisibilityPermission
(permissionPath, VIEW_ACTION);
        try
        {
          // throws AccessControlException if the permission is not granted
          JpsAuth.checkPermission(permission);
          canView = true;
          sLogger.logp(Level.FINE, SOURCE_CLASS, method,
                       "PortletVisibilityPermission check passed. Producer={0},
Portlet={1} Action=view",
                       new Object[]{producerId, portletId});
        }
        catch(AccessControlException ace)
        {
          canView = false;
          sLogger.logp(Level.FINE, SOURCE_CLASS, method,
                       "PortletVisibilityPermission check passed. Producer={0},
Portlet={1} Action=view",
                       new Object[]{producerId, portletId});
        }
        return canView;
    }
}
```

2. Create an `rc_ext.xml` file in the application's `META-INF` directory, and add the following code to register the implementation with the resource catalog:

```
<extension xmlns:="http://xmlns.oracle.com/adf/rc/extension"
           id="your.extension.id"
           name="Your Extension Name"
           version="11.1.1.4.0">
  <item-security-helper class="your.implementation.class.name"/>
</extension>
```

At runtime, when a user clicks **Add Content** in Composer, the resource catalog displays only those portlets on which the user has permissions.

14.4 Selecting the Default Resource Catalog

You can configure the default catalog at the application and page levels. You can also use different resource catalogs depending on different criteria.

This section includes the following subsections:

- Section 14.4.1, "How to Select the Default Resource Catalog for an Application"
- Section 14.4.2, "How to Configure Multiple Resource Catalogs"
- Section 14.4.3, "How to Select the Default Resource Catalog for a Page"

14.4.1 How to Select the Default Resource Catalog for an Application

Every Portal Framework application defines a default resource catalog that is used when users add content to a page, task flow, or page template.

When you first create a Portal Framework application, the seeded resource catalog, default-catalog.xml, is set as the application's default resource catalog. If you subsequently create your own resource catalog, you can set that as the default.

You can set the default resource catalog for a Portal Framework application in the application's `adf-config.xml` file. For more

To select the default resource catalog for an application:

1. Open the application's `adf-config.xml` file.
2. Change the `catalog-name` attribute value in the `<rcv:rcv-config>` element and specify the custom catalog name, as shown in the following example:

```
<rcv:rcv-config>
  <rcv:default-catalog
catalog-name="/oracle/webcenter/portalapp/catalogs/myCustomCatalog.xml"/>
</rcv:rcv-config>
```

The `catalog-name` attribute identifies the catalog to be used as the default one.

The path you specify is relative to the resource catalog root directory, for example, if you saved your new catalog definition as `C:\JDeveloper\mywork\RCSampleApp\Portal\Public_Html\oracle\webcenter\portalapp\catalogs\myCustomCatalog.xml`, then the `catalog-name` value would be `/oracle/webcenter/portalapp/catalogs/myCustomCatalog.xml`. The name uses the `/` separator because it represents a part of an MDS path.

> **Note:** For information about the resource catalog-specific configurations you can make in `adf-config.xml`, see Section B.2.2, "adf-config.xml."

3. Save the `adf-config.xml` file.

14.4.2 How to Configure Multiple Resource Catalogs

Most businesses require that users and groups have access to only those resources that they can add to a page. To address this need, you can configure multiple resource catalogs in your application. You can expose different catalogs to different users based on specific criteria, such as the page being edited, the user, or the user role. This section describes how to associate multiple resource catalogs with your application. It contains the following subsections:

To use multiple catalogs, you must implement the `ResourceCatalogSelector` API to select the appropriate catalog for the user and the page being edited. You must include the `catalog-selector` entry in your application's `adf-config.xml` file to specify the name of your `ResourceCatalogSelector` class. If you do not specify a `catalog-selector`, the default catalog is used for all editable pages and all users see the same content. If you specify a `catalog-selector`, the default catalog is used only when the specified selector returns null.

To configure multiple resource catalogs:

1. Create your custom catalogs by performing the steps outlined in Section 14.2, "Creating a Resource Catalog" and Section 14.3, "Editing a Resource Catalog."
2. Implement the `oracle.adf.rc.model.config.ResourceCatalogSelector` interface in your own resource catalog selector class, for example, `CatalogSelector.java`.

   Example 14–4 shows a catalog selector implementation where a custom resource catalog, `admin-catalog.xml`, is shown to `ahunold` who has administrator privileges, and `users-catalog.xml` is shown to users `sking` and `jdoe`. If there is a problem with rendering either of these catalogs, then the default catalog is shown to users.

Example 14–4 Sample ResourceCatalogSelector Showing Entries for Multiple Resource Catalogs

```
package webcenter;
```

```
import javax.faces.context.FacesContext;

import java.util.Map;

import javax.faces.component.UIViewRoot;
import javax.faces.context.FacesContext;
import javax.faces.context.ExternalContext;

import oracle.adf.rc.model.config.ResourceCatalogSelector;
import oracle.adf.rc.model.dc.RCVContext;

import oracle.adf.rc.model.config.ResourceCatalogSelector;

/**
 * CatalogSelector is a sample implementation of the ResourceCatalogSelector
 * interface.
 *
 * This implementation is based on the authenticated user
 */
public class CatalogSelector implements ResourceCatalogSelector {
  public CatalogSelector() {
  }

  /**
   * Returns the Id of the catalog that must be used for the current
   * user.
   *
   * @param context a Map cont
   * @return id of the catalog to be used for the current user or
   *         null if the default catalog must be used.
   */
  public String getCatalogName(Map context) {
    // if no catalog is selected, return null & ensure that the Composer uses the
    // default catalog defined in the rcv-config
    String retval = null;

    // get information about the current user.
    FacesContext fctx = FacesContext.getCurrentInstance();
    ExternalContext ectx = fctx.getExternalContext();
    String user = ectx.getRemoteUser();

    if (user == null || user.length() == 0) {
      // user name is not available so use the default catalog
      retval = null;

    }
    else if (user.equals("jdoe") || user.equals("sking")  ) {
      // return users-catalog for users jdoe and sking
      retval = "users-catalog";


    }
    else if (user.equals("ahunold")) {
      // return admin-catalog for user ahunold
      retval = "admin-catalog";

    }

    return retval;
    }
}
```

3. In your `adf-config.xml` file, enter the name of the class you created for selecting a resource catalog with the `<rcv:catalog-selector>` tag as show in the following example:

```
<rcv:rcv-config>
<rcv:default-catalog
catalog-name="/oracle/webcenter/portalapp/catalogs/default-catalog.xml"/>
<rcv:catalog-selector class-name="webcenter.CatalogSelector"/>
</rcv:rcv-config>
```

   The value for `catalog-name` corresponds to the default catalog definition file with the MDS path.

> **Note:** For information about the resource catalog-specific configurations you can make in `adf-config.xml`, see Section B.2.2, "adf-config.xml."

14.4.3 How to Select the Default Resource Catalog for a Page

If your application page contains Composer components, then you can specify the catalog name in the `catalog` attribute on the `Page Customizable` component. You can specify a static or EL value. For more information, see Section B.1.1, "Page Customizable Component."

14.5 Filtering Items in a Resource Catalog

If you want to arrange catalog content so that it is essentially the same for all users, but displays different subsets of the content to different users, then you can configure your resource catalog to filter out selected items based on specific criteria.

For example, if two users `A` and `B` have different privileges on a page, you can configure your application to display the entire catalog to user `A` and only a subset of items in the catalog to user `B`.

To apply a filter on the catalog, you must implement the `oracle.adf.rc.spi.plugin.catalog.CatalogDefinitionFilter` interface. Additionally, you must associate this filter with the resource catalog.

> **Tip:** You can conditionally hide individual resources in a catalog by specifying an EL expression in the **Visible** field for the resource. For more information, see Section 14.3.11, "How to Show or Hide a Resource Catalog or Resource."

To filter items in a resource catalog:

1. From the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, and then **Java Class**, and click **OK**.
3. In the Create Java Class dialog, enter a name for the class, for example, `CatalogFilter`.
4. Under the Optional Attributes section, add the `oracle.adf.rc.spi.plugin.catalog.CatalogDefinitionFilter` interface.

5. Click **OK**.
6. Specify the logic for filtering items.

> **Note:** When implementing the filter logic it is common to want information about the current user and current page. This information can be obtained from the FacesContext.

Example 14–5 shows a sample CatalogDefinitionFilter implementation. It is configured to hide the Discussions folder (forumsFolder) for user jdoe from the custom catalog, users-catalog.xml. The entire catalog, with the ADF Faces Components and Discussions folders, is shown to all other users.

Example 14–5 Sample Showing CatalogDefinitionFilter Implementation

```
package webcenter;

import oracle.adf.rc.catalog.CatalogElement;
import oracle.adf.rc.spi.plugin.catalog.CatalogDefinitionFilter;

import java.util.Hashtable;

import javax.faces.context.ExternalContext;
import javax.faces.context.FacesContext;

public class CatalogFilter implements CatalogDefinitionFilter {

  public boolean includeInCatalog(CatalogElement element, Hashtable env) {

    ExternalContext ectx =
FacesContext.getCurrentInstance().getExternalContext();

    if ("jdoe".equals(ectx.getRemoteUser()) &&
"forumsFolder".equals(element.getId()))
      return false;
    else
      return true;
  }

}
```

7. In the Application Navigator, right-click the resource catalog and choose **Open**.
8. In the Design view for the resource catalog, in the Catalog panel on the left side, select the root node of the resource catalog
9. In the **Catalog Filter** field, enter the name of the Java class you created, for example, webcenter.CatalogFilter.

   This adds a definitionFilter attribute in Source view of the file.
10. Save the catalog definition file.

14.6 Deleting a Resource Catalog

If a resource catalog is no longer required within your application, you can delete it.

To delete a resource catalog, right-click the catalog in the Application Navigator and choose **Delete** from the context menu. For more information, see Section 9.4, "Deleting Portal Resources."

14.7 Defining Task Flow Parameters and Attributes of the Enclosing Show Detail Frames for Task Flows

At runtime, when you add a task flow from the resource catalog to your application page in Composer, the task flow is automatically enclosed in a `Show Detail Frame` component. You can initialize attributes, such as the title, height, or width, associated with the enclosing `Show Detail Frame` by defining those attributes in the catalog definition file that contains the task flow. To differentiate the task flow's properties from the enclosing `Show Detail Frame`'s properties, you must use `attr.` as a prefix for `Show Detail Frame` properties.

For example, if a user adds a task flow to a page with a dark background setting, the task flow continues to use the background setting of the enclosing `Show Detail Frame` component. This may not be the look the user wants. To enable the user to change the `Show Detail Frame`'s background property, you must initialize and expose the background attribute in the resource catalog. At runtime, while editing the task flow's properties, a user can also change the `Show Detail Frame`'s background attribute.

Similarly, you can also initialize task flow parameters. You can define such parameters in the catalog definition file using an EL expression. At runtime, while editing the task flow's properties, a user can also change values for the exposed parameters. To differentiate the task flow's properties from the initialized parameters, you must use `parameter.` as a prefix for such parameters.

To initialize task flow parameters and `Show Detail Frame` properties:

1. Open the catalog definition file that contains the task flow.
2. Within the task flow's `<url>` or `<resource>` element, add an `<attribute>` entry for each parameter and `Show Detail Frame` attribute you want to define.

   The `attributeId` for a parameter must contain the parameter name along with a prefix of `parameter.`; the `attributeId` for a `Show Detail Frame` attribute must contain the attribute name along with a prefix of `attr.` as shown in the following example:

```
<url visible="#{true}"
factoryClass="oracle.webcenter.portalframework.sitestructure.rc.TaskFlowResourc
eFactory"
     id="wallMiniView"

url="taskflow://oracle/webcenter/peopleconnections/wall/controller/taskflows/Wa
llViewer.xml#WallViewer">
  <attributes>
    <attribute value="WALL_MINIVIEW.TITLE" attributeId="Title" isKey="true"/>
    <attribute value="WALL_MINIVIEW.DESCRIPTION" attributeId="Description"
isKey="true"/>
    <attribute value="#{securityContext.userName}"
attributeId="parameter.userName"/>
    <attribute value="false" attributeId="attr.stretchContent"/>
    <attribute value="never" attributeId="attr.showResizer"/>
  </attributes>
  <contents/>
</url>
```

> **Note:** Include the `isKey` attribute and set it to `true` only if the value is coming from a resource bundle. If not included, the `isKey` value defaults to `false`.

3. Save the catalog definition file.

14.8 Troubleshooting Problems with Resource Catalogs

This section provides information to assist you in troubleshooting problems you may encounter while using resource catalogs.

For information about configuring logging, see "Configuring ADF Logging for Composer".

Problem

Resource catalog is empty.

Solution

The default catalog is not available to MDS. Ensure that the deployment profile contains the necessary entries to copy the default catalog file. Also, ensure that in the MDS section of `adf-config.xml`, a namespace entry points to the default catalog file.

Problem

A project task flow does not appear in the resource catalog.

Solution

The task flow must be packaged as an ADF Library (JAR file) and added to the project. You must also ensure that the task flow ID is given in the following format:

```
taskflow://Path_to_Task_Flow/Task_Flow_Definition_File_Name#Task_Flow_ID
```

For example:

```
taskflow://oracle/webcenter/peopleconnections/wall/controller/taskflows/WallViewer
.xml#WallViewer
```

15

Creating Pages and Adding Resources

This chapter describes how to create pages in your Portal Framework applications. It also discusses the different resources you can add to those pages to build up the content of your application.

This chapter includes the following topics:

15.1 Introduction to Pages

Pages are the fundamental building blocks of a Portal Framework application. You use the pages in a Portal Framework application to expose the different kinds of content you want to provide to your users. For more information, see Section 5.3.2, "Understanding Pages, Page Templates, and the Portal Page Hierarchy."

Pages can include content from various resources, such as:

- Portlets and pagelets
- WebCenter Portal task flows and custom task flows
- Content from UCM
- External applications
- Data controls

Adding content to the pages in your application is no different from adding content to any other web application.

15.2 Creating Pages in a WebCenter Portal Framework Application

The WebCenter Portal Framework Application template populates a new Portal Framework application with several default pages. You must add your own pages to develop your application beyond this initial framework.

Note: Always create Portal Framework application pages in JDeveloper as JSP *documents* (JSPX files) rather than JSP *pages* (JSP files). For page customizations to be stored, the page must be represented in XML. By choosing to create an XML representation of the JSP document, you ensure that customizations are always possible for the Portal Framework application page.

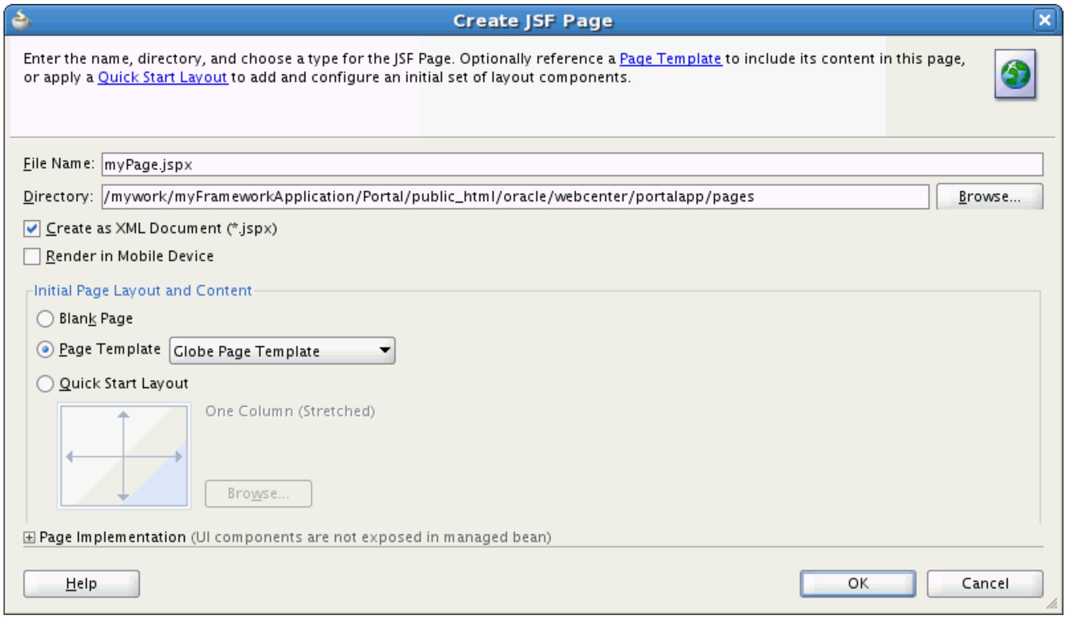
---

1. In the Application Navigator, right-click the **pages** folder (`/oracle/webcenter/portalapp/pages`) in your application project and choose **New**.

   Tip: For pages to be used in the page hierarchy, they must be located under `oracle/webcenter/portalapp`. For more information, see Section 5.3.2, "Understanding Pages, Page Templates, and the Portal Page Hierarchy."

2. In the New Gallery, expand **Web Tier,** select **JSF** and then **JSF Page,** and click **OK.**
3. In the Create JSF Page dialog (Figure 15–1), in the **File Name** field, enter a file name for the page.

Figure 15–1 The Create JSF Page Dialog



Create JSF Page

Enter the name, directory, and choose a type for the JSF Page. Optionally reference a Page Template to include its content in this page, or apply a Quick Start Layout to add and configure an initial set of layout components.

File Name: myPage.jspx

Directory: /mywork/myFrameworkApplication/Portal/public_html/oracle/webcenter/portalapp/pages

☑ Create as XML Document (*.jspx)

☐ Render in Mobile Device

Initial Page Layout and Content

○ Blank Page

● Page Template: Globe Page Template

○ Quick Start Layout

One Column (Stretched)

⊞ Page Implementation (UI components are not exposed in managed bean)

4. Select **Create as XML Document (*.jspx).**
5. In the Initial Page Layout and Content section, select **Page Template** and select the page template that you want to use to define the layout and structure of the page. For more information on page templates, see Chapter 11, "Developing Page Templates."

After you have created the page, you can edit the code to enable dynamic selection of the page template. For more information, see Section 11.5.3, "How to Enable Dynamic Switching of Page Templates at Runtime in a WebCenter Portal Framework Application."

6. Click **OK**.

For information about the other settings in this dialog that are not specific to Portal Framework application pages, see the "Creating a View Page" section in *Web User Interface Developer's Guide for Oracle Application Development Framework*.

For information about how to add general components, such as layout components, to the page, see the "How to Add ADF Faces Components to JSF Pages" section in *Web User Interface Developer's Guide for Oracle Application Development Framework*.

To enable users to edit your application's pages at runtime, you must add Composer components to it. For more information, see Chapter 18, "Enabling Runtime Editing of Pages Using Composer."

15.3 Adding WebCenter Portal Tools and Services Task Flows to a Page

WebCenter Portal tools and services enrich applications with enterprise 2.0 capabilities, including social computing services, personal productivity services, online awareness and communications, content integration, and web analytics. WebCenter Portal tools and services expose their functionality through task flows. For more information about WebCenter Portal tools and services, see Chapter 4, "Preparing Your Application for WebCenter Portal Tools and Services."

If you create your application using the WebCenter Portal Framework Application template, all the appropriate WebCenter Portal tools and services connection wizards and tag libraries are readily visible and available in the New Gallery and Component Palette. When you consume a WebCenter Portal tools and services task flow or component, the necessary libraries are automatically added to the project. Depending on the tool or service you plan to consume, your application must meet certain prerequisites. For example, if the service must know the identity of users, then your application must provide some level of security with user authentication. For more information, see Chapter 4, "Preparing Your Application for WebCenter Portal Tools and Services."

For more information about the individual WebCenter Portal tools and services and their task flows, see Table 15–1.

Table 15–1 WebCenter Portal Tools and Services - More Information

WebCenter Portal Tools and Services	More Information
Activity Graph	Chapter 46, "Integrating the Activity Graph"
Analytics	Chapter 47, "Integrating Analytics"
Announcements	Chapter 32, "Integrating Announcements"
Blogs	Section 30.4, "Integrating Blogs"
Discussions	Chapter 33, "Integrating Discussions"
Documents	Chapter 28, "Integrating Documents"
Events	Chapter 48, "Integrating Events"
Instant Messaging and Presence (IMP)	Chapter 34, "Integrating Instant Messaging and Presence"

Table 15–1 (Cont.) WebCenter Portal Tools and Services - More Information

WebCenter Portal Tools and Services	More Information
Links	Chapter 43, "Integrating Links"
Lists	Chapter 49, "Integrating Lists"
Mail	Chapter 35, "Integrating Mail"
Notifications	Chapter 50, "Integrating Notifications"
People Connections	Part VI, "Working with People Connections"
Polls	Chapter 36, "Integrating Polls"
Recent Activities	Chapter 51, "Integrating Recent Activities"
RSS	Chapter 52, "Integrating RSS"
Search	Chapter 45, "Integrating Search"
Tags	Chapter 44, "Integrating Tags"
Wikis	Section 30.3, "Integrating Wikis"
Worklists	Chapter 41, "Integrating Worklists"

> **Note:** If the WebCenter Portal tools and services task flows do not quite meet your requirements, you can customize them to change their look and feel or functionality. For example, you can add text, change labels, remove regions or components, or show additional attributes. For more information, see Chapter 23, "Customizing WebCenter Portal Tools and Services Task Flows."

15.4 Adding Custom Task Flows to a Page

Task flows, like pages, are containers in which you can add components such as portlets, content, and other task flows. You can add task flows to pages or other task flows. Task flows created in JDeveloper can be included in resource catalogs so that users can add them to pages or other task flows at runtime.

You can drag and drop a custom task flow into a resource catalog so that it is available for users to add to pages or task flows at runtime. For more information, see Section 14.3.2, "How to Drag and Drop a Resource into a Resource Catalog." When you deploy the application, the task flow is also deployed to the target instance.

For detailed information about creating different types of ADF task flows, see the "Creating ADF Task Flows" part in *Fusion Developer's Guide for Oracle Application Development Framework*.

You cannot directly upload a task flow created in and exported from JDeveloper into an already deployed application, but you can import a task flow created at runtime into JDeveloper, modify it, and export it back to the deployed application.

Exposing Task Flows Created in JDeveloper to a Deployed Application

If you create a custom task flow in JDeveloper and want to expose it in an already deployed application, you must deploy the project containing the task flow as an ADF shared library to the runtime application. Once the library containing the task flow is accessible to the application, it is included in the runtime Resource Registry and can be added to custom resource catalogs from there.

Note: Permissions to view or edit a task flow are not provisioned by default when you create the task flow. To ensure that a task flow is visible at runtime, prior to deploying as a shared library, you must grant at least the View privilege on the task flow. For more information, see Section 22.6.1, "Granting Permissions on Task Flows."

For the steps to deploy an application to a Portal Framework application as a shared library, see the "Deploying the Application to a WebLogic Managed Server" section in *Administering Oracle WebCenter Portal*. However, while running the Install Application Assistant, on the Choose targeting style page, select **Install this deployment as a library**.

For the steps to deploy an application to a WebCenter Portal instance, see Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)."

15.5 Adding Content from WebCenter Content to a Page

To provide access to the content in your WebCenter Content content repository, you must create a connection to the WebCenter Content. For more information, see Section 25.2.1, "Creating a Content Repository Connection Based on the Oracle Content Server Adapter."

With a connection to WebCenter Content established, you can provider users with a user-friendly interface to manage, display, and search documents at runtime. For more information, see Chapter 28, "Integrating Documents."

Next, add one of the content task flows or document components to your page to expose the content from WebCenter Content. Content task flows include Content Presenter and the documents task flows:

- Content Presenter
- Document Explorer
- Document List Viewer
- Document Manager
- Document Navigator
- Folder Viewer
- Recent Documents
- Document Viewer
- Document Mini Properties
- Document Properties
- Rich Text Editor
- Document Upload
- Document Version History
- AutoVue

Document components include:

- Document Link

- Document Inline Frame
- Document Image

For more information about the Content Presenter task flow, see Section 29.1, "Understanding the Content Presenter Task Flow." For more information about the documents task flows, see Section 29.2, "Understanding the Documents Task Flows." For more information about document components, see Section 29.3, "Understanding Document Components."

If you use the Content Presenter task flow, you may also want to create your own Content Presenter display templates. Content Presenter display templates define how content repository items should be rendered on a page. For more information, see Chapter 27, "Creating Content Presenter Display Templates."

15.6 Adding Portlets to a Page

A portlet is a reusable web component that can draw content from many different sources. Portlets provide a way of presenting data from multiple sources in a meaningful and related way. For more information about portlets, see Chapter 57, "Introduction to Portlets."

To add a portlet to your application, you must first register the portlet's producer with the Portal Framework application. For more information, see Section 63.2, "Registering Portlet Producers with a WebCenter Portal Framework Application."

After you have registered the portlet producer, you can then drag and drop any portlets that you want to include in your application onto the appropriate page. For more information, see Section 63.5, "Adding Portlets to a Page."

15.7 Adding Pagelets to a Page

A pagelet is similar to a portlet, but while portlets were designed specifically for portals, pagelets can be run on any web page, including within a portal or other web application. Pagelets can be used to expose platform-specific portlets in other web environments.

For more information about adding pagelets to your pages, see Section 62.7, "Using Pagelets in Web Applications."

15.8 Adding Data Controls to a Page

Data controls are used to retrieve information from different data sources and create user interface (UI) components within your Portal Framework application. A data control provides you with easy-to-use methods that you can drag and drop onto JSF pages to publish content as ADF components, such as URLs, files, and folders. To add content from a data source to a JSF page, you must first create a connection to the data source, then use the connection to create a data control based on the repository.

You can create custom data controls to connect to different data sources and add them to your application pages or task flows. For detailed information about data controls, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

You cannot directly upload a data control created in and exported from JDeveloper into an already deployed application. Neither can you import a data control created at runtime into JDeveloper.

Some WebCenter Portal tools and services provide data controls for creating customized visualizations of the tool or service. For information about consuming these data controls in your application, see Section 4.1.3, "Using WebCenter Portal Data Controls."

Exposing Data Controls for Consumption in an Already Deployed Application

The runtime Resource Registry in a Portal Framework application contains a `Design Time Data Controls` folder by default. This folder exposes the seeded WebCenter Portal tools and services data controls and any other data controls that were added to the application before it was deployed. To expose a new data control in an already deployed Portal Framework application, you must deploy the project containing the data control as an ADF shared library to the runtime application. Once the library containing the data control is accessible to the application, it is displayed in the runtime Resource Registry and can be added to custom resource catalogs from there.

For the steps to deploy an application to a Portal Framework application as a shared library, see the "Deploying Applications Using the WLS Administration Console" section in *Administering Oracle WebCenter Portal*. However, while running the Install Application Assistant, on the Choose targeting style page, select **Install this deployment as a library**.

For the steps to deploy an application to a WebCenter Portal instance, see Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)."

15.9 Using External Applications

If the resources you add to your pages require access to applications that define their own authentication processes, you can add external applications to replicate a single sign-on experience for users.

For example, your page might include portlets that point to applications that require a separate login. Or, if your page includes the Mail task flow, you must identify an external application to map the mail server user to the application user so that the user does not have to log in separately every time.

The first time a user accesses the external application, he or she is prompted for a user name and password for the external application. These credentials are then mapped to the user and stored securely in a credential store. The credential store subsequently supplies these credentials during authentication to the external application. Unless the external application's credentials change, the user supplies the credentials only once as the mapped information is read from the credential store for future requests.

For more information, see Section 74.13, "Working with External Applications."

Part III

Customizing Your Application and Extending Customization Options

Part III contains the following chapters:

- Chapter 16, "Using WebCenter Portal Composer"
- Chapter 17, "Enabling Runtime Creation and Management of Pages"
- Chapter 18, "Enabling Runtime Editing of Pages Using Composer"
- Chapter 19, "Extending Runtime Editing Capabilities Using Composer"
- Chapter 20, "Performing Advanced Composer Configurations"
- Chapter 21, "Performing Composer-Specific MDS Configurations"
- Chapter 22, "Modifying Default Security Behavior of Composer Components"
- Chapter 23, "Customizing WebCenter Portal Tools and Services Task Flows"

16

Using WebCenter Portal Composer

This chapter introduces Oracle WebCenter Portal's Composer and describes the various tasks it supports at runtime.

This chapter contains the following topics:

16.1 Introduction to Composer

Composer is a fully-integrated page editor for adding and editing page content at application runtime. To understand the functions of Composer, let us first look at a typical application development lifecycle, which comprises the following stages:

- Application developers create applications at *design time*.

  Design time traditionally represents an integrated development environment (IDE) for creating or editing applications. For Oracle WebCenter Portal, Oracle JDeveloper provides the design-time environment.

- Application administrators deploy these applications to managed servers.
- End users access the deployed applications at *runtime*.

  Runtime represents a browser-based environment used for accessing web applications.

You can see that each stage involves different categories of users. Many times, some or all of these users may want to modify pages at runtime. For example, consider a dashboard-like application that displays information pertaining to the logged-in user, for example a worklist and a mail task flow. The page developer creates the dashboard page and populates it with the required components and task flows. An application administrator deploys the application to a customer site. At the customer site, people at different levels in the organization view the dashboard and make the following requests:

- Department administrators want to add a "Department News" task flow.
- Line of business (LOB) administrators want to add an "Expense Incurred by Self/Directs" task flow.

  Line of business capabilities are administration capabilities that can be done by a business analyst or equivalent position. LOB administrators are able to perform administrative tasks that do not require top-level administration capabilities to complete.
- The country site administrator wants to add a task flow displaying the respective country's operations or rules.

In addition, content contributors, moderators, and end users may want to add, delete, or modify page artifacts based on the business needs. In a typical application development environment, these requests are passed on to the page developer. The developer modifies the application in the development environment and redeploys it to the customer site.

Rather than pushing simple modifications back to the developer, Composer, in conjunction with Metadata Services (MDS), provides an editing tool that enables business users to edit application pages at runtime. Changes made at runtime are saved as metadata, separate from the base application definitions. This concept of editing application pages at runtime is referred to as *design time at runtime*. It minimizes the need to modify the application at design time and redeploy it.

Composer provides components for controlling an application's design time at runtime behavior. This chapter describes the basic concepts and terminology you'll need to use Composer effectively.

16.2 Understanding Application and User Customizations

When a user modifies a page at runtime, the changes are typically available only to that user. You can configure your application to make runtime modifications available to all or a subset of users accessing the page. Consider an example of a dashboard page displaying details about the expenses incurred by LOB members. If the LOB administrator modifies the page and adds some expensing guidelines, the changes must be visible to all members. To address such requirements, Composer enables you to edit pages in different modes so that changes are saved as *user customizations* (that affect only the individual user's view of the page) or *application customizations* (that affect everyone's view of the page).

To save changes as either user customizations or application customizations requires that they be saved separately at the back end. In the metadata domain, MDS allows for the saving of customizations in separate layers on top of the base application definitions. Depending on the business requirement, you can save changes in a single layer or in multiple layers.

In a single-layer configuration, changes are saved as application customizations to a common layer that is accessible to all users. In this case, you cannot allow for changes to be saved as user customizations.

In a multiple-layer configuration, changes are saved at separate locations based on specified criteria such as the mode in which the page is edited, the user editing the page, or the user role. In this type of configuration, each customization layer is insulated from the other, but the layers can be stacked over each other to provide flexibility during upgrades. For example, a user may want to change the default theme of the page being viewed. It is expected that this change be saved only for this user, without affecting others' view of the page. Therefore, you can set up things so that changes made by end users who have Personalize privilege on the page are saved as user customizations, and changes made by logged-in users with customization-level privileges are saved as application customizations. You can decide which tasks are available to users with Personalize and Customize/Edit privileges respectively.

For more information about MDS and customization layers, see Section 21.1, "Introduction to MDS."

16.3 Understanding the Edit Mode and View Mode of a Page

When a user opens an application page in a browser, the page opens in *View mode*. Composer provides access to another mode called *Edit mode* to enable users with appropriate privileges to edit application pages. These modes are described in detail:

- **Edit mode**: The mode typically available to authenticated users with access privileges to edit page content. In addition to the standard tasks that can be performed in View mode, Composer provides controls for switching to Edit mode and performing tasks such as adding components, deleting components, and editing component properties. Typically, changes made to the page in Edit mode are saved as application customizations and are available for all users accessing the page.
- **View mode**: The default view of a page when opened in a browser. In this mode, users can perform tasks such as rearranging components, collapsing and expanding components, and changing the layout. Typically, changes made to a page in View mode are available for that user alone and are saved as user customizations.

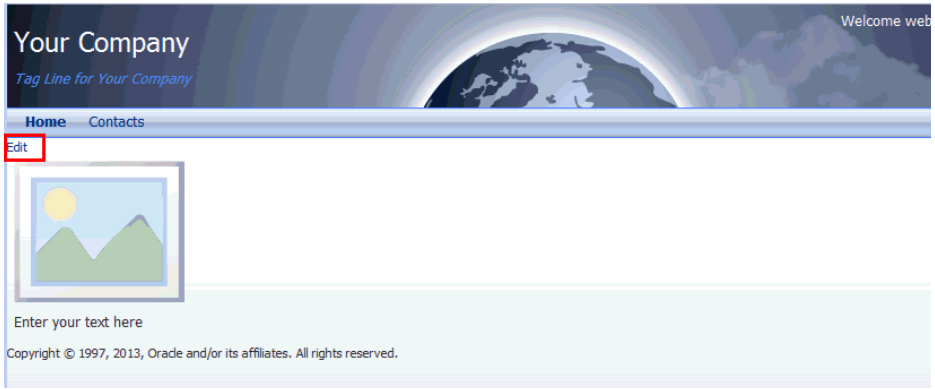
16.3.1 About Edit Mode

Composer's Edit mode provides a wide range of application customization capabilities. In Edit mode, users can add content, edit page and component properties, delete components, rearrange components, change the page layout, and so on.

You can provide the capabilities described in this chapter to your application by adding the following Composer design-time components to a page: `Change Mode Link` or `Change Mode Button`, `Page Customizable`, `Panel Customizable`, `Show Detail Frame`, `Custom Actions`, and `Layout Customizable`. For more information about these components, see Section 16.7, "Composer Components."

When you add the `Change Mode Link` or `Change Mode Button` component to a page that can be customized, an Edit link appears in View mode of the page in Composer. When users click the Edit link or button, the page opens in Edit mode of Composer. Figure 16–1 shows an Edit link on a page in View mode.

Figure 16–1 Edit Link While in View Mode



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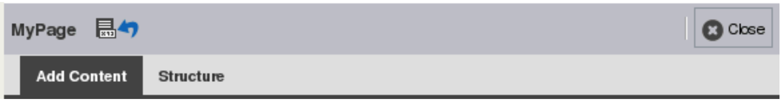
In Edit mode, the default Composer toolbar displays the title of the page being edited, **Page Properties** icon, **Reset Page** icon, and the **Close** button (Figure 16–2).

Figure 16–2 Composer Toolbar



By default, the page Edit mode provides two views: Add Content and Structure. However, you can configure your pages to display any or all of the following views: Design, Add Content, Structure, Select, and Preview. You use the `DesignViews` attribute to specify the views to display in Edit mode. If you specify the value as `all`, all the views become available in Edit mode except Add Content view.

For enhanced functionality, it is recommended that you configure your pages to display all the views in Composer. For information about the `DesignViews` attribute used for specifying the views to display in Edit mode, see Table B–1, " Attributes of a Page Customizable Component".

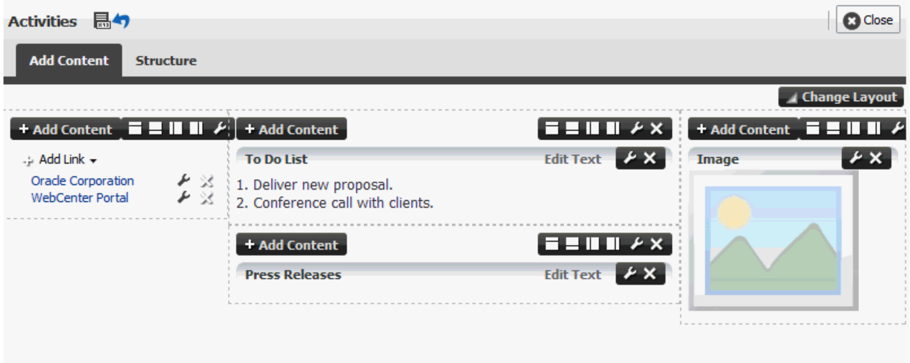
This section contains the following subsections:

- Section 16.3.1.1, "About Add Content View in Edit Mode"
- Section 16.3.1.2, "About Structure View in Edit Mode"
- Section 16.3.1.3, "About Design View in Edit Mode"
- Section 16.3.1.4, "About Select View in Edit Mode"
- Section 16.3.1.5, "About Preview View in Edit Mode"

16.3.1.1 About Add Content View in Edit Mode

The *Add Content view* is the default view when you open a page in Composer. It provides a WYSIWYG rendering of the page and its content, where controls are directly selectable on each component.

Figure 16–3 Add Content View of Composer



1. Deliver new proposal.
2. Conference call with clients.

16.3.1.2 About Structure View in Edit Mode

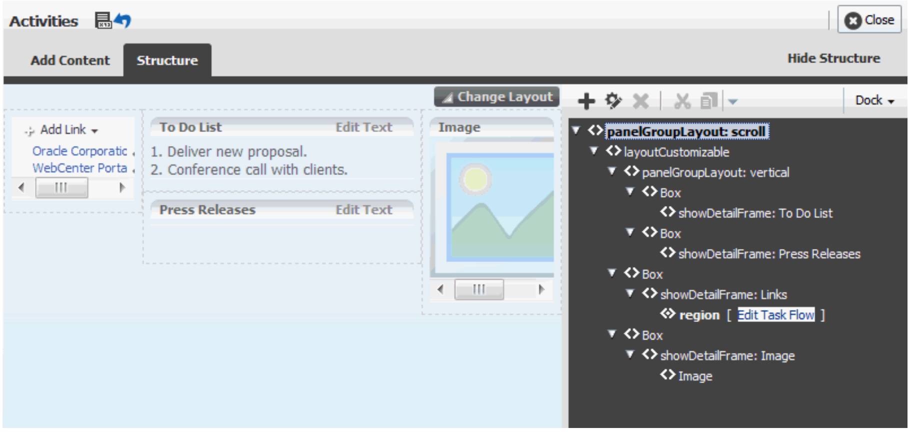
The *Structure view* provides a combined WYSIWYG and hierarchical rendering of page components, where controls are available in the toolbar of the page structure pane to add, edit, delete, hide, and rearrange page components (Figure 16–4).

Note: The `childCreation` attribute determines whether the children of popup dialogs can be viewed in Composer. By default, this attribute is set to `deferred` and users are unable to see the children of popup dialogs. Setting the value to `immediate` allows users to view the children of popup dialogs.

There is a performance impact by setting the `childrenCreation` attribute to `immediate`. If you do not need to use the popup on the page, using the default setting of `deferred` will avoid the penalty of CPU and memory usage when it is not needed. Note that the popup will be shown non-modally, thus, the application must be able to handle that fact without error.

For more information, see Section G.13, "EL Expressions Relevant to Composer" in Chapter G, "Expression Language Expressions."

Figure 16–4 Structure View of Page Edit Mode



1. Deliver new proposal.
2. Conference call with clients.

16.3.1.3 About Design View in Edit Mode

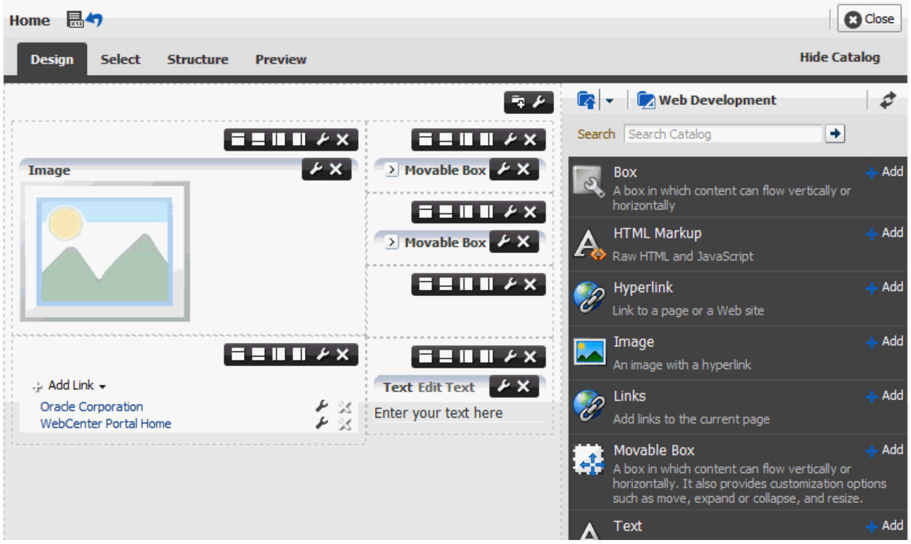
The *Design view* provides a WYSIWYG rendering of the page and its content, where controls are directly selectable on each component. The resource catalog displays inline on the right side of the page, where you can select components to add to the page (Figure 16–5).

You can choose to hide the inline resource catalog, and instead show each area of the page with an **Add Content** button to help you identify where you can add components.

Design view is not available in Edit mode by default. You can enable it by setting the value of the `DesignViews` attribute of the `Page Customizable` component to `design` or `all`. For information, see Appendix B.1.1, "Page Customizable Component."

If you choose to display Design view, it is rendered as the default view, and Add Content view is not displayed in Edit mode.

Figure 16–5 Design View of Composer



Box — A box in which content can flow vertically or horizontally — Add

HTML Markup — Raw HTML and JavaScript — Add

Hyperlink — Link to a page or a Web site — Add

Image — An image with a hyperlink — Add

Links — Add links to the current page — Add

Movable Box — A box in which content can flow vertically or horizontally. It also provides customization options such as move, expand or collapse, and resize. — Add

Text — Add

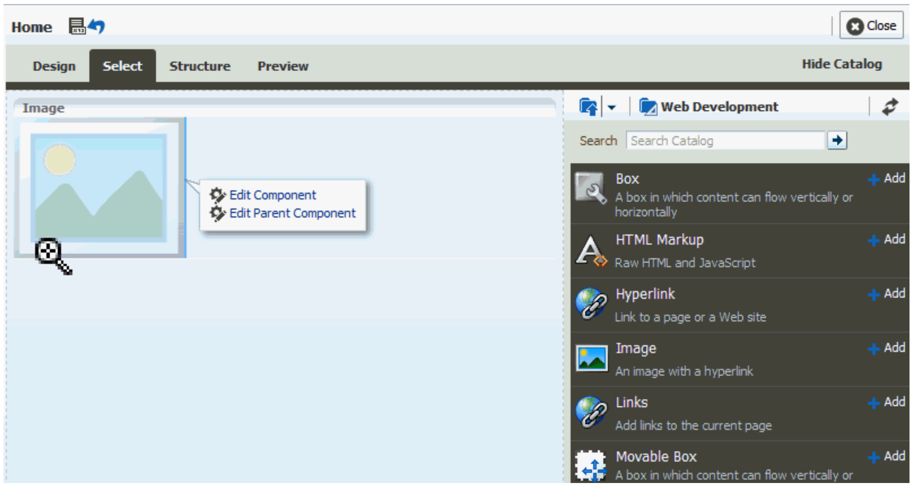
16.3.1.4 About Select View in Edit Mode

The *Select view* provides a WYSIWYG rendering of the page and its content, where you can select a component for quick access to its properties or the properties of its parent component. You cannot delete a component in Select view.

Just like Design view, the resource catalog displays inline on the right side of the page, where you can select components to add to the page (Figure 16–6).

In Edit mode, Select view is not available by default. You can enable it by setting the value of the `DesignViews` attribute of the `Page Customizable` component to `select` or `all`. For information, see Appendix B.1.1, "Page Customizable Component."

Figure 16–6 Select View of Page Edit Mode



16.3.1.5 About Preview View in Edit Mode

The *Preview view* displays a preview of the published page, as it will appear in your application.

In Edit mode, Preview view is not available by default. You can enable it by setting the value of the `DesignViews` attribute of the `Page Customizable` component to `preview` or `all`. For information, see Appendix B.1.1, "Page Customizable Component."

16.4 Customizing Capabilities in Page View Mode

Composer enables users to customize pages in View and Edit modes. This section provides an overview of user customization tasks you can enable for users in page View mode. Such tasks include rearranging components, collapsing and expanding components, and changing the page layout. You can enable the capabilities described in this section by adding the following Composer design-time components to a page: `Panel Customizable`, `Show Detail Frame`, `Custom Actions`, and `Layout Customizable`. For information about these components, see Section 16.7, "Composer Components." Changes made to a page in View mode are available only to the user making these changes.

This section contains the following subsections:

- Section 16.4.1, "Rearrange Components"
- Section 16.4.2, "Change the Layout"
- Section 16.4.3, "Expand and Collapse Components"

Note: For a detailed description of the editing tasks that you can perform on a page, see the "Creating and Editing a Portal Page" chapter in *Building Portals with Oracle WebCenter Portal*.

16.4.1 Rearrange Components

This capability allows users to organize page components so that the content most useful to them displays at the top of the page. Users can rearrange components in two ways:

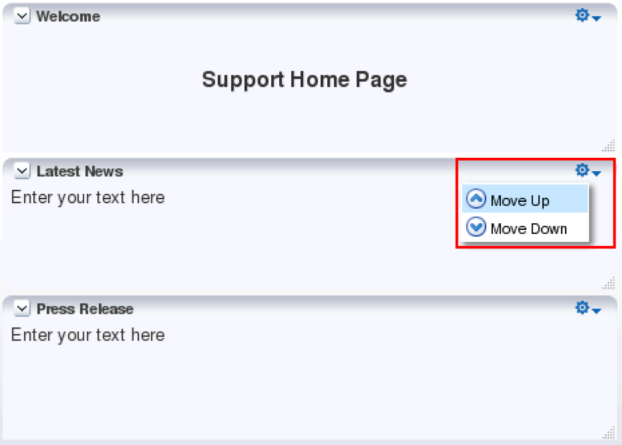
- Dragging and dropping

Users can rearrange components by dragging and dropping them within the Panel Customizable component or across Panel Customizable components on the page. As it is difficult to identify a Panel Customizable component in View mode, users can simply drag the component over the spot they want to place it. A solid box indicates a receptive drop location.

- Using the **Actions** menu

  The Move actions on a Show Detail Frame or portlet component enable users to move these components within a parent Panel Customizable component. If a Panel Customizable has multiple child components, then a child Show Detail Frame or portlet can be moved to the left and right or above and below, relative to the position of other child components. Figure 16–7 shows a sample Show Detail Frame component with Move Up and Move Down actions. In this example, selecting **Move Down** moves the Latest News component immediately below the Press Release component.

Figure 16–7 Actions Menu on a Show Detail Frame



16.4.2 Change the Layout

This capability allows users to switch between a set of predefined layouts provided by Composer. Through the use of the **Change Layout** icon, users can choose among eight different layouts to suit their needs and preferences. The Layout Customizable component in the Composer library enables the display of a **Change Layout** icon on the page, as shown in Figure 16–8.

Figure 16–8 Change Layout Icon

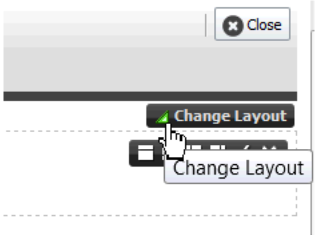
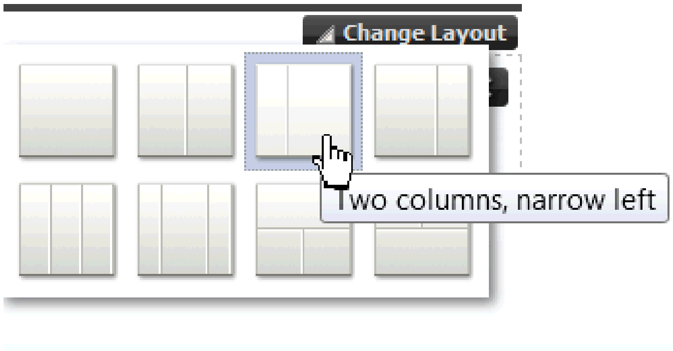


Figure 16–9 shows the layout options available with the Layout Customizable component. A gray colored border highlights the layout currently applied to the page or area.

Figure 16–9 Layout Options

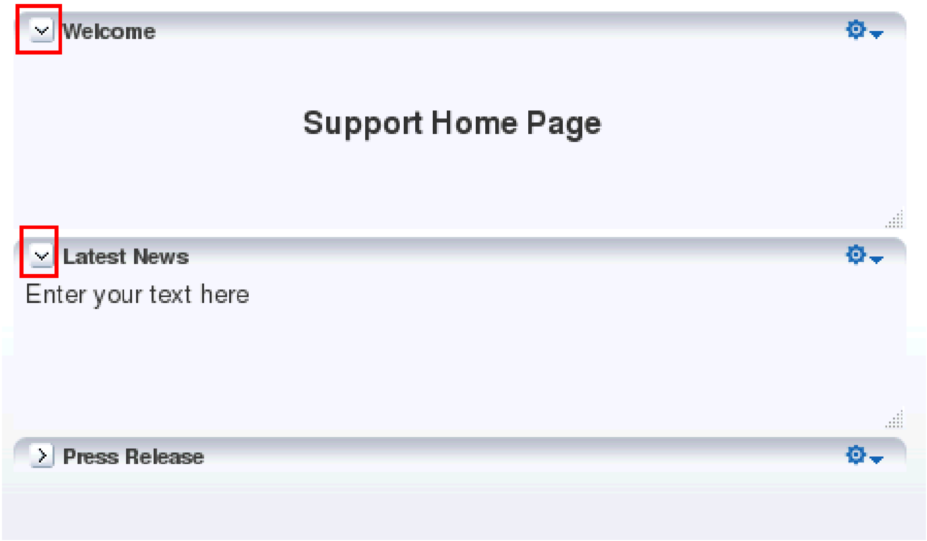


16.4.3 Expand and Collapse Components

By enabling expand and collapse components on a page, you can include more detailed information on a page without cluttering its visual appearance. Users can collapse and expand the components as desired.

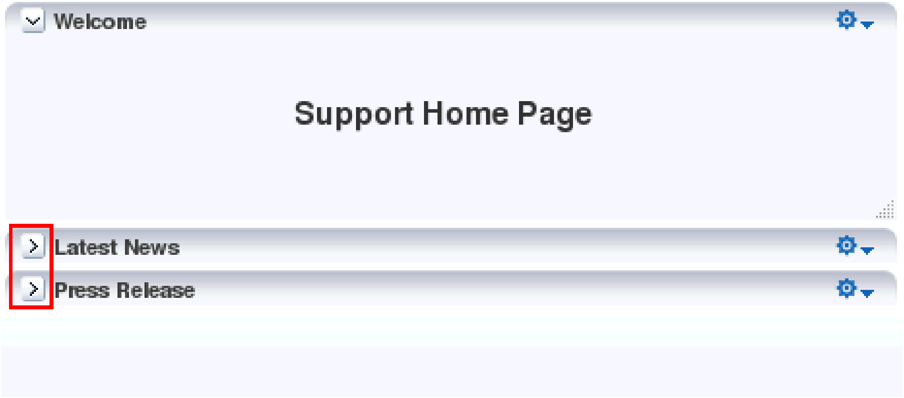
A **Collapse** icon on the header of a `Show Detail Frame` or portlet enables users to collapse such a component and display only its header. Figure 16–10 shows the **Collapse** icons on `Show Detail Frame` components.

Figure 16–10 Collapse Icon on a Show Detail Frame



The **Expand** icon on a collapsed component enables users to disclose the component so that it displays the header and content. Figure 16–11 shows the **Expand** icons on two collapsed `Show Detail Frame` components.

Figure 16–11 Expand Icon on a Show Detail Frame



16.5 Editing Capabilities in Design View and Add Content View in Page Edit Mode

This section describes the editing capabilities that Composer provides in page Edit mode. It contains the following subsections:

- Section 16.5.1, "Add Content"
- Section 16.5.2, "Rearrange Page Content"
- Section 16.5.3, "Edit Component Properties and Parameters"
- Section 16.5.4, "Reset and Override Component Properties in the Current Layer"
- Section 16.5.5, "Edit Resource Strings"
- Section 16.5.6, "Show or Hide Components"
- Section 16.5.7, "Delete Components"
- Section 16.5.8, "Change the Layout"
- Section 16.5.9, "Edit Page Properties"
- Section 16.5.10, "Wire Components to Page Parameters"
- Section 16.5.11, "Reset Page"
- Section 16.5.12, "Reset Application Customizations on Detecting Errors"
- Section 16.5.13, "Customize the Display Name of Child Components"
- Section 16.5.14, "Create Labels On Saving Application Customizations"
- Section 16.5.15, "Manage Application Customizations"

Note: You can restrict users from performing all or some of these tasks by securing the application and applying customization restrictions on components. For more information, see Section 16.8, "Security and Composer."

For a detailed description of the runtime editing tasks that users can perform on a page, see the "Editing a Page" section in *Building Portals with Oracle WebCenter Portal*.

16.5.1 Add Content

Authorized users may want to add custom content to the page, such as a portlet displaying news, for example, or stock updates. Composer enables users to add content within any container in Edit mode. Oracle WebCenter Portal's resource catalog, also known as *Oracle Business Dictionary*, contains resources that users can add to a page. These include documents, Oracle ADF components, portlets, and task flows. The catalog can be invoked in the following ways in Edit mode of a page:

- In Add Content and Design views, by clicking the **Add Content** button on any container component on the page.

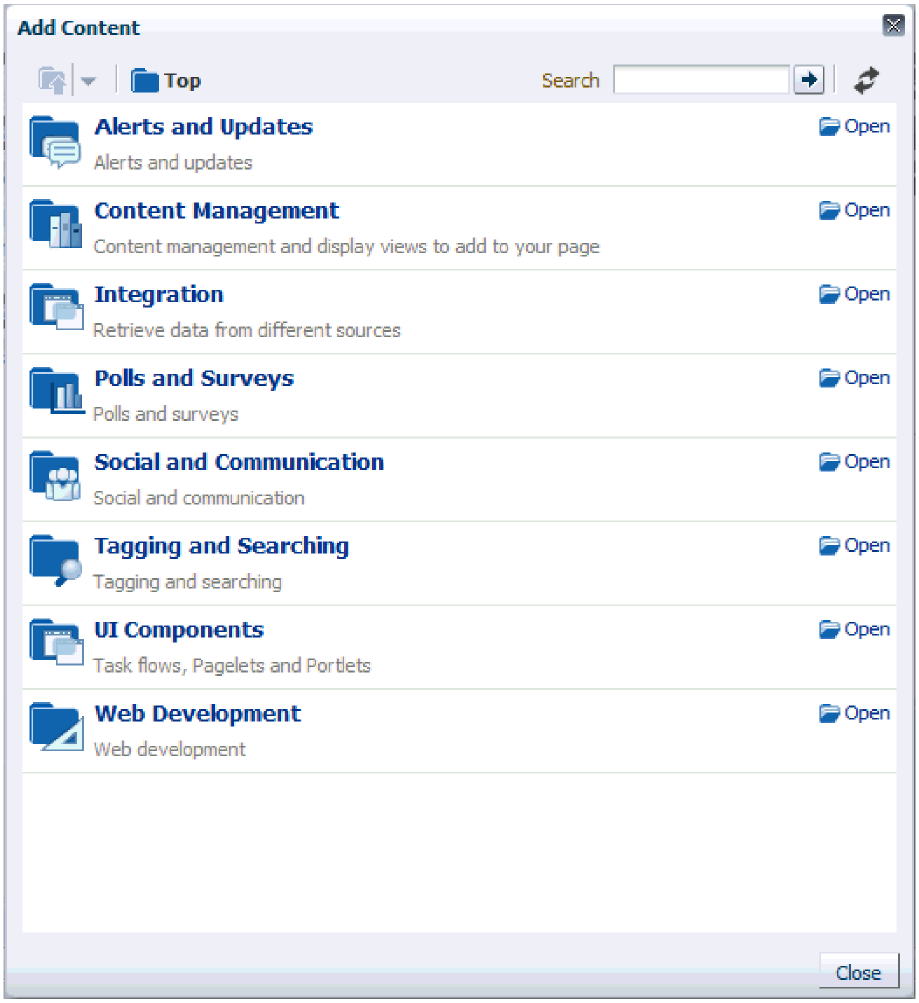
  In Design view, by default an inline resource catalog is available, but you can hide it to show each area of the page with an Add Content button to help you identify where you can add components.

- In Structure view, by selecting a container component and clicking the **Add content into the selected component** icon in the Structure view toolbar.

> **Notes:** If you restrict customization on a container component, then users cannot add components inside it at runtime. See Section 22.1, "Applying Component-Level Restrictions by Defining Customization Policies" for more information.

Figure 16–12 shows the Add Content dialog in a Portal Framework application.

Figure 16–12 Add Content Dialog



Alerts and Updates
Alerts and updates

Content Management
Content management and display views to add to your page

Integration
Retrieve data from different sources

Polls and Surveys
Polls and surveys

Social and Communication
Social and communication

Tagging and Searching
Tagging and searching

UI Components
Task flows, Pagelets and Portlets

Web Development
Web development

The Add Content dialog contains folders and components. An **Open** link next to an item in the catalog indicates that the item is a folder. Authorized users can drill down into the folder by clicking this link. An **Add** link next to an item indicates that the item can be added to the page. An Add link can appear next to a component or a folder. The component is added as the first child in the container on which the Add Content link was clicked.

Note: The **Top** icon in the dialog enables users to return to a top-level folder.

If you configure drop handlers for adding resources to the page, the Add link shows a context menu with different options for adding the component to the page. For more information, see Section 19.6, "Configuring Event Handlers for Composer UI Events."

Depending on its configuration, the dialog exposes all or a subset of the following components to authorized users:

Note: For information, see Chapter 14, "Developing Resource Catalogs."

- ADF Faces Components

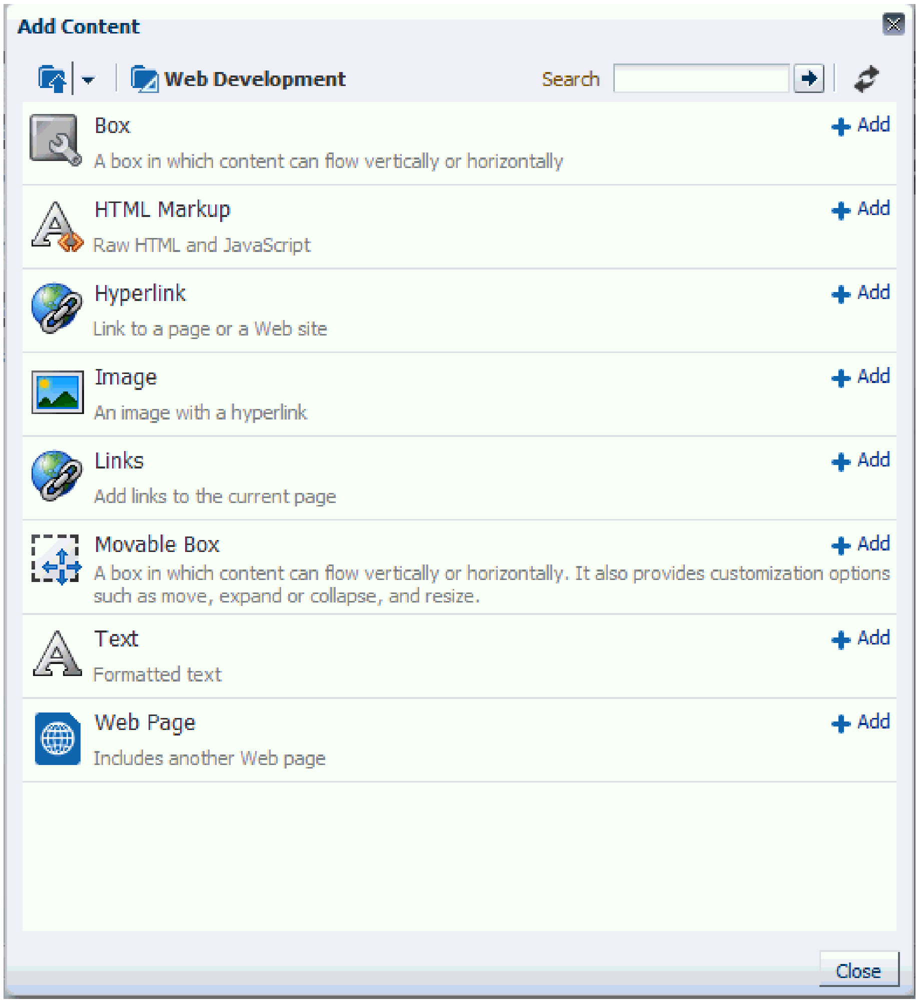
  The Web Development folder provides `Box` and `Movable Box` components that are analogous to the JDeveloper design time components `Panel Customizable` and `Show Detail Frame`. In JDeveloper, these components are available in the Composer tag library.

  > **Note:** `Panel Customizable` and `Show Detail Frame` components added to the page at design time continue to be called the same. These components are not denoted as `Box` and `Movable Box` components respectively at runtime.

  This folder also provides `HTML Markup`, `Hyperlink`, `Image`, `Text`, and `Web Page` components that are analogous to the JDeveloper design time components `Output Text`, `Go Link`, `Go Image Link`, `Rich Text Editor`, and `Inline Frame` respectively. In JDeveloper, these components are available in the ADF Faces tag library.

  The **Web Development** folder in the catalog contains these components, as shown in Figure 16–13.

Figure 16–13 ADF Faces Components You Can Add to a Page



Add Content

Web Development

Search

Box — A box in which content can flow vertically or horizontally — + Add

HTML Markup — Raw HTML and JavaScript — + Add

Hyperlink — Link to a page or a Web site — + Add

Image — An image with a hyperlink — + Add

Links — Add links to the current page — + Add

Movable Box — A box in which content can flow vertically or horizontally. It also provides customization options such as move, expand or collapse, and resize. — + Add

Text — Formatted text — + Add

Web Page — Includes another Web page — + Add

Close

- Task Flows

Authorized users can add custom task flows and out-of-the-box WebCenter Portal tools and service task flows to the page. A task flow added to a page is automatically enclosed in a `Movable Box` component. As a result, the task flow displays a header with options to move or delete the component.

> **Note:** The `Movable Box` component surrounding a task flow is displayed only if the task flow is displayed on the page. That is, if you do not grant even View permission on a task flow, the Movable Box surrounding it is also not displayed on the page.

- Portlets

  The **Portlets** folder lists all the registered producers. Authorized users can navigate to the required portlet and add it to the page. The Portlets folder exposes portlets from any Java-PDK or WSRP producer that was registered in Oracle JDeveloper. For information about registering portlet producers, see Chapter 63, "Consuming Portlets."

- Documents

  The **Content Management** folder lists documents and folders that users can add to the page.

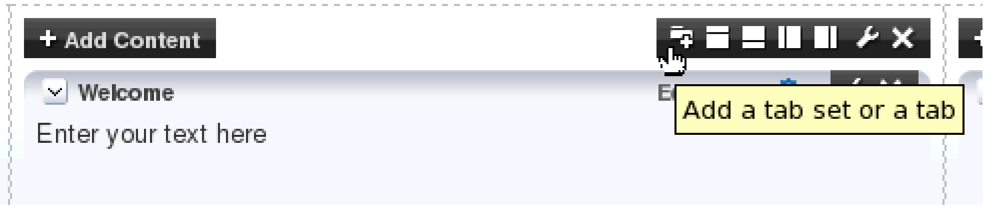
For more information, see the "Working with Web Development Components on a Page" section in *Building Portals with Oracle WebCenter Portal*.

16.5.1.1 Add a Tab Set or a Tab to a Box Component

The toolbar on the `Box` component provides an option (Figure 16–14) to add a tab or a set of tabs to the `Box` component. Use tabs to add content regions as separate layers on the page. Each new tab is placed as a layer below the currently selected tab and contains a region that can be populated with content.

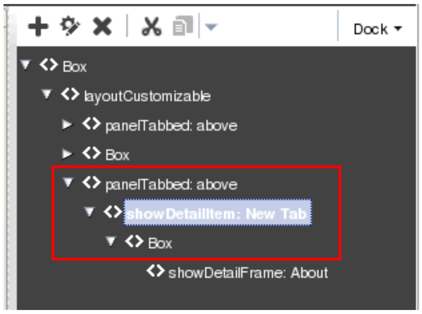
The **Add a tab set or a tab** icon is available when the `showTabAction` attribute of a `Panel Customizable` component is set to `true`.

Figure 16–14 Add Tab Set or a Tab Icon on a Box Component



When a user clicks the **Add a tab set or a tab** icon on the `Box` component, Composer adds a tab around the `Box` component. In Structure view, the `Box` component is nested inside a `Show Detail Item` component, which in turn is nested inside a `Panel Tabbed` component, as shown in Figure 16–15. Users can add any number of tabs in this way.

Figure 16–15 Tab Component in Structure View



```
▼ <> Box
  ▼ <> layoutCustomizable
    ► <> panelTabbed: above
    ► <> Box
    ▼ <> panelTabbed: above
      ▼ <> showDetailItem: New Tab
        ▼ <> Box
            <> showDetailFrame: About
```

The first tab that a user adds will surround the selected `Box` component. Each subsequent tab will contain a new `Box` component inside it.

Authorized users can delete a tab by clicking the **Delete** icon on a tab in Add Content or Design view. On deleting the last tab, the `Panel Tabbed` component is deleted from the page. Alternatively, the tab set can be deleted by deleting the `Panel Tabbed` component in Structure view. To delete only the tab without deleting the `Box` inside it, users must move (cut and paste) the `Box` outside the `Panel Tabbed` component first and then delete the `Panel Tabbed` component.

16.5.1.2 Add Box Components Adjacent to Existing Ones

A toolbar on the `Box` component in Add Content and Design view provides options to add another `Box` component before or after the component. This capability enables users to modify the layout of components on the page.

When a user clicks an **Add** icon on the `Box` component, Composer adds another `Box` component before or after it and surrounds both `Box` components with a `Panel Group Layout`. Depending on the icon used, the new `Box` component is added to the left, right, above, or below the original `Box` component, and the `layout` attribute on the parent `Panel Group Layout` component is set to `horizontal` or `vertical`. Users can add many contiguous `Box` components in this way. Every time the orientation changes for new a `Box` component, a new `Panel Group Layout` with the appropriate layout setting (horizontal or vertical) is added around the new and the existing `Box` components.

Note: The Add icons are not rendered on the component if:

- The `allowAction` attribute on the `Panel Customizable` component is set to `false`
- The `Panel Customizable` is stretched
- The `Panel Customizable` component is restricted

For more information, see Chapter 22, "Modifying Default Security Behavior of Composer Components."

Users can delete `Box` components that they added using the Add icons, in Add Content, Design, and Structure views.

Note: If the `Panel Group Layout` has only two `Box` components and you delete one of them, then the `Panel Group Layout` is also deleted.

The Box component toolbar contains the following Add Box icons in addition to the Edit icon:

- Add Box Above
- Add Box Below
- Add Box Left
- Add Box Right

16.5.1.2.1 Add Box Above Clicking the **Add box above** icon (Figure 16–16) adds a Box component above the selected Box component. The layout attribute on the Panel Group Layout is set to vertical.

Figure 16–16 Add Box Above Icon on a Box Component

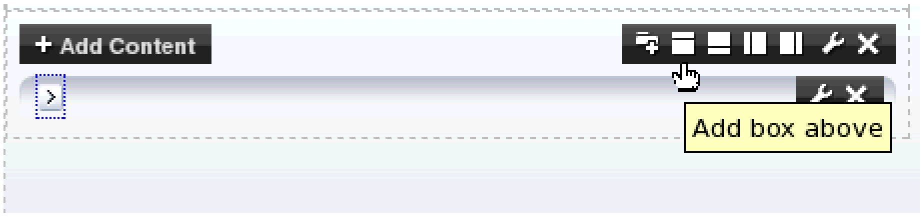


Figure 16–17 shows how the Box component appears in Structure view before adding another Box component adjacent to it.

Figure 16–17 Box Component Before Adding Another One Adjacent to It

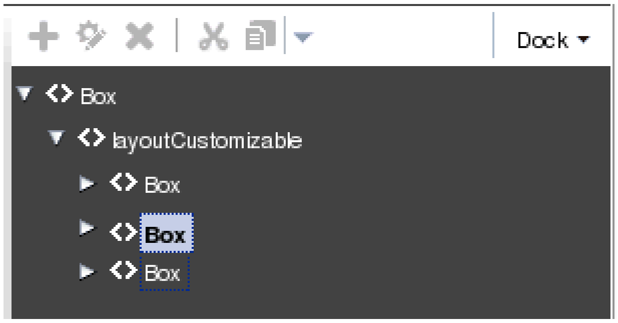
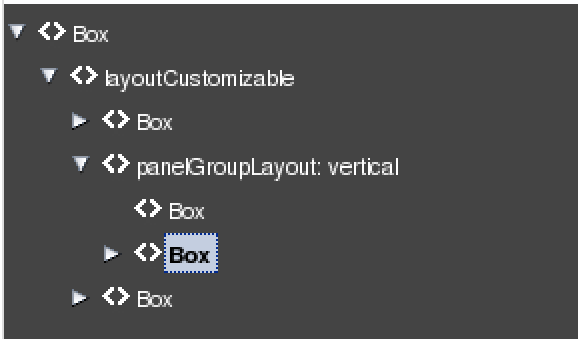


Figure 16–18 shows the two Box components vertically aligned in the component navigator.

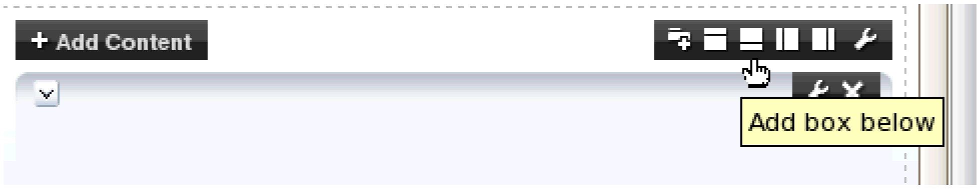
Figure 16–18 Box Component Added Above



Users can click the **Add box above** icon repeatedly to add many contiguous Box components vertically within the same parent Panel Group Layout.

16.5.1.2.2 Add Box Below Clicking the **Add box below** icon (Figure 16–19) adds a Box component below the selected Box component. The layout attribute on the Panel Group Layout is set to vertical.

Figure 16–19 Add Box Below Icon on a Box Component



Users can click the **Add box below** icon repeatedly to add many contiguous Box components vertically within the same parent Panel Group Layout.

16.5.1.2.3 Add Box Left Clicking the **Add box left** icon (Figure 16–20) adds another Box component to the left of the selected Box component. The layout attribute on the Panel Group Layout is set to horizontal.

Figure 16–20 Add Box Left Icon on a Box Component

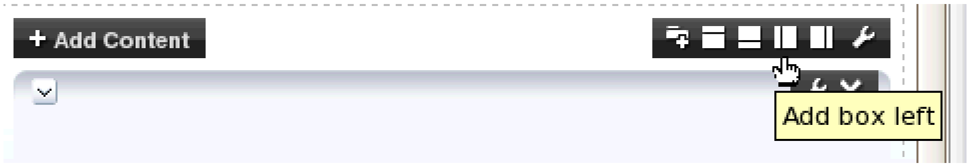
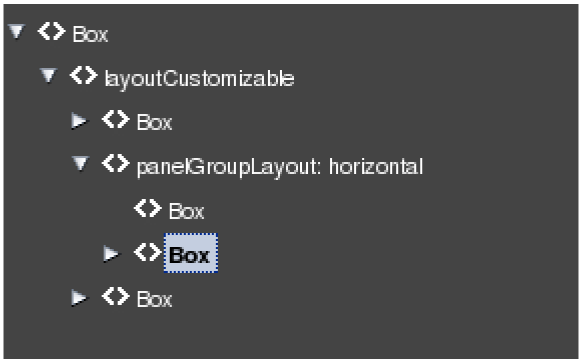


Figure 16–21 shows the two Box components horizontally aligned in the component navigator.

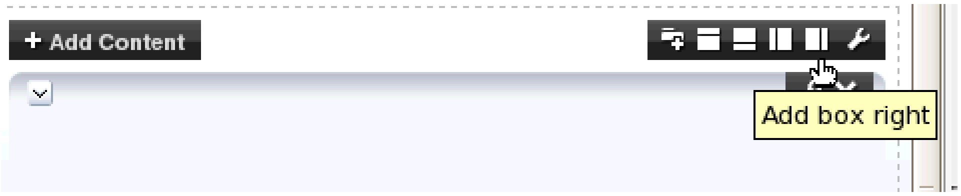
Figure 16–21 Box Component Added to the Left



Users can click the **Add Box Left** icon repeatedly to add many contiguous Box components horizontally within the same parent Panel Group Layout.

16.5.1.2.4 Add Box Right Clicking the **Add box right** icon (Figure 16–22) adds another Box component to the right of the selected Box component. The layout attribute on the Panel Group Layout is set to horizontal.

Figure 16–22 Add Box Right Icon on a Box Component



Users can click the **Add box right** icon repeatedly to add many contiguous `Box` components horizontally within the same parent `Panel Group Layout`.

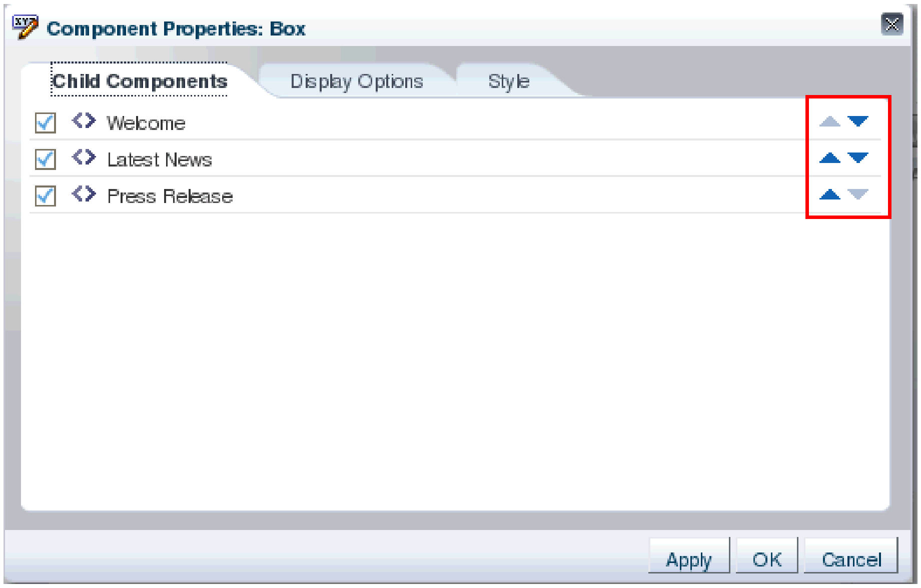
16.5.2 Rearrange Page Content

This capability allows users to organize page components based on where they are easiest to use; for example, users can move content most useful to them to the top of the page. In Add Content and Design views, users can rearrange content on the page in the following ways:

- Drag and drop a component within the same `Panel Customizable` component or across `Panel Customizable` (or `Box`) components on the page.
- Use the Move actions on the Actions menu of a `Show Detail Frame` or portlet to move it within the parent `Panel Customizable` component. Depending on the number of child components in the `Panel Customizable` and how these components are oriented, a component can be moved to the left and right, or up and down.
- To resequence components within a container, in the Component Properties dialog for the container, click the Child Components tab and use the up and down arrows shown against each child component (Figure 16–23).

> **Notes:** A component on which customization is restricted, can be rearranged inside its parent container if the parent is customizable.
>
> The Child Components tab displays a list of direct child components at the top (Components list) of the tab, followed by a list of all facets defined for the component (Fixed Components list). There are no up and down arrows against facet components as these components cannot be rearranged. The Fixed Components list is displayed only if the component contains facets.

Figure 16–23 Resequencing Options on the Child Components Tab of a Container



16.5.3 Edit Component Properties and Parameters

The Component Properties dialog enables users to edit component properties and the parameters associated with components, such as portlets and task flows.

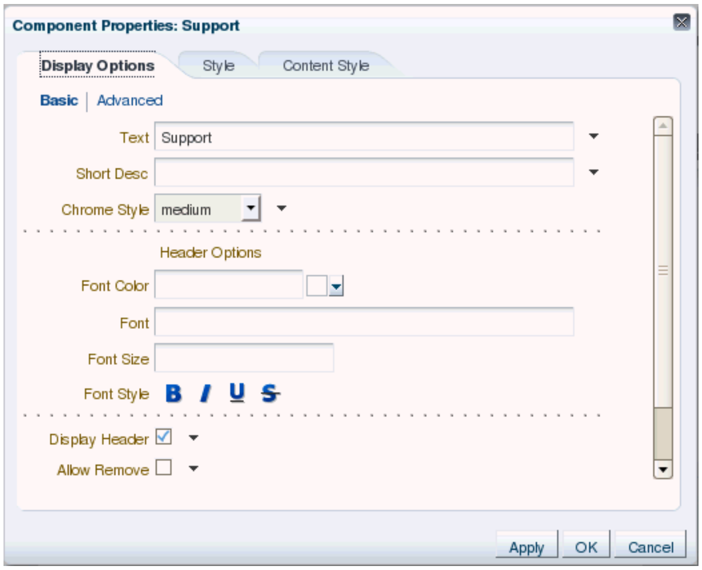
Note: A component cannot be edited if:

- The `Id` attribute was not set for the component at design time
- The component or any of its attributes have been restricted

  For information about restricting customization, see Chapter 22, "Modifying Default Security Behavior of Composer Components."
- It is a component from the ADF Faces library

In Add Content and Design views, clicking the **Edit** icon on a component displays the Component Properties dialog, shown in Figure 16–24.

Figure 16–24 Component Properties Dialog



Component Properties: Support

Text: Support

Short Desc:

Chrome Style: medium

Header Options

Font Color:

Font:

Font Size:

Display Header ☑

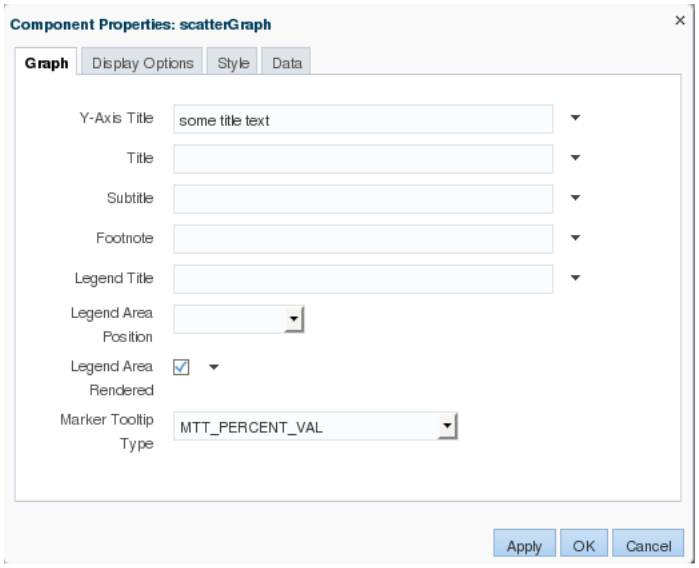
Allow Remove □

The Display Options tab enables users to edit visual properties, such as background and title. The Parameters tab, if available, enables users to edit parameters for components such as portlets and task flows.

Graphs, Pie Graphs, and Gauges

If the component is a Graph, Pie Graph, or Gauge component, additional panels are available to edit the properties of the graph.

Figure 16–25 Additional Component Properties Tab for Graph Component



Component Properties: scatterGraph

Y-Axis Title: some title text

Title:

Subtitle:

Footnote:

Legend Title:

Legend Area Position:

Legend Area Rendered ☑

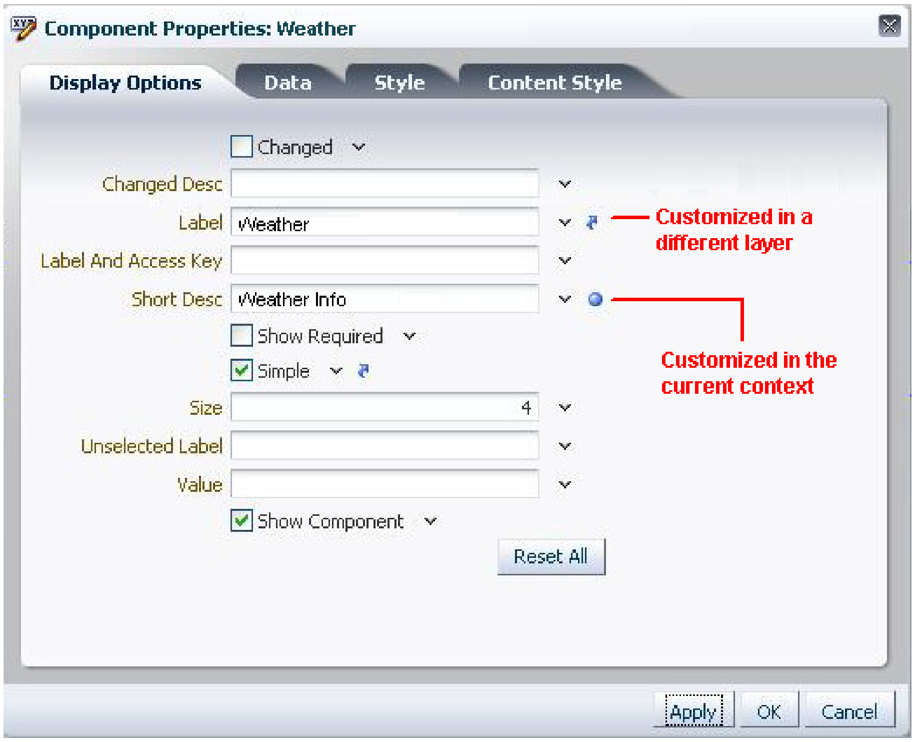
Marker Tooltip Type: MTT_PERCENT_VAL

Visual Indication of Component Property Customization

An icon next to a property on the Display Options tab indicates that the property has been edited at runtime. Two different icons are used to indicate changes made in the current context and in a different layer. Figure 16–26 shows the two different icons used to indicate that the property was updated.

Note: Visual indication of property customization is relevant only if you have configured multiple customization layers in your application. For information, see Section 21.3, "Adding Customization Layers to View and Edit Modes: Example."

Figure 16–26 Visual Indication of Property Customization



☐ Changed

Changed Desc

Label: Weather

Label And Access Key

Short Desc: Weather Info

☐ Show Required

☑ Simple

Size: 4

Unselected Label

Value

☑ Show Component

Customized in a different layer

Customized in the current context

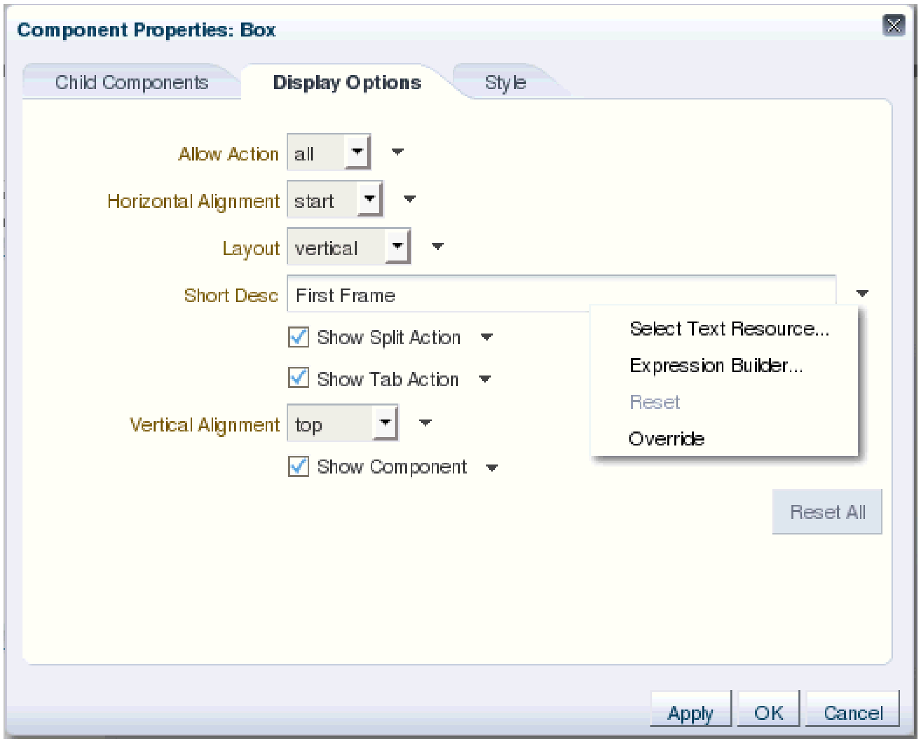
The Component Properties dialog also enables users to reset visual properties in the current context. For more information, see Section 16.5.4, "Reset and Override Component Properties in the Current Layer."

16.5.4 Reset and Override Component Properties in the Current Layer

Users can reset and override application customizations made to a component's properties in the current layer. The Component Properties dialog provides options to reset a particular property or all properties on that panel in the Component Properties dialog.

An **Override** option on the context menu for a property (Figure 16–27) enables users to use a value from another layer as a fixed value for the current layer. For example, a user edits the `Short Desc` property on a `Movable Box` component in layer `X` and sets it to `First Frame`. A user editing this component in another layer, `Y`, can choose `First Frame` as the fixed value for `Short Desc` in layer `Y`. All users that are accessing the component in layer `Y` will see this value henceforth. The value for `Short Desc` does not change in layer `Y` even if it is changed in layer `X`. When a user enters a value for a property, the Override option for that property is grayed out.

Figure 16–27 Reset and Override Options in the Component Properties Dialog



Allow Action: all

Horizontal Alignment: start

Layout: vertical

Short Desc: First Frame

☑ Show Split Action

☑ Show Tab Action

Vertical Alignment: top

☑ Show Component

A **Reset** option on the context menu for a property enables users to reset that property to its original state. The Reset option is grayed out when the property has not yet been edited in that layer, or when the user has chosen to override the property with the displayed value, which comes from another layer.

A **Reset All** button enables users to reset all properties on the Display Options tab. Users can reset only application customizations applied to visual properties, which are rendered on the Display Options tab.

Note: The Reset option and the Reset All button are not available if the component was created newly or none of the attributes were modified in the current layer.

16.5.5 Edit Resource Strings

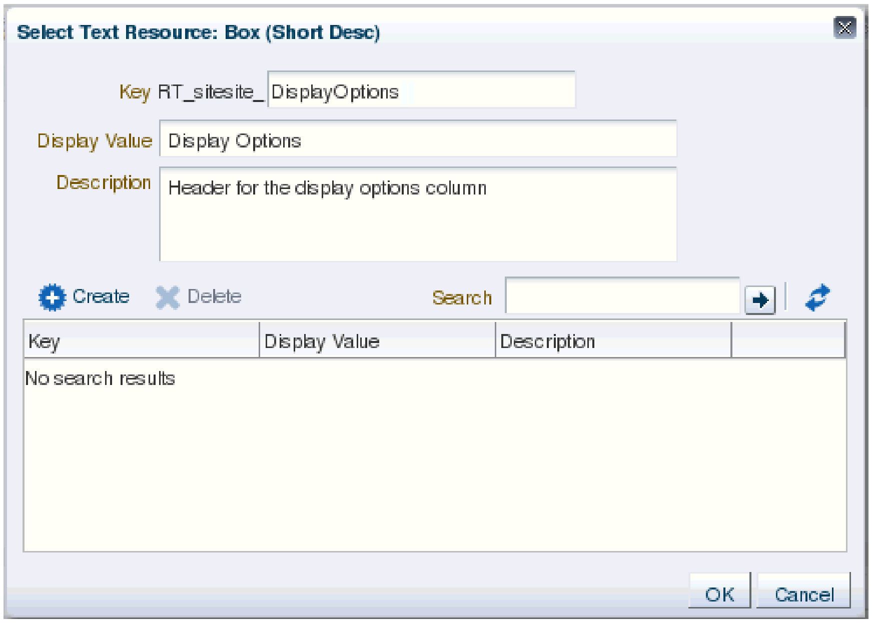
Component properties edited in Composer are available only in the current language. For example, if you add a task flow to your page, the task flow title you enter in Composer is available only in the current language. As a result, users in different locales do not see the translated values for such properties. To provide language support for component properties edited at runtime, Composer enables users to edit resource strings for properties that take String values. This is similar to the resource string editor feature provided by JDeveloper. Changes made to resource strings in Composer are saved into an application override bundle. This bundle is sent for translation and the translated versions are imported back into the application. This way, users are able to see the property values in their language.

For more information about the override bundle and configuring resource string editing in existing (release 11.1.1) Portal Framework applications, see Section 20.12, "Configuring Runtime Resource String Editing."

At runtime, for component display options that can take String values, the Edit menu next to the property field provides a Select Text Resource option, as shown in Figure 16–27. Users can select this option to edit resource strings for properties.

The Select Text Resource dialog (Figure 16–28) provides options to search existing resources, edit or delete resource keys, and add new resource key/value pairs.

Figure 16–28 Select Text Resource Dialog



Select Text Resource: Box (Short Desc)

Key RT_sitesite_ DisplayOptions

Display Value: Display Options

Description: Header for the display options column

Key	Display Value	Description
No search results		

The Select Text Resource dialog displays the following:

- **Key field**: For specifying a new key name or modifying the existing name. This is a String value used for uniquely identifying a locale-specific object in the resource bundle.

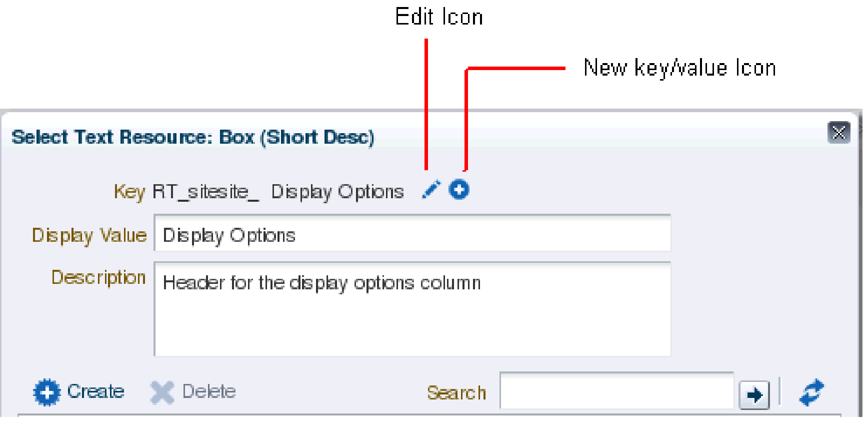
  The key name is automatically prefixed with the MDS layer to which the resource belongs. The prefix helps distinguish keys created at runtime from those created at design time.

  The **Edit** and **New key/value** icons (Figure 16–29), displayed for existing keys, enable users to perform the following tasks:

  – **Edit**: Modify the key value for an existing resource string. The string with new values is saved into the override bundle.

  – **New key/value**: Create key and value pairs in the application override bundle.

Figure 16–29 Icons for Creating and Editing Resource String Keys



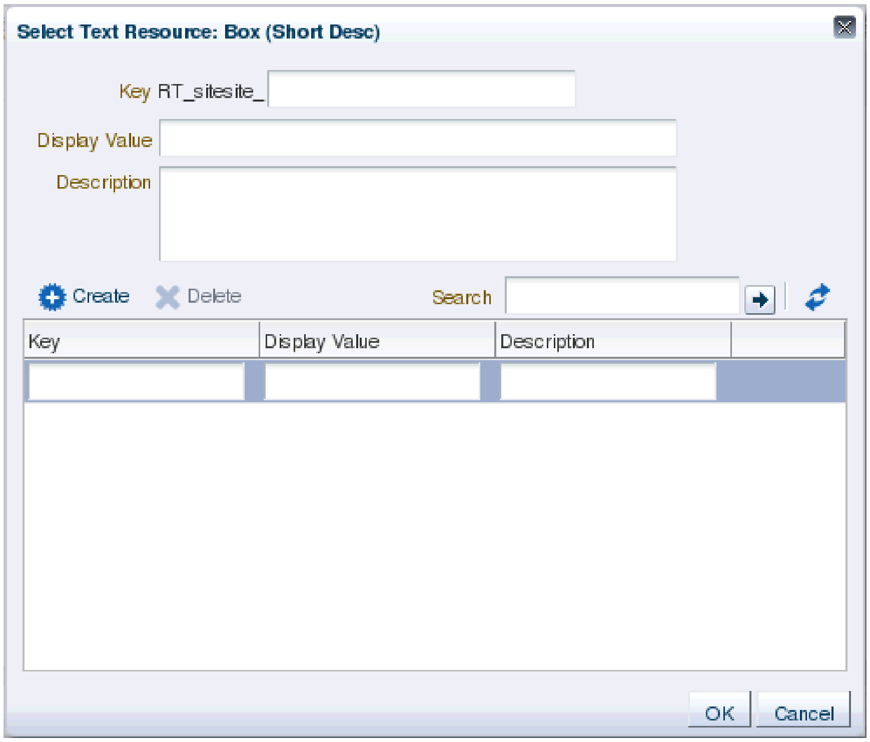
Edit Icon
New key/value Icon
Select Text Resource: Box (Short Desc)
Key RT_sitesite_ Display Options
Display Value
Display Options
Description
Header for the display options column
Create
Delete
Search

Users can edit only strings that were created in the same MDS layer. Other strings appear as read-only.

> **Note:** When you try to override the default content in the resource bundle by directly entering values in the Select Text Resource dialog, the changes do not take effect and the page may appear blank.
>
> Therefore, it is recommended that you create a new resource string instead of directly entering values in the Select Text Resource dialog.

- Display Value field: For specifying a resource string to translate for display in the UI or modifying an existing string.
- Description field: For specifying a translatable description of the resource or modifying an existing description.
- Create button: For creating a new resource string. On clicking the **Create** button, the search results table provides a new row with input fields for creating a new resource. Users can double click inside the row (Figure 16–30) and create a new string by specifying values for the Key, Display Value, and Description, and then click **OK**.

Figure 16–30 Fields for Creating a New Resource String in the Search Results Table



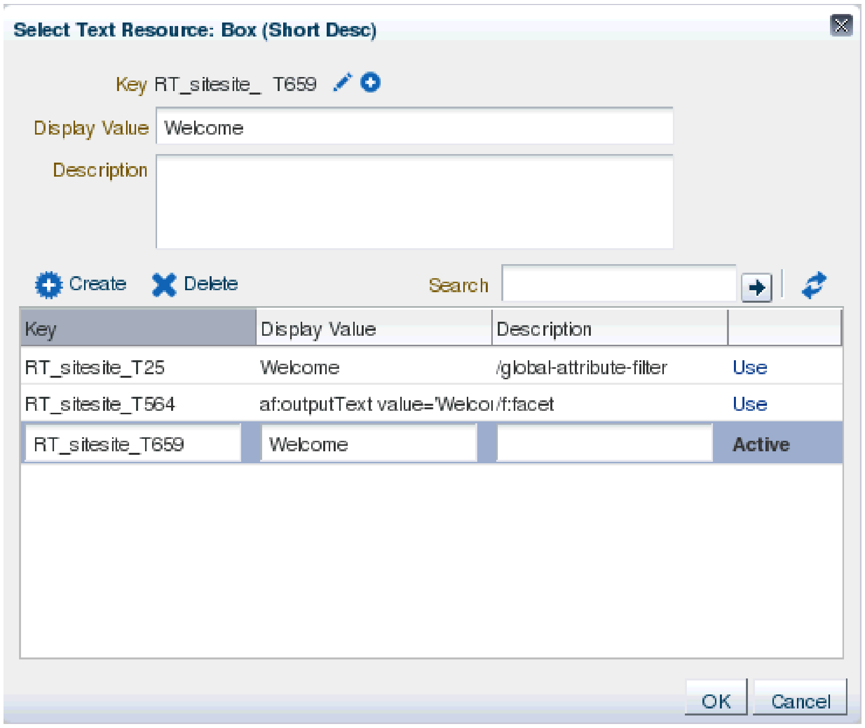
Users can just create inactive strings that get saved to the override bundle. Clicking the **Use** button in the last column selects a string for use as the current property value.

- Delete button: For deleting a selected resource from the search results table.
- Search field: For searching existing resources. Users can search for strings that were created in the same layer, in a different MDS layer, or resource bundles defined and used in a JSPX file at design time.
- Refresh: For refreshing the search results table.
- Search results table: For displaying search results, editing strings, and specifying values for new strings.

  Users can edit strings that were created in the same layer. Other strings created at design time or in a different MDS layer can only be used for the property, but not edited.

  A link or a status indicator toggle displays in the last column and enables users to promote a string to be the active, to-be-translated resource or identifies a string as the active resource (Figure 16–31).

Figure 16–31 Active Status on a Resource String



Select Text Resource: Box (Short Desc)

Key RT_sitesite_ T659

Display Value Welcome

Description

Key	Display Value	Description	
RT_sitesite_T25	Welcome	/global-attribute-filter	Use
RT_sitesite_T564	af:outputText value='Welco	/f:facet	Use
RT_sitesite_T659	Welcome		Active

Note: When searching for resource strings created at design time, Composer searches for the `c:set` tag that is used when specifying resource strings in JSPX files.

The following example shows the `c:set` element used for defining the `ComposerBundle` in a JSPX page:

```
<c:set var="portalBundle"
        value="#{compBundle['test.resource.ComposerBundle']}"/>
```

Notes

- Composer supports creation of around 500 resource strings at runtime. Beyond this number, application performance slows down.
- The search criteria in the resource string editor is case-sensitive.
- To search for the description of a resource string, the user must provide the complete string value in the search criteria.
- The resource string editor does not display string descriptions for entries created in Properties bundle or List Resource bundle formats in JDeveloper.
- The option to edit resource strings is disabled for properties on the Parameters and Events tabs.

  If the EL value for an ADF resource is referenced in a page definition parameter such as page parameter, task flow parameter, or portlet parameter, then the binding EL returns an empty value. Users must avoid referencing ADF resource EL values in page definition parameters.

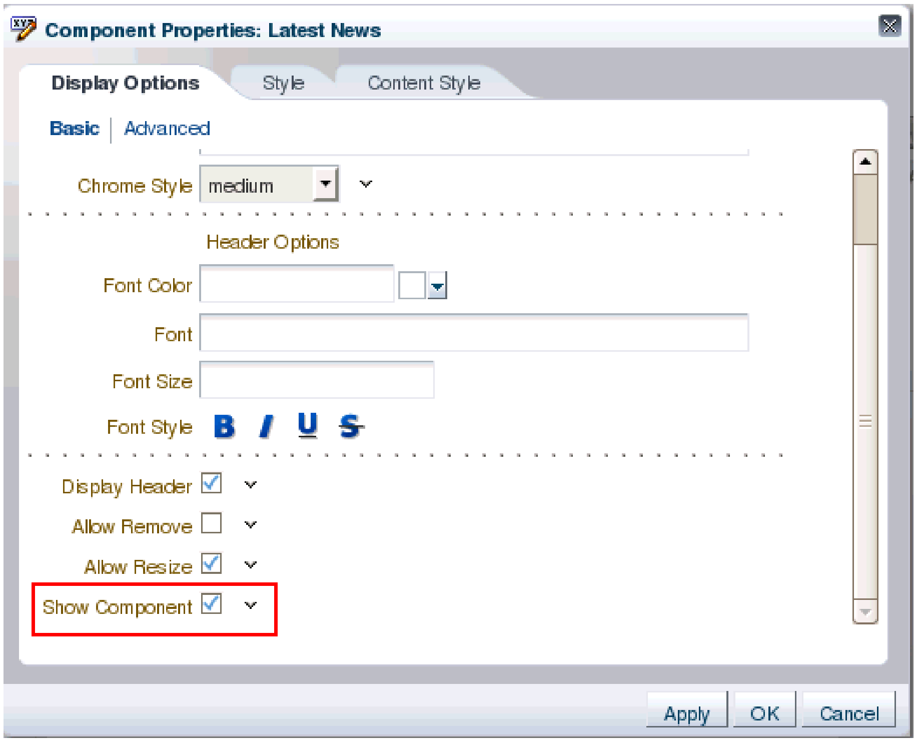
16.5.6 Show or Hide Components

Users can choose to show and hide components selectively on the page using various options. Users can hide or show a component in the following ways:

> **Note:** Show or hide behavior is tied to the component's `rendered` property. When a user hides a component, its `rendered` property is set to `false` and vice versa. If the `rendered` attribute on a component has an EL value, then that value is lost on using the show or hide option. The value is set to `true` or `false`.

- Click the **Edit** icon on the component. In the Component Properties dialog, deselect the Show Component check box (Figure 16–32).

Figure 16–32 Show Component Option in the Component Properties Dialog



Chrome Style: medium

Font Color:

Font:

Font Size:

Display Header ☑

Allow Remove □

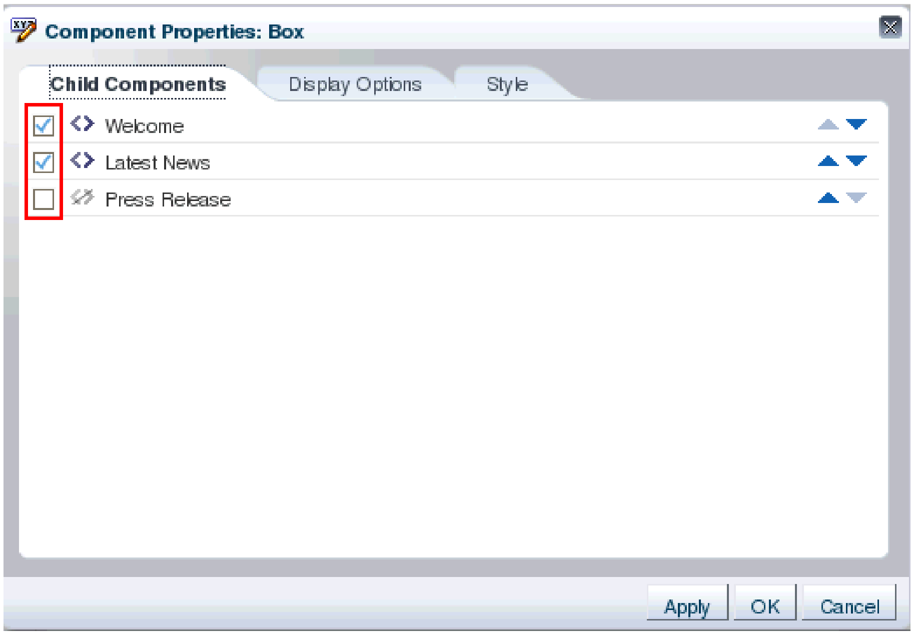
Allow Resize ☑

Show Component ☑

Deselecting the Show Component check box and clicking Apply or OK in the dialog renders the component on the page again.

- Click the **Edit** icon on the component's container. On the Child Components tab in the Component Properties dialog, deselect the check box shown against the component name to hide a component. (Figure 16–33)

Figure 16–33 Hide Component Link in a Container's Component Properties Dialog



☑ Welcome
☑ Latest News
□ Press Release

16.5.7 Delete Components

Users can delete a component from the page by clicking the **Delete** icon on its header.

A Delete dialog prompts users to confirm deletion.

Note: If you defined customization restrictions on a component, then the **Delete** icon is disabled for the component at runtime. For more information, see Section 22.1.1, "How to Define Type-Level Customization Policies."

16.5.8 Change the Layout

The **Change Layout** icon enables users to select a layout from a set of eight predefined layouts. The default page layout is `threeColumn`.

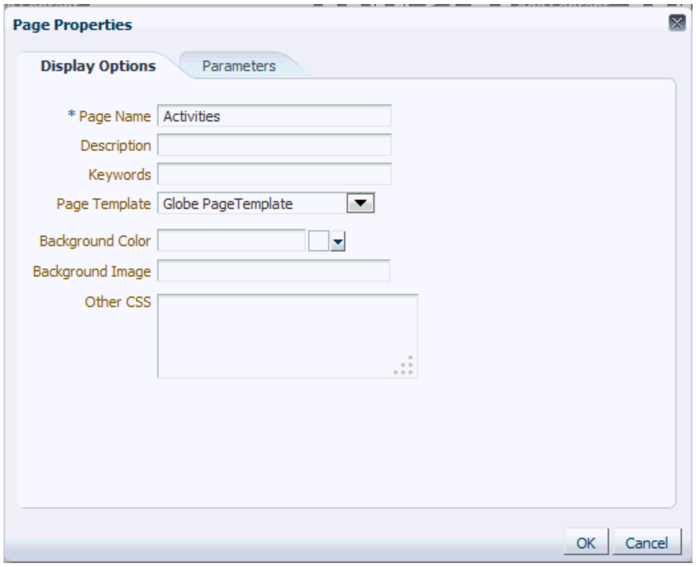
In Structure view, users can select the `Layout Customizable` component and view its properties. The layout options are displayed in the Component Properties dialog. Users can select any predefined layout and click Apply or OK.

Note: Predefined layout options are available to users only if you have added a `Layout Customizable` component to the page at design time. For more information, see Section 16.7.5, "Layout Customizable."

16.5.9 Edit Page Properties

In the **Page Properties** dialog, users can create or edit a page's parameters and display properties. Figure 16–34 shows the Security tab in the Page Properties dialog.

Figure 16–34 Page Properties Dialog



Page Properties

* Page Name: Activities

Description:

Keywords:

Page Template: Globe PageTemplate

Background Color:

Background Image:

Other CSS:

On the Parameters tab, users can create page parameters that can be linked to component properties, thereby enabling any component on the page to adapt to the page context. For example, suppose that a page has a parameter called `SYMBOL` with the default value `ORCL`. This page contains the Stock Chart, Stock Price, and Company Info task flows. The task flows can be linked with the page parameter so that all the task flows respond to a change in the value of `SYMBOL` and are updated accordingly.

16.5.10 Wire Components to Page Parameters

Composer enables users to link portlets and task flows with page parameters so that these components can read the page parameters and change their behavior accordingly.

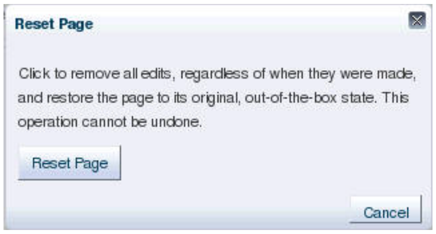
Users can wire portlet and task flow parameters to page parameters using the Component Properties dialog. For more information, see the "Wiring Pages, Task Flows, Portlets, and ADF Components" chapter in *Building Portals with Oracle WebCenter Portal*.

In addition to wiring components and page parameters, Composer also enables users to pass values for display options and parameters through page URLs. For more information, see the "Passing Parameter Values Through the Page URL" section in *Building Portals with Oracle WebCenter Portal*.

16.5.11 Reset Page

The **Reset Page** icon is available on the page in Edit mode. This icon invokes the Reset Page dialog that provides options to remove edits made to a page in the current layer or top layer and reset it to a previously saved version or its original, out-of-the-box state.

Figure 16–35 Reset Page Dialog



Reset Page

Click to remove all edits, regardless of when they were made, and restore the page to its original, out-of-the-box state. This operation cannot be undone.

Note: The **Reset Page** icon is a default add-on rendered on the Composer toolbar. You can disable this icon if you do not want users to reset the page. For information, see Section 19.2.5, "How to Selectively Display Add-Ons."

Roll Back to a Specific Label

If your application is configured to use a database store, a new version of the page is generated each time a user saves application customizations. If a sandbox is configured for your application, by creating a label with the `SAVE_LABEL_%` convention you can ensure that Composer resets the page as follows:

- If there is only one label name following the `SAVE_LABEL_%` convention, then Composer resets the page to its state in that label.
- If there is no label name following the `SAVE_LABEL_%` convention, then Composer resets the page to its original, out-of-the-box state.
- If there are multiple labels following the `SAVE_LABEL_%` convention, then Composer resets the page to its state in the latest label among these.

To roll back to a specific label, you must have configured your application to use a sandbox. Specifically, the namespace of the page being customized must be defined in the `<metadata-namespaces>` section in the application's `adf-config.xml` file. For more information, see Section 21.2.1, "How to Enable Composer Sandbox Creation."

Rolling back to a specific label is useful if your application has dependencies on the customization metadata and resetting the page to its original state can cause issues.

Notes:

- Users can only reset application customizations done on a page. Components defined in the base page or a shared component's page are left intact.
- When a user resets a page, components added to the page at runtime are removed. However, if the page uses a template, then components added inside `Panel Customizable` components on the template are not removed.

Example 16–1 shows the sample code to create a label with a `SAVE_LABEL_` prefix.

*Example 16–1 Code to Create a Label Prefixed with SAVE_LABEL_*

```
import oracle.mds.versioning.VersionHelper;
import oracle.mds.naming.Namespace;

....
```

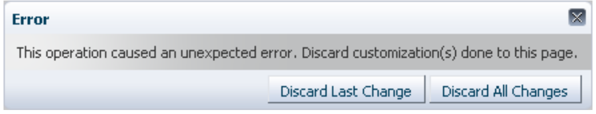
```
long labelNumber = (long)(Math.random() * 1000000000);
String savedlabel = "SAVE_LABEL_" + labelNumber;

MDSInstance mdsInstance =
(MDSInstance)ADFContext.getCurrent().getMDSInstanceAsObject();

VersionHelper vh = VersionHelper.get(mdsInstance);

Namespace[] validNamespaces = new Namespace[1];
Namespace pageNamespace = Namespace.create(<pagePath or taskflow path>,
NamespaceRestriction.CUSTOMIZATIONS);

validNamespaces[0] = pageNamespace;
vh.createLabel(savedlabel, null, validNamespaces);
```

16.5.12 Reset Application Customizations on Detecting Errors

Composer provides a mechanism to alert users to customization errors that may cause a page to break. Users are alerted about errors in the following ways:

- If the change is saved to MDS, an Error dialog, shown in Figure 16–36, provides the option to roll back only the last change or all changes that users made in the current context.

Figure 16–36 Error Dialog Prompting Users to Discard Changes

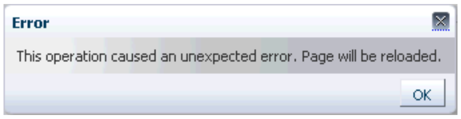


Error

This operation caused an unexpected error. Discard customization(s) done to this page.

- If the change is not yet saved to MDS, an Error dialog, shown in Figure 16–37, simply informs users that an error occurred and the page will be reloaded.

Figure 16–37 Error Dialog Informing Users About Page Reload



Error

This operation caused an unexpected error. Page will be reloaded.

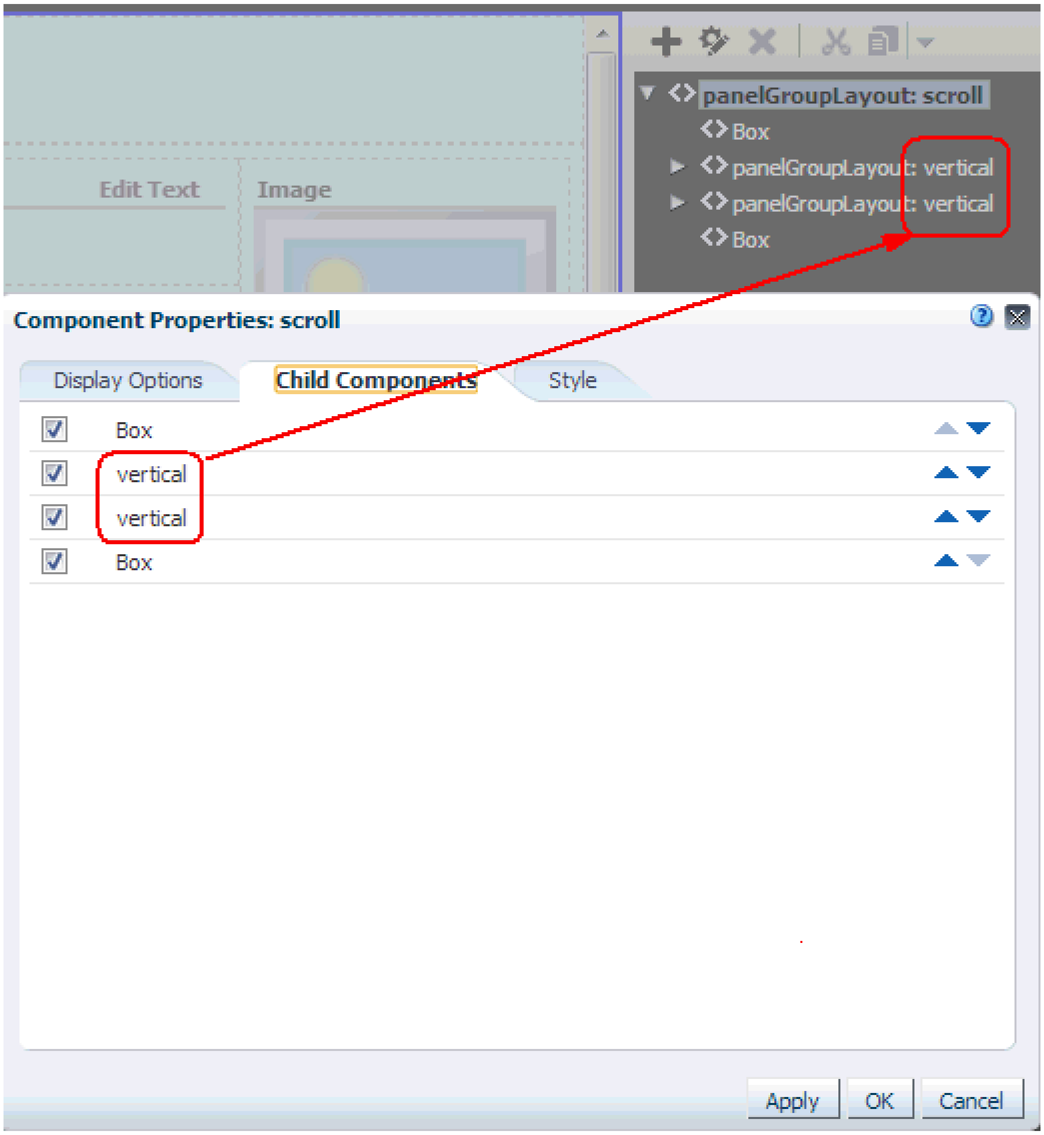
Errors occurring while performing the following operations may cause the page to break:

- Pasting a component at the wrong position while using the Cut and Paste options; for example, pasting a table column outside the table.
- Adding components or task flows; for example, adding a task flow that calls a Web service, which in turn gives an error.
- Moving `Show Detail Frame` components on the page using the drag-and-drop method.

16.5.13 Customize the Display Name of Child Components

On a page, a component may be a parent to a number of child components. When you view the properties of the parent component, you can find its child components listed on the **Child Components** tab of the Component Properties dialog. When multiple child components are of the same type, they may be indistinguishable from each other in the list of child components. For example, a `panelGroupLayout` component uses the value of its `layout` attribute (for example, `vertical`) as the display name, so multiple `panelGroupLayout` components may all have the same name in the list of child components, as illustrated in Figure 16–38 in Structure view.

Figure 16–38 Child Component Names: Structure View and Component Properties Dialog



☑ Box
☑ vertical
☑ vertical
☑ Box

If you need to identify and work with a specific child component, you can edit the source code of a page to specify a unique display name for any component to make it easily distinguishable. This display name is shown in hint text and the Component Properties dialog. The custom attribute that implements this functionality is `composer_name_hint`, which you can specify using `<f:attribute>`, as follows:

Syntax:

```
<f:attribute name="composer_name_hint" value="display_name"/>
```

Example:

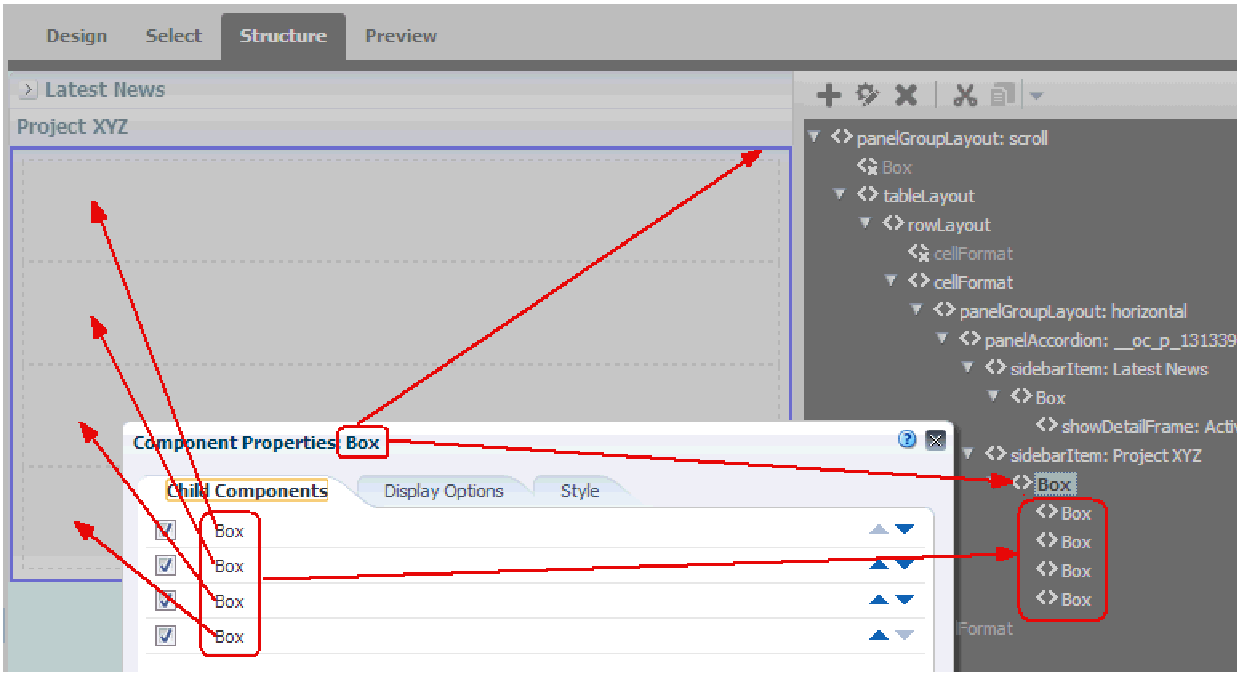
```
<af:panelGroupLayout id="pgl1" layout="scroll" inlineStyle="">
```

```
  <f:attribute name="composer_name_hint" value="Main Area"/>
</ af:panelGroupLayout>
```

Figure 16–39 shows the **Child Components** tab of the Component Properties dialog for a parent `panelCustomizable` (Box) component that includes four `panelCustomizable` (Box) child components.

Notice that the display name `Box` is used for the parent component and the four child components, making them indistinguishable.

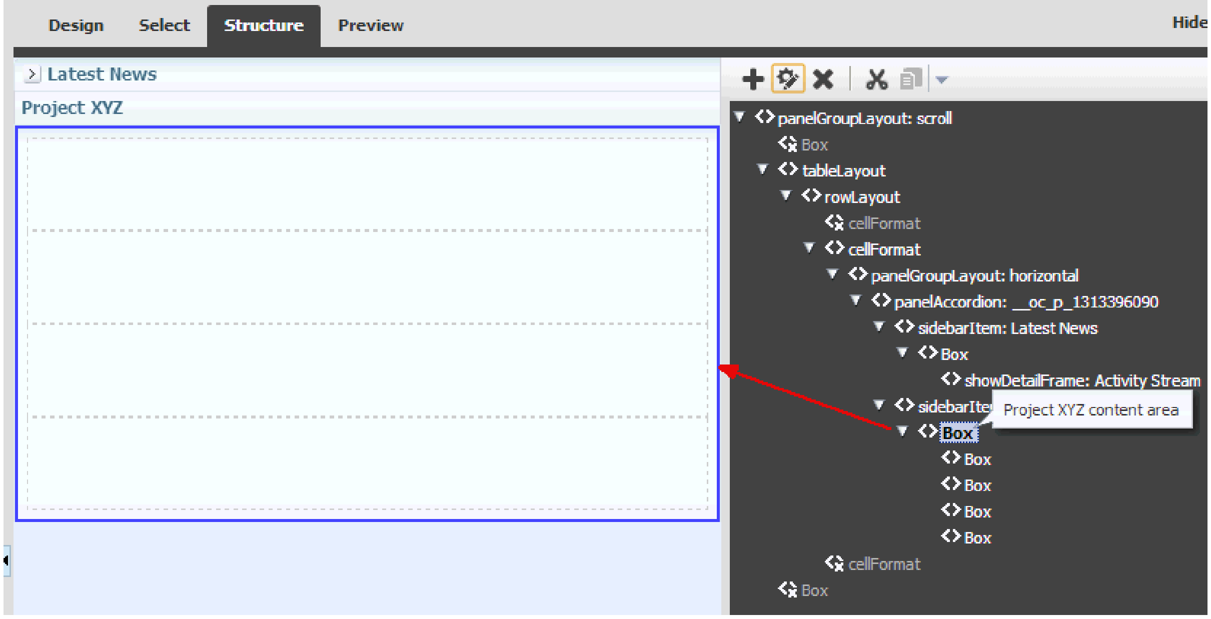
Figure 16–39 Components Without composer_name_hint Defined: Structure View and Component Properties Dialog



To customize the display name of these components, you can edit the source code to add a `composer_name_hint` attribute to each component. The `composer_name_hint` value is exposed in the following locations:

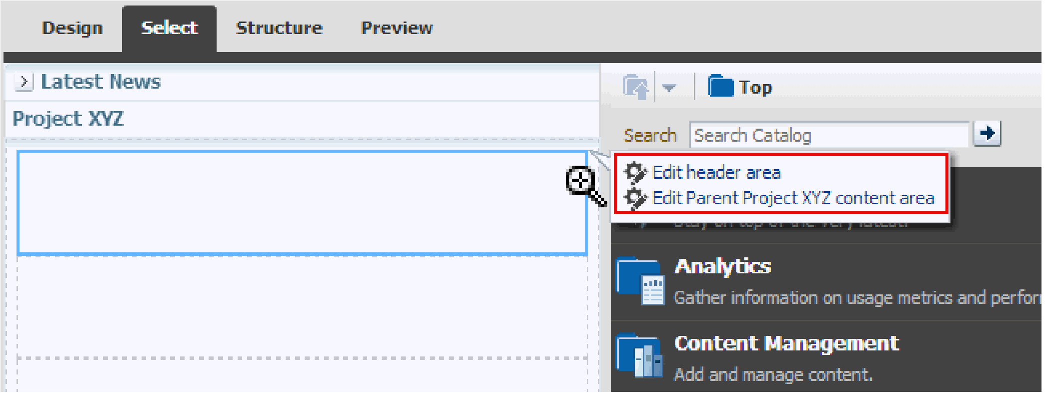
- In Structure view, the `composer_name_hint` value shows as hint text for the component (Figure 16–40).

Figure 16–40 Components With composer_name_hint Defined: Structure View Hint Text



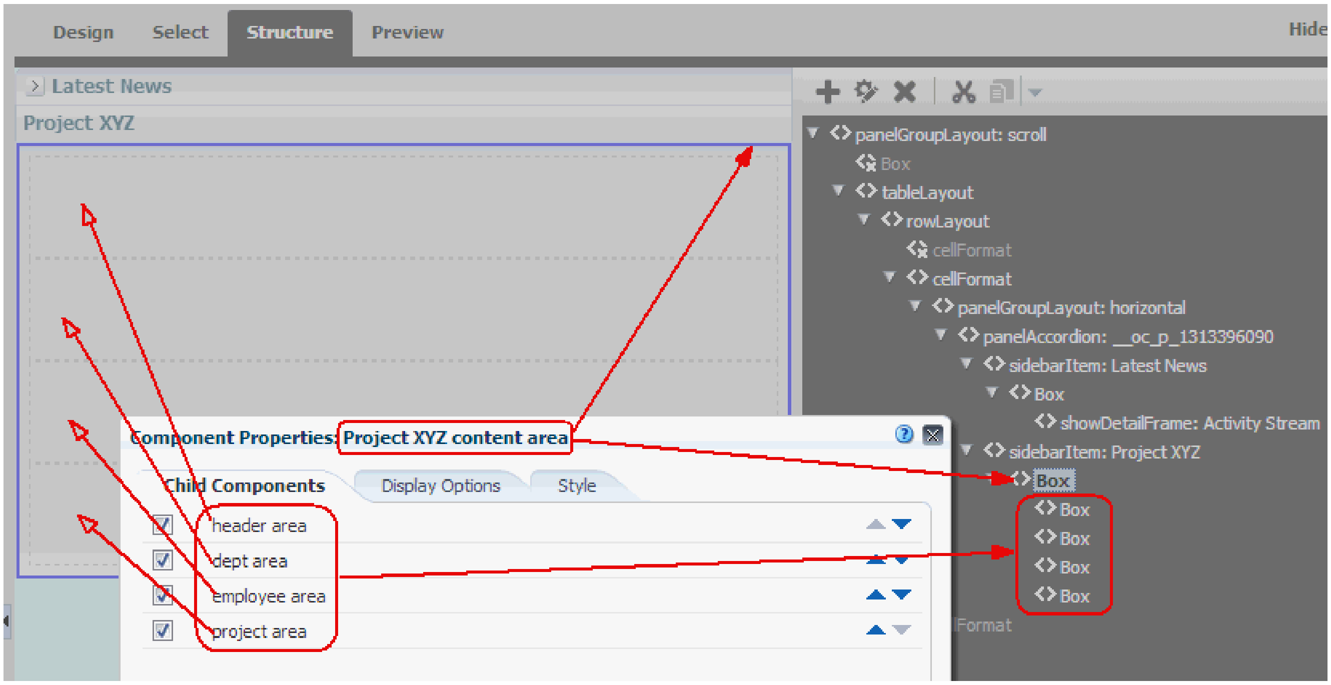
- In Select view, right-clicking on a selected component displays a context menu showing the `composer_name_hint` value for the component and/or its parent component (Figure 16–41).

Figure 16–41 Components With composer_name_hint Defined: Select View Hint Text



- The Component Properties dialog for the component includes the `composer_name_hint` value in its title (Figure 16–42).
- In the parent component's Component Properties dialog, the **Child Components** tab lists each child component using its `composer_name_hint` value as the display name (Figure 16–42).

Figure 16–42 Components With <f:attribute> Defined: Component Properties Dialog



The page source code for the parent Box (`panelCustomizable`) component and its four child Box components shown in Figure 16–42 looks like this:

```
<af:showDetailItem id="82127" text="Project XYZ"
xmlns:af="http://xmlns.server.com/adf/faces/rich" disclosed="true"
inflexibleHeight="100">
   <cust:panelCustomizable id="45399" layout="scroll"
xmlns:cust="http://xmlns.server.com/adf/faces/customizable">
      <f:attribute name="composer_name_hint" value="Project XYZ content area"/>
      <cust:panelCustomizable id="273"
xmlns:cust="http://xmlns.server.com/adf/faces/customizable">
         <f:attribute name="composer_name_hint" value="header area"/>
      </cust:panelCustomizable>
      <cust:panelCustomizable id="959"
xmlns:cust="http://xmlns.server.com/adf/faces/customizable">
         <f:attribute name="composer_name_hint" value="dept area"/>
      </cust:panelCustomizable>
      <cust:panelCustomizable id="393"
xmlns:cust="http://xmlns.server.com/adf/faces/customizable">
         <f:attribute name="composer_name_hint" value="employee area"/>
      </cust:panelCustomizable>
      <cust:panelCustomizable id="941"
xmlns:cust="http://xmlns.server.com/adf/faces/customizable">
         <f:attribute name="composer_name_hint" value="project area"/>
      </cust:panelCustomizable>
   </cust:panelCustomizable>
</af:showDetailItem>
```

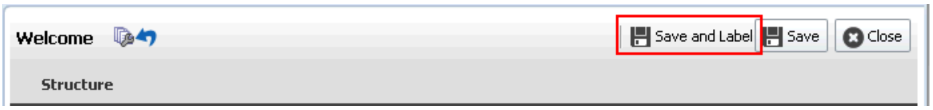
16.5.14 Create Labels On Saving Application Customizations

A Save and Label button on the Composer toolbar, shown in Figure 16–43, enables users to save their application customizations in a new label. Labels created in Composer are stored with a prefix of `composer_`, that is, a label created with the name `myLabel` is stored as `composer_myLabel`.

Creating labels enables users to reset customizations on a selected object to those from a selected label. This can be achieved using the Promote link in Customization Manager. For more information, see the section titled Promote Customization Metadata.

> **Note:** The Save and Label button is displayed only if you have configured a sandbox with an MDS database store for your application and set the `allowLabel` attribute on the `Page Customizable` component to `true`. For more information about this attribute, see Section B.1.1, "Page Customizable Component."

Figure 16–43 Save and Label Button on the Composer Toolbar

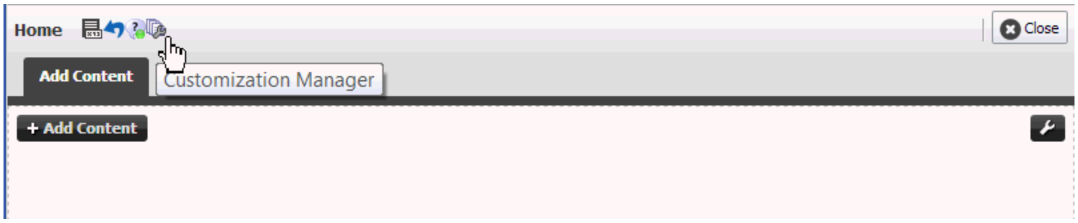


16.5.15 Manage Application Customizations

The Customization Manager is a Composer add-on panel that enables users to manage customization metadata for objects such as XML documents, pages, page fragments, and task flows on the page. It displays a list of all such objects on the page, and provides details about the layers in which these objects are customized. Users can download customization metadata for a selected object, edit it, and upload the revised metadata file. Additionally, the Customization Manager also provides options to delete customizations and promote customizations from a previously saved label.

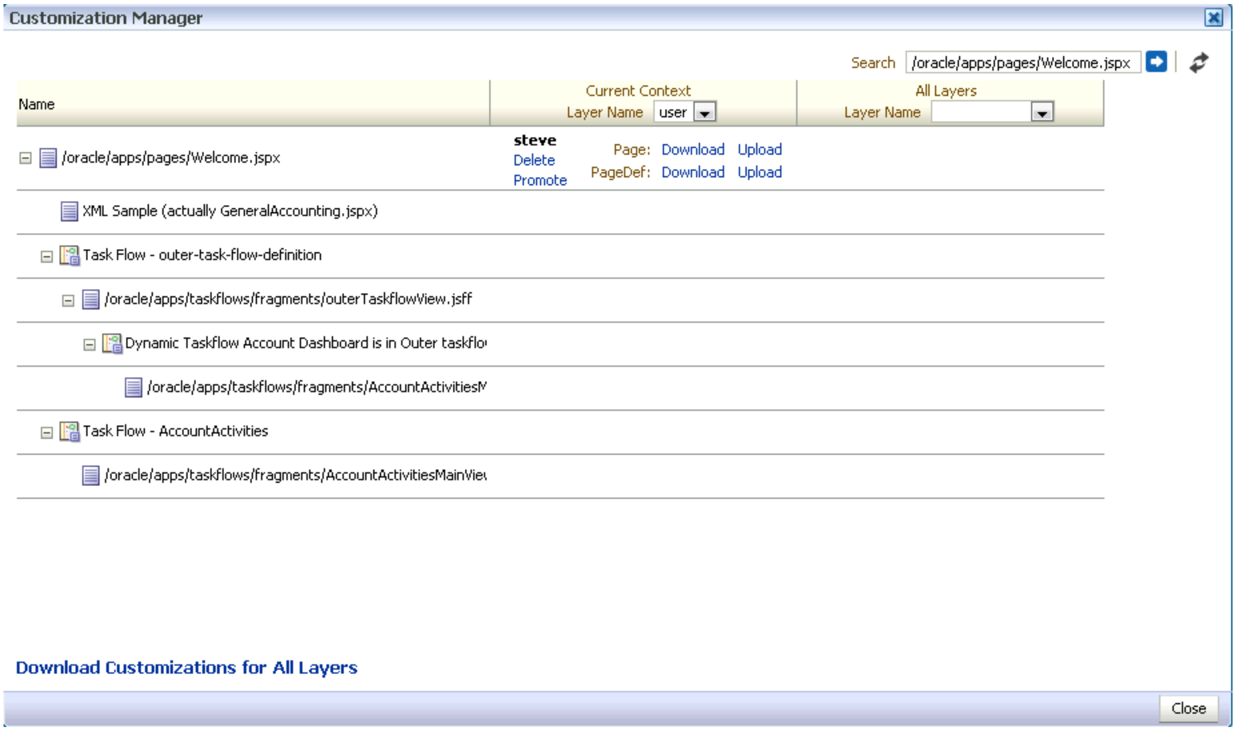
The Customization Manager is not available by default in your custom application. You can enable it by performing certain configurations. For more information, see Section 19.2.4, "How to Display the Customization Manager Add-On." If you configure your application to display the Customization Manager add-on, the Composer toolbar displays the **Customization Manager** icon, as shown in Figure 16–44.

Figure 16–44 Customization Manager Button



Clicking the Customization Manager button invokes the Customization Manager dialog, shown in Figure 16–45.

Figure 16–45 Customization Manager Dialog



Customization Manager

Search /oracle/apps/pages/Welcome.jspx

Name	Current Context Layer Name user		All Layers Layer Name
/oracle/apps/pages/Welcome.jspx	steve Delete Promote	Page: Download Upload PageDef: Download Upload	
XML Sample (actually GeneralAccounting.jspx)			
Task Flow - outer-task-flow-definition			
/oracle/apps/taskflows/fragments/outerTaskflowView.jsff			
Dynamic Taskflow Account Dashboard is in Outer taskflo			
/oracle/apps/taskflows/fragments/AccountActivitiesM			
Task Flow - AccountActivities			
/oracle/apps/taskflows/fragments/AccountActivitiesMainVie			

Download Customizations for All Layers

The Customization Manager displays Delete, Promote, Download, and Upload links against each customized page, fragment, or XML document in each layer. Users can specify a JSPX, JSFF, or XML file name in the search field to view customization details about objects in that file and manage those customizations. To search for a file, you must specify the absolute path to the file, for example, `/oracle/webcenter/portalapp/pages/home.jspx`.

Note: In case of a deeply nested task flow or a task flow with a cyclic dependency, Customization Manager displays a maximum depth of ten task flows.

Users can manage customizations in the current MDS context in which the application is running. The Current Context column displays options to manage customizations in the selected layer. The drop-down menu lists the layers in which the page or fragment was customized. This column is useful for all users who want to manage customizations they have made. The All Layers column displays options to manage customizations in all layers in the application. This column is useful for administrators who want to manage customizations made in all layers.

Notes:

- If you have configured a sandbox for your application, all Customization Manager operations are performed in the sandbox; for example, when a user uploads a customization document, it is stored in the sandbox until the user saves or discards changes made during that session.
- You can customize the Customization Manager to only display options of your choice. For example, you can show or hide the Download, Delete, or Upload links. Further, you can choose to show details for the current context only or for all layers only.

  You can make these settings using parameters on the Customization Manager task flow. By enabling parameter support on the task flow, you can enable users also to customize the Customization Manager at runtime. For more information, see Section 19.8, "Defining Property Filters."

This section describes the capabilities provided by the Customization Manager. It contains the following subsections:

- Download Customization Metadata
- Download Customization Metadata for All Customized Objects
- Upload Customization Metadata
- Delete Customization Metadata
- Promote Customization Metadata

Download Customization Metadata

A Download link enables users to download the customization document for the selected page, fragment, or XML document from the selected layer. This is useful if a user wants to edit customization metadata for a component or inspect the customization metadata. For example, if a page displays errors, the user can download the customizations, review them, and send them to Oracle Support Services, if required. This helps in diagnosing any customization issues on the page.

The Save dialog lets users select a location for saving the document. Users can edit this file locally and upload it to the site again. For information about uploading files, see Upload Customization Metadata.

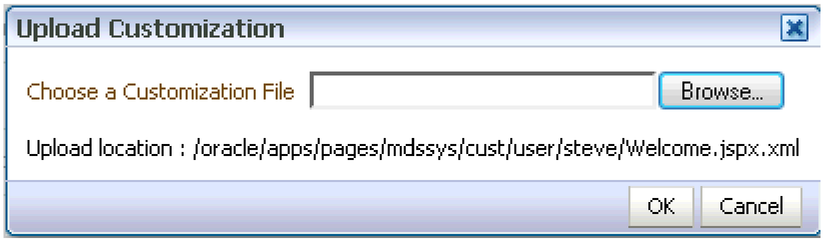
Download Customization Metadata for All Customized Objects

The Download Customizations for All Layers link at the bottom of the page enables users to download a ZIP file containing all customization documents shown in the Customization Manager.

Upload Customization Metadata

An Upload link enables users to upload a customization document for the selected artifact, such as page, fragment or XML document, in a specific layer. Figure 16–46 shows the Upload Customization dialog that lets users select the file they want uploaded.

Figure 16–46 Upload Customization Dialog



Upload location : /oracle/apps/pages/mdssys/cust/user/steve/Welcome.jspx.xml

The artifact is then customized based on the metadata in the uploaded document.

Note: The `usesUpload` attribute on the `Form` tag on the page controls the display of Upload links in Customization Manager. If you set `usesUpload` to `false`, the Upload links will not work.

Delete Customization Metadata

A Delete link enables users to delete the customization document for the selected artifact from a specific layer.

Promote Customization Metadata

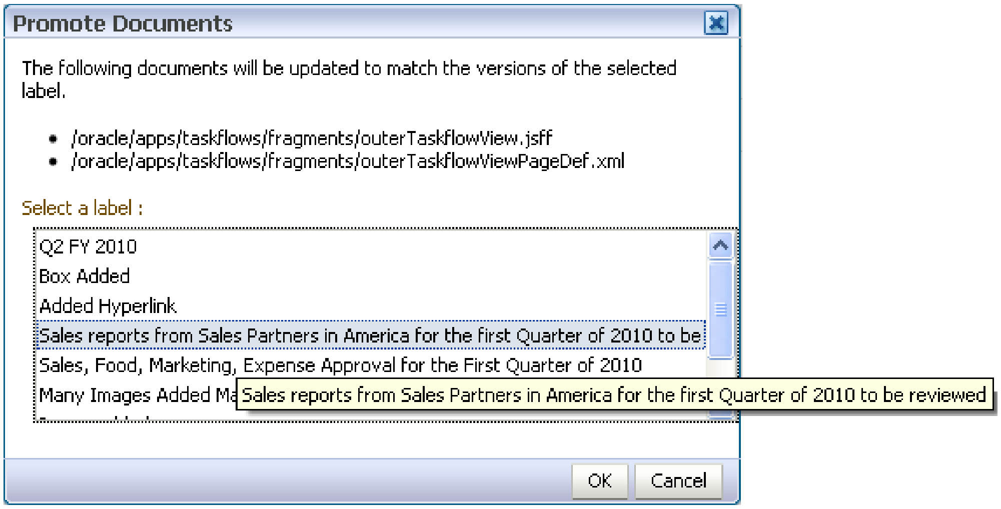
While customizing a page, users can save application customizations at any point and create a new label to save those customizations. A Promote link in the Customization Manager enables users to select a label and reset application customizations on the selected page or task flow to those from the label.

Notes: The Promote option is available only in sandbox-enabled applications.

For more information about the Save and Label option in Composer, see Section 16.5.14, "Create Labels On Saving Application Customizations."

The Promote link invokes the Promote Documents dialog, which lists all available labels and the files that will be promoted, as shown in Figure 16–47.

Figure 16–47 Select a Label Dialog



Promote Documents

The following documents will be updated to match the versions of the selected label.

- /oracle/apps/taskflows/fragments/outerTaskflowView.jsff
- /oracle/apps/taskflows/fragments/outerTaskflowViewPageDef.xml

Select a label :

Q2 FY 2010
Box Added
Added Hyperlink
Sales reports from Sales Partners in America for the first Quarter of 2010 to be
Sales, Food, Marketing, Expense Approval for the First Quarter of 2010
Many Images Added Ma

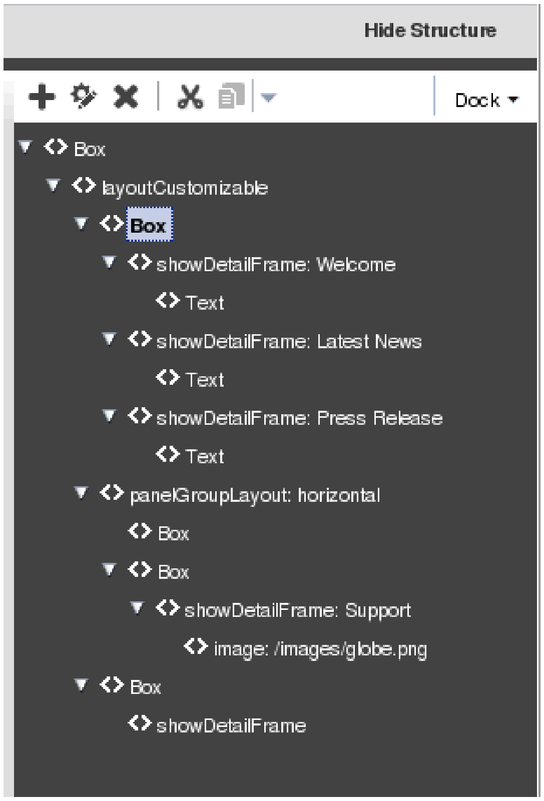
Sales reports from Sales Partners in America for the first Quarter of 2010 to be reviewed

Users can select a label and promote that label to the sandbox for the selected artifact. This means that application customizations for the selected artifact are reset to those from the specified label. If a task flow is selected, then all page fragments and page definitions are promoted. If a page or fragment is selected, then the page or fragment and its page definition are promoted. Users can select a label from any available layer and promote customizations from that label. For example, if an application has layers MCOOPER, JDOE, and SITE, and a user working in the MCOOPER layer clicks the Promote link for a page, the Promote dialog lists all labels available in all three layers.

16.6 Editing Capabilities in Structure View in Page Edit Mode

Structure view (Figure 16–48) provides a WYSIWYG and a hierarchical rendering of page components in a component navigator. Add Content, Switch, Delete, Cut, and Paste controls are available on Structure view toolbar provide specific operations in Composer. In Structure view, users can access and modify properties of components that are not otherwise selectable in Design or Add Content view. For example, many ADF Faces components can be edited only in Structure view. Users can also edit components within a task flow.

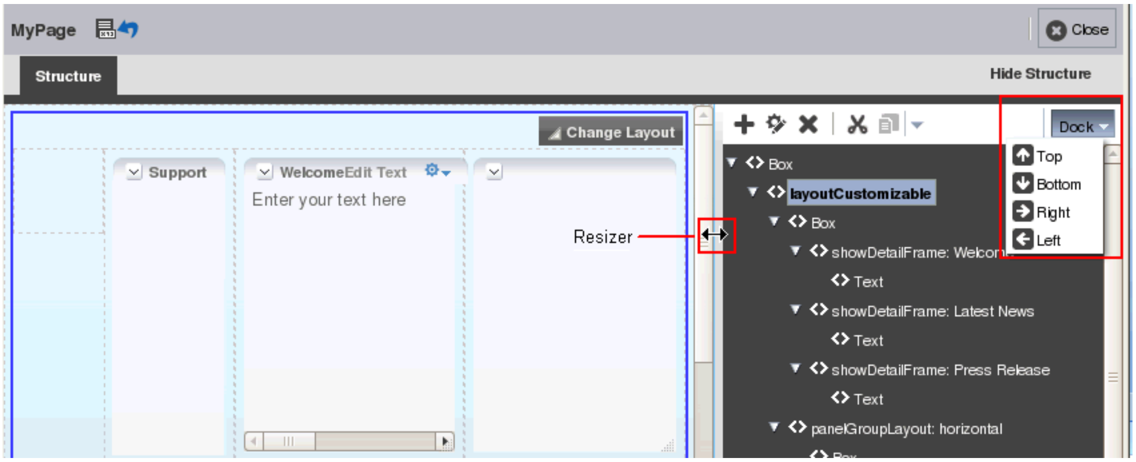
Figure 16–48 Structure View of a Page



```
Box
  layoutCustomizable
    Box
      showDetailFrame: Welcome
        Text
      showDetailFrame: Latest News
        Text
      showDetailFrame: Press Release
        Text
    panelGroupLayout: horizontal
      Box
      Box
        showDetailFrame: Support
          image: /images/globe.png
    Box
      showDetailFrame
```

By default, the component navigator displays on the right side of the page in Composer. Users can choose to display it at the top, bottom, or left, using the **Dock** menu (Figure 16–49). Users can also drag the border on the edge of the component navigator to alter its height or width.

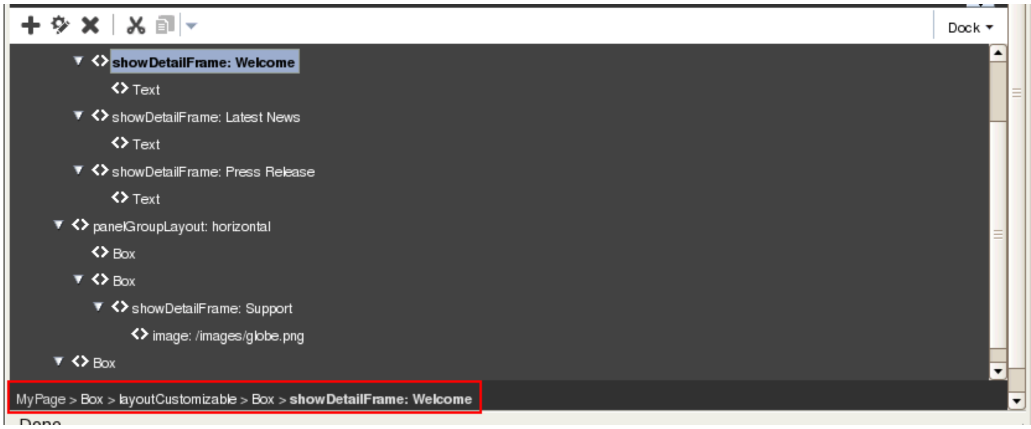
Figure 16–49 Structure Position Option and Resizer



At the root of the component navigator is the direct child of the `Page Customizable` component at design time. When a node is selected in the component navigator, the corresponding component is selected on the page. Similarly, when a component is selected directly on the page, the corresponding node is selected in the component navigator.

A gray area located at the bottom of the page displays a bread crumb trail for the selected component (Figure 16–50). The bread crumb trail shows how the component is nested on the page. When no component is selected, the bread crumb bar displays just the page name. The container names are links that when clicked highlight the selected component.

Figure 16–50 Bread Crumbs for a Component Selected in Page Structure View


Dock
showDetailFrame: Welcome
Text
showDetailFrame: Latest News
Text
showDetailFrame: Press Release
Text
panelGroupLayout: horizontal
Box
Box
showDetailFrame: Support
image: /images/globe.png
Box
MyPage > Box > layoutCustomizable > Box > showDetailFrame: Welcome

Task flows that can be edited have Edit Task Flow links next to them. On clicking an Edit Task Flow link, the component navigator displays the hierarchy of components within the task flow's page or fragment. Users can edit this page or fragment and click Close to zoom out of the task flow. For more information, see Section 16.6.2, "Edit Content Inside a Task Flow." Similarly, declarative components display Open links that enable users to edit components inside the selected declarative component's facets.

Similar to Design and Add Content view, in Structure view also users can perform such tasks as adding components, editing page and component properties, changing page layout, and deleting components. Users can select a component on the page or in the component navigator and click the buttons on the Structure view toolbar to perform these tasks. To edit or delete a component, users can also select options on the context menu for the component. In addition to these tasks, users can perform the following tasks in page Structure view:

- Section 16.6.1, "Rearrange Page Content Using Cut and Paste Options"
- Section 16.6.2, "Edit Content Inside a Task Flow"
- Section 16.6.3, "Edit Content Inside a Declarative Component"
- Section 16.6.4, "Show or Hide Components"

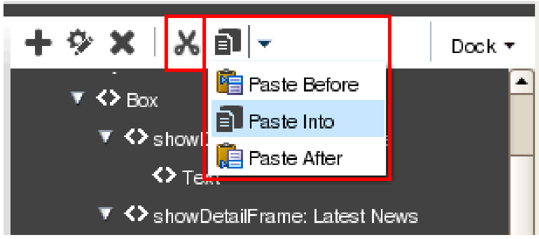
Notes:

- The **Save** button is provided on the Composer toolbar only if the application is configured to use a sandbox. For more information about sandboxes, see Section 21.2, "Using Composer Sandbox."
- You can restrict users from performing all or some of these tasks by securing the application and applying customization restrictions on components. For more information, see Section 16.8, "Security and Composer."

16.6.1 Rearrange Page Content Using Cut and Paste Options

Users can rearrange components on a page using the Cut and Paste options on the Structure view toolbar (Figure 16–51). A Paste menu enables users to paste a component into, before, or after any other component in the component navigator.

Figure 16–51 Cut and Paste Options on Structure View Toolbar



The Cut and Paste buttons are grayed out if the user selects a component that does not support a cut or paste operation. Cut and paste operations are not supported under the following conditions:

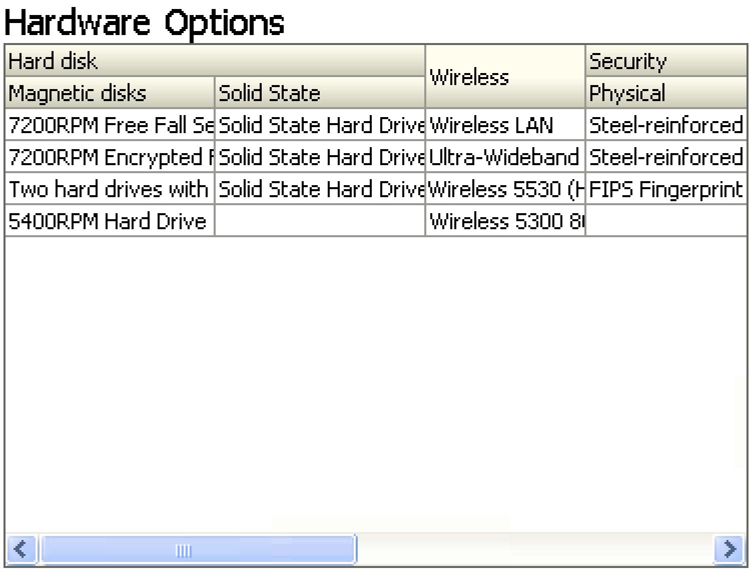
- The target component is not on the same page as the cut component.
- The target component is nested inside the cut component.
- The target component is located before or after a faceted component, that is, a component inside a facet.
- The parent of the target component is not customizable.
- The parent of the cut component is not customizable.

Notes: A component on which customization is restricted can be rearranged inside its parent container if the parent is customizable.

Example

If your customizable page contains an ADF Faces `Table` component, then in Composer's Structure view, users can resequence or move columns within or across tables and column groups. Consider a sample application created for selling computer accessories. The application home page has two tables containing details about the software and hardware offerings. The Hardware Options table contains three columns. The Hard disk column in turn contains the Magnetic disks and Solid State columns inside a column group, as shown in Figure 16–52.

Figure 16–52 Table in the Sample Application



Hardware Options

Hard disk		Wireless	Security
Magnetic disks	Solid State		Physical
7200RPM Free Fall Se	Solid State Hard Drive	Wireless LAN	Steel-reinforced
7200RPM Encrypted F	Solid State Hard Drive	Ultra-Wideband	Steel-reinforced
Two hard drives with	Solid State Hard Drive	Wireless 5530 (H	FIPS Fingerprint
5400RPM Hard Drive		Wireless 5300 8	

Users can switch to Structure view and resequence the Magnetic disks and Solid State columns within the Hard disk column or move them out of the column group and paste them next to any other column (the Wireless column, for example).

Users can select a column and click **Cut**, then select another column and click **Paste Before** or **Paste After**.

16.6.2 Edit Content Inside a Task Flow

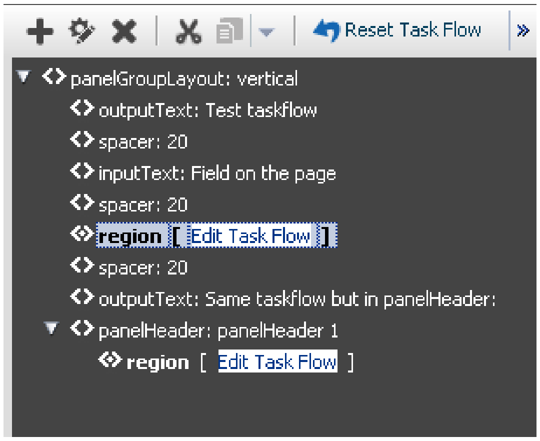
Oracle ADF Task flows consist of one or more views and each view in a task flow is associated with a page or page fragment. When you add a task flow to your page, the content on the fragment associated with the current view is displayed on the page. Composer enables users to edit components on the page or fragment used for the current view of a task flow. Since changes are made to the task flow's page or fragment, they are reflected in all places where the task flow's page or fragment is used.

Structure view provides an option to open a task flow and display only components on its page or fragment in the component navigator. Users can edit the page or fragment and close the task flow to navigate back to the page containing the task flow.

Users with Customize permission on a task flow can edit its page or fragment.

Each task flow in the component navigator displays an **Edit Task Flow** link next to it, as shown in Figure 16–53.

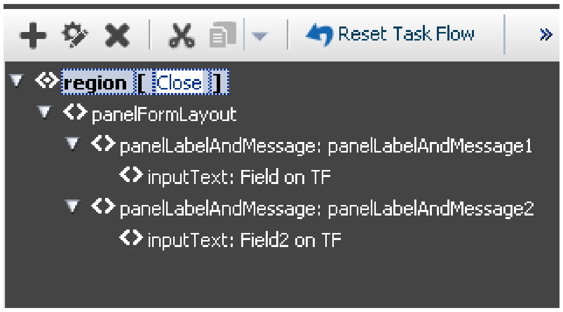
Figure 16–53 Edit Task Flow Link on a Task Flow



panelGroupLayout: vertical
outputText: Test taskflow
spacer: 20
inputText: Field on the page
spacer: 20
region [Edit Task Flow]
spacer: 20
outputText: Same taskflow but in panelHeader:
panelHeader: panelHeader 1
region [Edit Task Flow]

Clicking the **Edit Task Flow** link results in Structure view zooming in to display the task flow's page and its components, as shown in Figure 16–54.

Figure 16–54 Components Within a Task Flow



region [Close]
panelFormLayout
panelLabelAndMessage: panelLabelAndMessage1
inputText: Field on TF
panelLabelAndMessage: panelLabelAndMessage2
inputText: Field2 on TF

Users can select components on the task flow's page and edit them in Composer just like editing any other page components. However, Composer does not support moving components from one task flow to another.

If multiple users attempt to edit the same task flow at the same time, a concurrency warning appears in Composer that alerts each user to the others. However, this warning is displayed only if a sandbox is configured in the application. For information about how changes are saved in such cases, see "What Happens During Concurrent Edits".

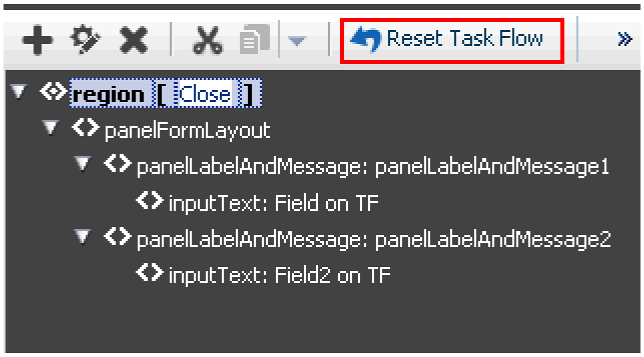
Clicking the **Close** link next to an open task flow results in the component navigator displaying the page containing the task flow.

16.6.2.1 Reset Task Flow

The **Reset Task Flow** button on the Structure view toolbar (Figure 16–55) invokes the Reset Task Flow dialog that provides options to remove application customizations made to a task flow and reset it to a previously-saved version or to its original out-of-the-box state. You can ensure that the task flow is reset to its state in a previously-saved label only if your application is configured to use a database store. The **Reset Task Flow** button is rendered only on zooming into a task flow.

Note: If you disable the **Reset Page** button in your application, the **Reset Task Flow** button is also disabled. Users cannot reset task flows after they make changes. For more information, see Section 16.5.11, "Reset Page."

Figure 16–55 Reset Task Flow Button



Roll Back to a Specific Label

If your application is configured to use a database store, a new version of the task flow is generated each time a user saves application customizations. If a sandbox is configured for your application, by creating a label with the `SAVED_LABEL_%` convention you can ensure that Composer resets the task flow as follows:

- If there is only one label name following the `SAVED_LABEL_%` convention, then Composer resets the task flow to its state in that label.
- If there is no label name following the `SAVED_LABEL_%` convention, then Composer resets the task flow to its original, out-of-the-box state.
- If there are multiple labels following the `SAVED_LABEL_%` convention, then Composer resets the task flow to its state in the latest label among these.

To roll back to a specific label, you must have configured your application to use a sandbox. Specifically, the namespace of the task flow being customized must be defined in the `<metadata-namespaces>` section in the application's `adf-config.xml` file. For more information, see Section 21.2.1, "How to Enable Composer Sandbox Creation."

Rolling back to a specific label is useful if your application has dependencies on the customization metadata and resetting the task flow to its original state may cause issues.

When a user resets a task flow, the following changes occur:

- Only the currently selected fragment is reset. Other fragments of the task flow are not reset.
- Nested task flows are not affected by the reset operation.
- When a task flow is reset, changes are reflected on all pages consuming this task flow.
- Components added to the task flow at runtime are removed. However, if the task flow's page or fragment uses a template, then components added inside `Panel Customizable` components on the template are not removed.

Example 16–2 shows the sample code to create a label with a `SAVE_LABEL_` prefix.

*Example 16–2 Code to Create a Label Prefixed with SAVE_LABEL_*

```
import oracle.mds.versioning.VersionHelper;
import oracle.mds.naming.Namespace;

. . .
long labelNumber = (long)(Math.random() * 1000000000);
String savedlabel = "SAVE_LABEL_" + labelNumber;

MDSInstance mdsInstance =
(MDSInstance)ADFContext.getCurrent().getMDSInstanceAsObject();

VersionHelper vh = VersionHelper.get(mdsInstance);

Namespace[] validNamespaces = new Namespace[1];
Namespace pageNamespace = Namespace.create(<pagePath or taskflow path>,
NamespaceRestriction.CUSTOMIZATIONS);

validNamespaces[0] = pageNamespace;
vh.createLabel(savedlabel, null, validNamespaces);
```

16.6.3 Edit Content Inside a Declarative Component

If the application page contains declarative components, users can edit these components in Composer. Editing declarative components is similar to editing task flows. For more information, see Section 16.6.2, "Edit Content Inside a Task Flow."

Figure 16–56 and Figure 16–57 show the Edit Component and Close options available on declarative components.

Figure 16–56 Edit Option On a Declarative Component

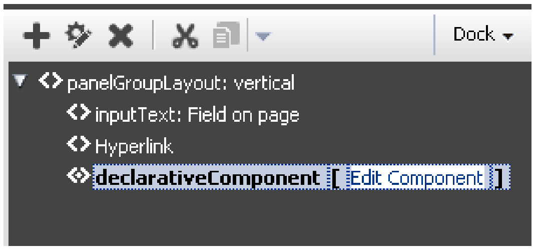
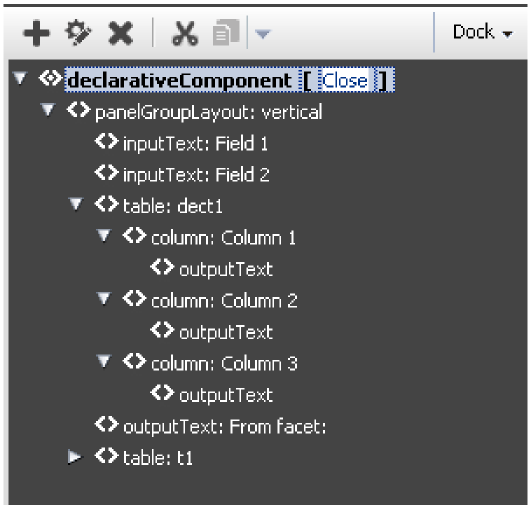

Dock
panelGroupLayout: vertical
inputText: Field on page
Hyperlink
declarativeComponent [Edit Component]

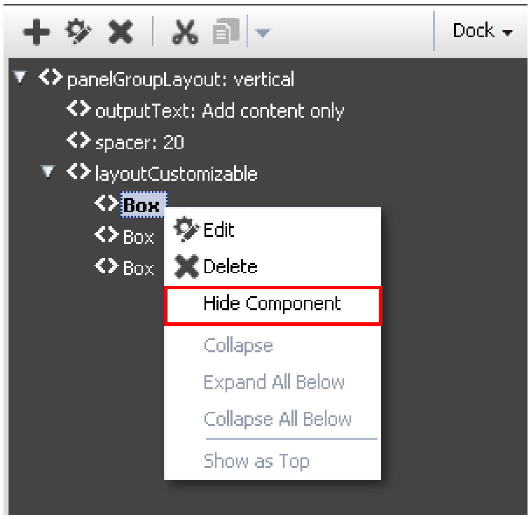
Figure 16–57 Close Option Displayed While Editing a Declarative Component



16.6.4 Show or Hide Components

To hide a component, right-click the component in the component navigator or on the page and choose Hide Component on the context menu (Figure 16–58).

Figure 16–58 Hide Component Option in Structure View of the Page



A hidden component is not displayed on the page, but appears grayed out in the component navigator. The context menu for a hidden component displays a Show Component option. Choosing this option renders the component on the page again.

Note: Show or hide behavior is tied to the component's `rendered` property. When a user hides a component, its `rendered` property is set to `false` and vice versa. If the `rendered` attribute on a component has an EL value, then that value is lost on using the show or hide option. The value is set to `true` or `false`.

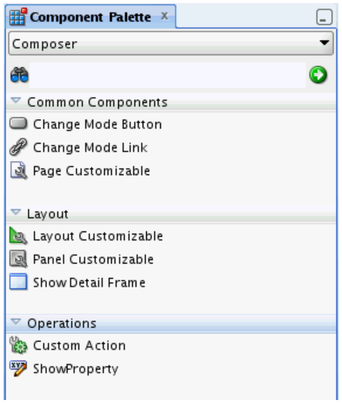
16.7 Composer Components

To make any JSPX document (`*.jspx`) editable at runtime, you must add Composer components to your page in Oracle JDeveloper at application design time.

> **Note:** Composer works only with JSPX pages and ADF Faces. You cannot add these components to JSP pages. For information about adding Composer components to your page, see Section 18.1, "Designing Editable Pages Using Composer Components."

The Composer tag library in JDeveloper (Figure 16–59) is available from the Component Palette and provides components that you can add to make a page editable.

Figure 16–59 Composer Tag Library in the Component Palette



Component Palette

Composer

Common Components

Change Mode Button

Change Mode Link

Page Customizable

Layout

Layout Customizable

Panel Customizable

Show Detail Frame

Operations

Custom Action

ShowProperty

This section provides an overview of the Composer components that are used to enable page editing. It contains the following subsections:

- Section 16.7.1, "Page Customizable"
- Section 16.7.2, "Change Mode Link and Change Mode Button"
- Section 16.7.3, "Panel Customizable"
- Section 16.7.4, "Show Detail Frame"
- Section 16.7.5, "Layout Customizable"

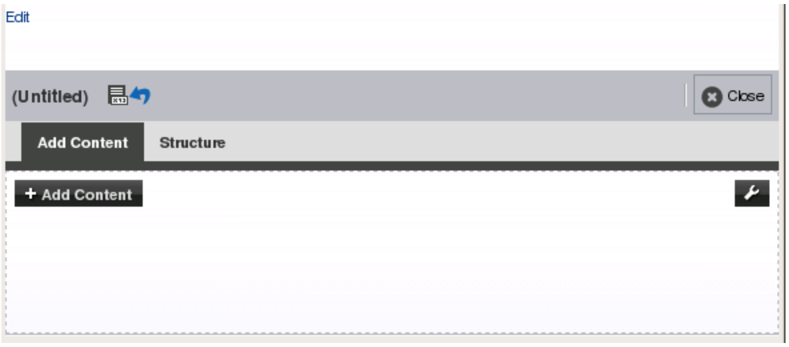
For more information about these components and other Composer components such as `Custom Action`, see Appendix B, "Composer Component Properties and Files."

16.7.1 Page Customizable

The `Page Customizable` component defines the editable area of a page. Within this area, you can edit component properties, add content to the page, arrange content, and so on.

Adding a `Page Customizable` component enables the runtime inclusion of Composer on the page. Users can edit pages in Composer using page-related controls available across the top of the page, **Add Content** buttons on components, and **Edit** icons on each editable page component (Figure 16–60).

Figure 16–60 Page Customizable Component

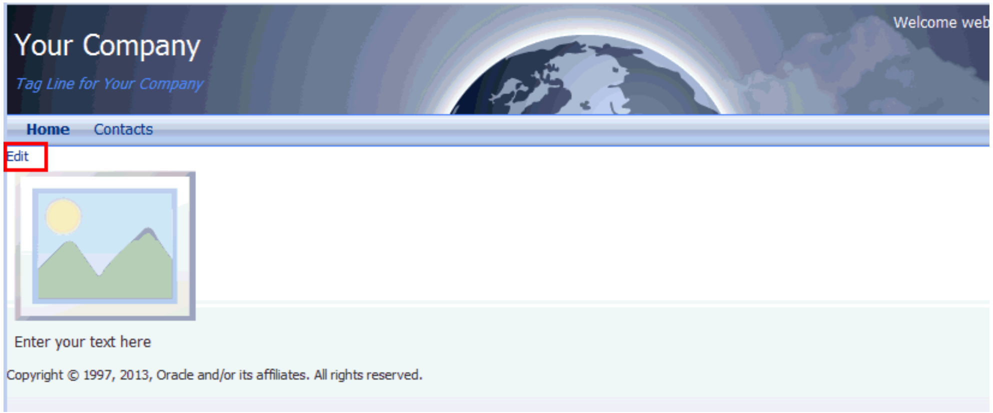


To enable runtime editing for multiple application pages in one operation, add a Page Customizable component to the ADF page template used for those pages. This avoids the need to manually add a Page Customizable to each page. For more information about adding the Page Customizable component, see Section 18.1.2, "How to Enable Runtime Customization Using a Page Customizable Component."

16.7.2 Change Mode Link and Change Mode Button

The Change Mode Link or Change Mode Button component provides an easy way to switch from View mode of the page to Edit mode. Figure 16–61 shows a Change Mode Link component on the page.

Figure 16–61 Change Mode Link Component


Your Company
Tag Line for Your Company
Welcome web
Home
Contacts
Edit
Enter your text here
Copyright © 1997, 2013, Oracle and/or its affiliates. All rights reserved.

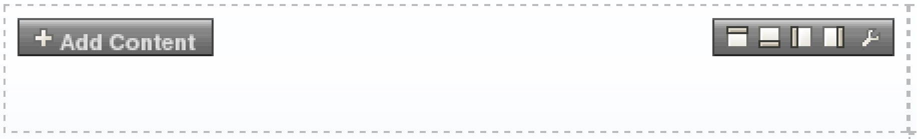
For more information about using Change Mode Link or Change Mode Button, see Section 18.1.3, "How to Enable Switching Between Page Modes Using a Change Mode Link or Change Mode Button."

16.7.3 Panel Customizable

A Panel Customizable defines an area of the page onto which users can add components at runtime. Users can move or minimize Show Detail Frame components and portlets that are added as child components of a Panel Customizable. Users can also drag and drop these components into another Panel Customizable component on the page.

In Edit mode, the Panel Customizable component is rendered as a box with dotted lines. In fact, a Panel Customizable is referred to as a Box in the runtime resource catalog. An **Add Content** button appears on each Panel Customizable component on the page, as shown in Figure 16–62. You can use this button to open the resource catalog Viewer and add components within the Panel Customizable.

Figure 16–62 Panel Customizable Component

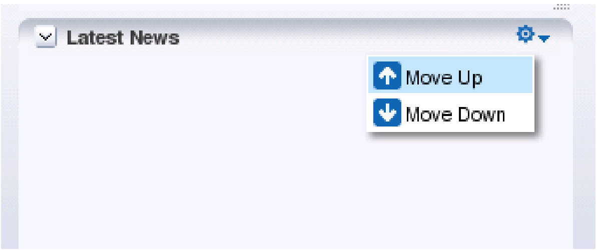


For more information, see Section 18.1.4, "How to Define Editable Areas of a Page Using Panel Customizable Components."

16.7.4 Show Detail Frame

A Show Detail Frame component renders a border or chrome around its child component along with a header that contains icons to enable users to perform some operations. The actions available on this menu enable users to move the component, along with its content, to new positions on the page (Figure 16–63). Users can also drag and drop Show Detail Frame components from one Panel Customizable component to another on the page. Note that a Show Detail Frame must be included inside a Panel Customizable component for it to be movable.

Figure 16–63 Show Detail Frame Component



A Show Detail Frame component enables the following actions:

- Collapse and expand the component
- Move content to different positions on the page
- If you add a task flow as a child component, then along with custom actions it enables task flow navigation using the Actions menu.
- If you add an ADF Faces Rich Text Editor as a child component, then it enables end users to edit and save text in the Rich Text Editor.

You can add your own UI controls to further customize the display of content by using facets of the Show Detail Frame. For information about using these facets, see Section 20.1, "Enabling Custom Actions on a Show Detail Frame Component by Using Facets."

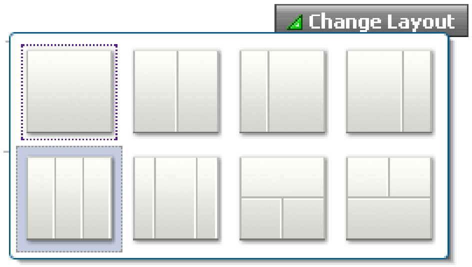
For information about adding this component to a page, see Section 18.1.6, "How to Enable Component Customization Using Show Detail Frame Components."

16.7.5 Layout Customizable

The `Layout Customizable` component is a container that enables end users to lay out its child components in several predefined ways (for example, two column, three column, and so on). You can design your page in such a way that all components on the page are enclosed in a `Layout Customizable` component. In such a case, the layout is applied to the entire page.

Access predefined layouts using the layout changer. By default, the layout changer displays both in page View mode and page Edit mode. By using the `Layout Customizable` component attributes you can choose to display the layout changer as an icon, text, or icon and text. In addition, you can decide whether to show or hide the layout changer in View mode. Figure 16–64 shows a `Layout Customizable` component and the predefined layouts that display when users click the layout changer.

Figure 16–64 Layout Customizable Component



For more information, see Section 18.1.5, "How to Enable Layout Customization for a Page Using a Layout Customizable Component."

16.8 Security and Composer

In an application that is accessed by end users, application developers, and administrators, it may not be advisable to allow all users to perform all editing tasks. For example, you may want to allow end users to only customize their view of the page by performing tasks like rearranging components or hiding areas they do not want to see. On the other hand, application developers must be allowed to update content on the page, component properties, and so on. The ability to customize a page, component, or component attribute is inherited from security definitions at the tag, page, component, and attribute levels. However, you can override the default security definitions at various levels in keeping with your business requirement.

You can define application security on many levels, including on a page, an operation, a component, or a component attribute. There are several ways in which one can restrict application customizations on a component. Composer determines if a component can be customized by honoring these rules. For example, before users can customize components, the components' sources of security restrictions are queried to determine if application customization is allowed. If a component does not permit application customization, Composer considers it restricted; that is, Composer treats the component as if it were explicitly secured. Table 16–1 describes Composer behavior to reflect application customization restrictions.

Table 16–1 Customization Restrictions on Composer Components

Restriction	Behavior
The page (and its contents) is open for all customizations	Composer allows editing of components without restrictions.

Table 16–1 (Cont.) Customization Restrictions on Composer Components

Restriction	Behavior
The page is restricted	Composer displays but none of the options, for example **Page Properties** and **Edit** icons, are accessible.
Some operations are restricted	Composer displays but the options corresponding to the restricted operations are disabled.
A component is restricted	The **Edit** icon is not rendered on the component and its properties cannot be edited.
A component's attributes are restricted	The restricted attributes are not displayed in Composer. Composer's API enables the developer to determine if a component's attributes are restricted or not.

Depending on the privileges granted while implementing security, users can perform different user and application customization tasks when they log in to the application.

> **Note:** In a secured application, it is recommended that you check all users' privileges and enable the Edit link or button on the page only for privileged users. Unauthenticated users who stumble into page Edit mode can change component properties.
>
> You can enable the Edit link or button for selected users by specifying an EL value for the `rendered` attribute on the `Change Mode Link` or `Change Mode Button` component. For more information, see Section B.1.2, "Change Mode Link and Change Mode Button."

This section describes the default security behavior of Composer components. It contains the following subsections:

- Section 16.8.1, "Page and Task Flow Security"
- Section 16.8.2, "MDS Customization Restrictions"
- Section 16.8.3, "Component Action-Level Security"

For information about overriding default security behavior, see Chapter 22, "Modifying Default Security Behavior of Composer Components."

16.8.1 Page and Task Flow Security

The application's `jazn-data.xml` file is the repository for page-level and task flow-level security information. Composer references this file and enables editing capabilities based on a user's privileges:

- A user with the Personalize privilege on a page or task flow can perform only the user customizations described in Section 16.4, "Customizing Capabilities in Page View Mode."
- A user with the Edit or Customize privilege can perform all runtime editing tasks such as adding content, editing component properties, and deleting components. Composer and Oracle WebCenter Portal Customizable Components do not differentiate between Edit and Customize privileges.

Notes: Composer and Oracle WebCenter Portal Customizable Components support cascading of privileges with Grant being a super set of all privileges. A user with Grant privilege on a page or task flow is considered to have Edit, Personalize, and View privileges. A user with Personalize privilege is considered to additionally have the View privilege.

Table 16–2 explains Composer behavior based on page- and task flow-level privileges. Only those privileges that are relevant to Composer and Oracle WebCenter Portal Customizable Components are listed in this table. The Grant privilege is not listed as it is a super set of all privileges. Users with the Grant privilege can perform all editing tasks.

Table 16–2 Mapping of Page or Task Flow Privileges to Composer Behavior

Privilege	Composer Behavior
Edit or Customize	Users can switch to Edit mode of the page, where Composer is invoked, and edit the page. Users with either the Edit or Customize privilege can perform all runtime editing tasks. With the Edit or Customize privilege on a page or task flow, users can: ■ Add content ■ Edit component properties ■ Rearrange content ■ Delete components in Composer ■ Personalize or customize a portlet ■ Move a portlet or task flow in View mode. This is persisted as a user customization. ■ Expand and collapse a task flow or portlet in View mode. This is persisted as a user customization. ■ Resize a column of a table in a task flow. This is persisted as a user customization. ■ Reset the page to its original state ■ Delete components in View mode Note: You can perform all or some of these tasks depending on whether you have page-level or task flow-level privileges. If users do not have the Edit or Customize privilege on a page but try to edit it, a message appears stating that they do not have permission to do so. If users do not have the Edit or Customize privilege on a task flow, the Edit option is not displayed for the task flow in Structure view.

Table 16–2 (Cont.) Mapping of Page or Task Flow Privileges to Composer Behavior

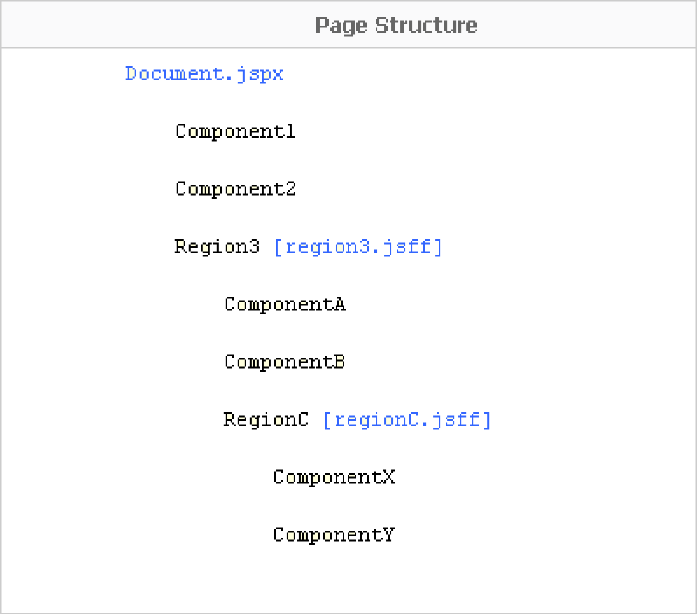
Privilege	Composer Behavior
Personalize	In View mode, users with a Personalize privilege on the page can: ■ Rearrange content ■ Personalize a portlet ■ Move a portlet or task flow in View mode. This is persisted as a user customization. ■ Expand and collapse a task flow or portlet in View mode. This is persisted as a user customization. ■ Resize a column of a table in a task flow. This is persisted as a user customization. ■ Delete components in View mode **Note**: Having Personalize permission does not enable users to perform portlet customizations. If users without Personalize, Edit, or Customize permission try to edit a page, a message appears stating that they do not have permission to do so.
View	Users with the View privilege can only view the page or task flow, but not perform user or application customizations.

16.8.1.1 Task Flow Security

When you add a task flow to a customizable page, Composer provides options for editing the task flow and components on the task flow's page. In a secured application, Composer provides editing capabilities based on the privileges provisioned on the customizable page and the task flow. For more information about task flow privileges and Composer's behavior, see Table 16–2.

On an application page, components can be located directly on the JSPX page or on page fragments inside shared components such as task flows. Restrictions on components inside a task flow are derived from the page fragment. To understand task flow security better, consider an example of a page containing a task flow, which in turn contains another task flow, as shown in Figure 16–65.

Figure 16–65 Structure of a Page Containing Nested Task Flows



```
Page Structure

Document.jspx
    Component1
    Component2
    Region3 [region3.jsff]
        ComponentA
        ComponentB
        RegionC [regionC.jsff]
            ComponentX
            ComponentY
```

Components on this page inherit security as follows:

- `Component1`, `Component2`, and `Region3` inherit security definitions from `Document.jspx`.
- `ComponentA`, `ComponentB`, and `RegionC` inherit security definitions from `region3.jsff`.
- `ComponentX` and `ComponentY` inherit security definitions from `regionC.jsff`.

Task flows do not support cascading of permissions. That is, page permissions are not inherited by components inside a task flow. However, users who do not have Edit or Customize permission on the page cannot customize task flows on the page.

For example, if you grant Edit or Customize permission on `Document.jspx` and `regionC.jsff` but not on `region3.jsff`, then users can customize `Component1`, `Component2`, `RegionC`, `ComponentX`, and `ComponentY`, but not `ComponentA`, `ComponentB`, and `RegionC`.

In a secured application, task flow permissions are stored in the application's `jazn-data.xml` file. The list of available actions for a task flow is defined by the task flow permission class, `oracle.adf.controller.security.TaskFlowPermission`. The permission class defines task flow-specific actions that it maps to the task flow's operations. By default, only View permission is provisioned on task flows. To enable users to edit a task flow at runtime, you must ensure that Customize permission is granted on the task flow. For more information, see Section 18.3.1.1, "Considerations for Adding Task Flows" and Section 22.6, "Implementing Task Flow Security."

For more information about task flows and their security behavior, see *Fusion Developer's Guide for Oracle Application Development Framework*.

16.8.2 MDS Customization Restrictions

Portal Framework applications have a default MDS configuration that restricts application customization on all application objects. To enable runtime page editing, you must make this default restriction inactive by adding a `Page Customizable` component to the page. A `Page Customizable` component enables application customization on all components under it. However, it does not enable customization on components of a nested page or fragment. For example, if the `Page Customizable` is used in a page template and has a `Facet Ref` inside it, then customization is not enabled by default on the components inside the `Facet Ref`.

You can enable application customization on a set of attributes for the component using MDS type-level restrictions or instance-level restrictions. Type-level restrictions are applicable to a specified component type across instances. At runtime, attributes for which you have enabled customization are shown as editable properties in Composer, and restricted attributes are not displayed in the Component Properties dialog for the selected component. For information, see Section 22.1, "Applying Component-Level Restrictions by Defining Customization Policies."

16.8.3 Component Action-Level Security

The `Panel Customizable` and `Show Detail Frame` components enable the placement of restrictions on individual supported actions. For example, one can specify a restriction on whether the current user is allowed to minimize the `Show Detail Frame`.

It is left to you to enforce restrictions on the actions on a component. You can specify restriction on component actions in `adf-config.xml`. If a restriction is specified and applicable to the current user, the `Panel Customizable` or `Show Detail Frame` does not render the action.

For information about applying action-level restrictions, see Section 22.5, "Applying Action-Level Restrictions on Panel Customizable and Show Detail Component Actions."

17

Enabling Runtime Creation and Management of Pages

This chapter describes how to create and manage pages at runtime and also provides advanced information on managing pages.

This chapter contains the following topics:

17.1 Introduction to Page Creation and Management

You can create new pages and task flows in your application at runtime. You can base your pages on default or custom styles and templates. You can create them with either the Page - Create New task flow or the page APIs.

After you create pages or task flows, users can view and manage them with either the page data control or the page APIs. The APIs provide a means of defining a work area within the application, called a scope. Scopes are useful for categorizing custom pages that are of interest to a specific team or community (similar to a portal in WebCenter Portal).

Table 17–1 describes the page developer tools.

Table 17–1 Page Developer Tools

Tool	Description
Page - Create New	A task flow for creating pages or task flows at runtime.

Table 17–1 (Cont.) Page Developer Tools

Tool	Description
Page Data Control	A data control for viewing or deleting information about listed pages and task flows at runtime. Page Data Control is available at design time after you add the page libraries to your application. By default, the page libraries are added to the application when you use the WebCenter Portal Application template or when you add the Page - Create New task flow.
Page APIs	APIs for creating and managing pages and task flows at runtime.

Pages are integrated with many WebCenter Portal tools and services, such as links, search, and tags. You can track the most recent changes in pages with Recent Activities. Because it is preconfigured to work with Recent Activities, pages automatically produce the information that Recent Activities uses to display the most recent additions, changes, or deletions in pages.

17.2 Creating Pages and Task Flows

You can create pages and task flows at runtime with either the Page - Create New task flow or the page APIs.

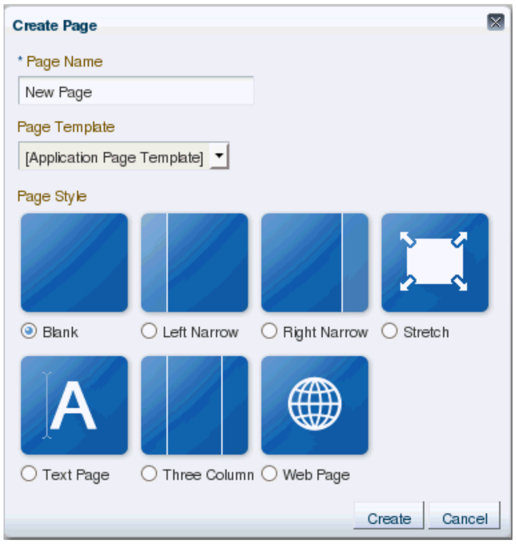
> **Note:** The Page - Create New task flow provides a means of creating pages and task flows and editing task flow parameters. To execute operations, such as copy, rename, create scope, and so on, you must use the page APIs along with the Page - Create New task flow. The page APIs provide the flexibility of customization within the pages.

The Page - Create New task flow enables you to invoke the Create Page dialog at runtime. The Create Page dialog in turn enables users to create pages based on predefined styles and templates.

Page styles and templates provide both a default page structure that describes the areas where you can place content (that is, the page layout) and a background color and image that contribute to a page's look and feel. You can select the page style and template when you create a page. You can additionally enhance the usefulness and presentability of a page using page layout components. These include an in-place HTML text editor, images, layout boxes, hyperlinks, and so on.

Figure 17–1 shows the Create Page dialog at runtime.

Figure 17–1 Create Page Dialog with Default Styles



Create Page

* Page Name

New Page

Page Template

[Application Page Template]

Page Style

● Blank ○ Left Narrow ○ Right Narrow ○ Stretch

○ Text Page ○ Three Column ○ Web Page

Some page styles include properties that suggest a particular use for the page. For example, the Web Page style includes a configurable property for specifying a URL. Among its many uses, the Web Page style provides a means of embedding wiki or blog pages and exposing external Web content within your application.

In many cases, you can switch the page layout when you revise a page. You can also start with a blank page and create layout, look, and feel from the start.

At runtime, you can view a list of pages created through the Page - Create New task flow and create, copy, update or delete those pages.

For more information, see the "Editing a Page" section in *Building Portals with Oracle WebCenter Portal*.

17.2.1 How to Create Pages

This section describes how to add the Page - Create New task flow to your application to enable the creation of pages at runtime. It contains the following subsections:

- Section 17.2.1.1, "How to Add the Page - Create New Task Flow"
- Section 17.2.1.2, "Setting Security for Pages in JDeveloper"
- Section 17.2.1.3, "How to Create Pages at Runtime"
- Section 17.2.1.4, "Structure of Pages Created at Runtime"
- Section 17.2.1.5, "How to Access Pages Created at Runtime"

17.2.1.1 How to Add the Page - Create New Task Flow

To add the Page - Create New task flow to your Portal Framework application:

1. Create a page. Follow the steps described in Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."
2. Open the customizable page to which you want to add the task flow.
3. In the Resource Palette, expand **My Catalogs**, **WebCenter Portal - Services Catalog**, and **Task Flows**.
4. Drag and drop the **Page - Create New** task flow onto your page.

5. When prompted, select **Region** as the way to create the task flow.
6. Click **OK**.
7. Save your page.
8. Run your application to see that the Create Page button appears on the page.
9. Click **Create Page**.

   The Create Page dialog opens (see Figure 17–1).
10. Enter a page name, then select the page template and the page style.
11. Click **Create**.

    A page is created based on the selected information. For more details on where the page is created, see Section 17.2.1.4, "Structure of Pages Created at Runtime."

> **Note:** After you add the task flow, you can edit task flow parameters. For information about Page - Create New task flow parameters, see Section 17.3, "Defining Values for the Page - Create New Task Flow Parameters."
>
> For detailed information about pages, such as how to delete pages created at runtime, see Section 17.5, "Managing Pages."

17.2.1.2 Setting Security for Pages in JDeveloper

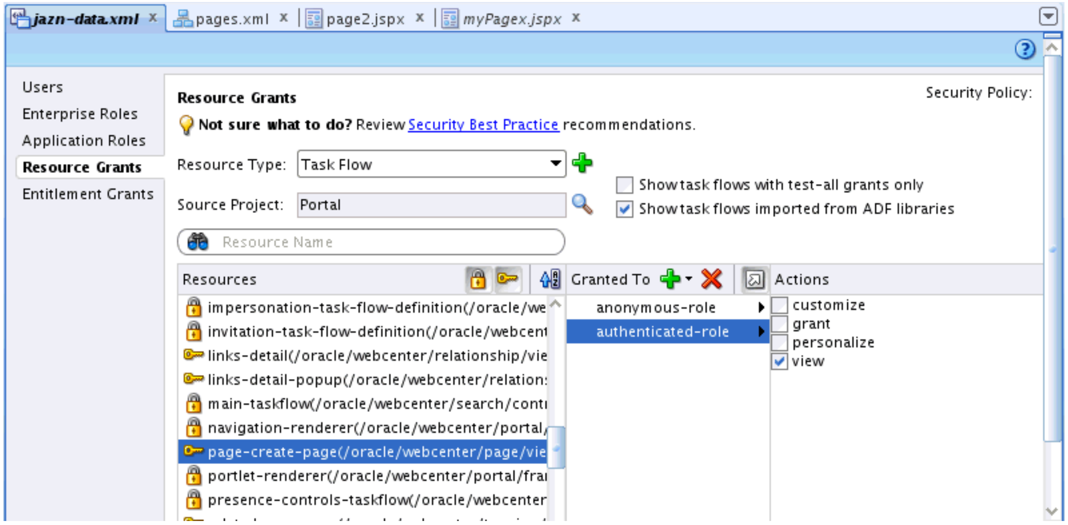
Pages do not require their own, specific configuration of ADF security. They follow the security set up for the Portal Framework application. In a non-secured application, all pages created in the Create Page dialog appear in the data control, viewable by everyone. In a secured application, users see only the pages they create or the pages to which they are granted privileges.

To secure your application and the Page - Create New task flow:

1. Follow the steps in Section 4.2.1.1, "Implementing Security for Tools and Services."
2. After you add the **Page - Create New** task flow to a page, locate the `jazn-data.xml` file in Application Resources, and double-click its name.
3. Click **Resource Grants**, then select **Task Flow** from the **Resource Type** drop-down list.
4. Select the **Show task flows imported from ADF libraries** check box.
5. In the **Resources** column, select the **page-create-page** task flow.
6. In the **Granted To** column, click the **Add** icon to add a role to which to grant task flow access privileges.
7. Select the required role, and click **OK**.

   The newly added role is displayed in the Granted To list.
8. In the **Actions** column, select the privileges to grant to the selected role (Figure 17–2).

Figure 17–2 Adding Privileges for the Page - Create New Task Flow



Not sure what to do? Review Security Best Practice recommendations.

Resource Type: Task Flow

Source Project: Portal

□ Show task flows with test-all grants only

☑ Show task flows imported from ADF libraries

Resource Name

impersonation-task-flow-definition(/oracle/we
invitation-task-flow-definition(/oracle/webcent
links-detail(/oracle/webcenter/relationship/vie
links-detail-popup(/oracle/webcenter/relation:
main-taskflow(/oracle/webcenter/search/conti
navigation-renderer(/oracle/webcenter/portal/
page-create-page(/oracle/webcenter/page/vie
portlet-renderer(/oracle/webcenter/portal/frai
presence-controls-taskflow(/oracle/webcenter

anonymous-role
authenticated-role

□ customize
□ grant
□ personalize
☑ view

9. From Resource Type, select **Web Page** to apply security to the page on which you added the Page - Create New task flow.

   Follow the same procedure outlined in steps 5 through 8: select a page, add roles, and apply privileges.

Note: The **Page Data Control** data control does not require any security setting for a secure or non-secure application.

17.2.1.3 How to Create Pages at Runtime

For detailed information, see the "Creating and Editing a Portal Page" chapter in *Building Portals with Oracle WebCenter Portal*.

17.2.1.4 Structure of Pages Created at Runtime

The pages you create at runtime using the Page - Create New task flow or the page APIs are stored in the `mds` folder, located under your application root. Table 17–2 provides examples of the default formats used for page and task flow file names.

Table 17–2 Default File Name Formats

File Type	Format
Page	`Page<N>.jspx` (value of N starts from 1) For example: `Page1.jspx`, `Page2.jspx`, `Page<N>.jspx`
Page Definition	`Page1PageDef.xml`, `Page2PageDef.xml`, `Page<N>PageDef.xml`
Task Flow View pages	`Page1.jsff`, `Page2.jsff`, `PageN.jsff`
Task Flow View Page Definitions	`Page1PageDef.xml`, `Page2PageDef.xml`, `Page<N>PageDef.xml`
Task Flow Definitions	`Page1.xml`, `Page2.xml`, `Page<N>.xml`

When you use the page APIs to create pages, you can provide a custom value for the file name format. For example: `myPage<`*N*`>.jspx` (value of N starts from 1)

The following examples show the structure of a page (`Page1.jspx`) and its associated page definition (`Page1PageDef.xml`) created at runtime by the user `user1`.

Example 17–1 Page Created Under a Default Scope

```
mds\oracle\webcenter\page\scopedMD\s8bba98ff_4cbb_40b8_beee_
296c916a23ed\user\user1\Page1.jspx
```

Example 17–2 Page Definition Created Under a Default Scope

```
mds\pageDefs\oracle\webcenter\page\scopedMD\s8bba98ff_4cbb_40b8_beee_
296c916a23ed\user\user1\Page1PageDef.xml
```

Example 17–3 Page Created Under a Custom Scope

```
mds\oracle\webcenter\page\scopedMD\<scopeGUID>\Page1.jspx
```

Example 17–4 Page Definition Created Under a Custom Scope

```
mds\pageDefs\oracle\webcenter\page\scopedMD\<scopeGUID>\Page1PageDef.xml
```

In Example 17–4, the `scopeGUID` is a unique ID assigned to a specific scope by pages.

Example 17–5 Task Flow View Page Created Under a Default Scope

```
mds\oracle\webcenter\page\scopedMD\s8bba98ff_4cbb_40b8_beee_
296c916a23ed\user\user1\Page1.jspx
```

Example 17–6 Task Flow Definition Created Under a Default Scope

```
mds\oracle\webcenter\page\scopedMD\s8bba98ff_4cbb_40b8_beee_
296c916a23ed\user\user1\Page1.xml
```

Example 17–7 Task Flow View Page Definition Created Under a Default Scope

```
mds\pageDefs\oracle\webcenter\page\scopedMD\s8bba98ff_4cbb_40b8_beee_
296c916a23ed\user\user1\Page1PageDef.xml
```

Example 17–8 Task Flow View Page Created Under a Custom Scope

```
mds\oracle\webcenter\page\scopedMD\<scopeGUID>\Page1.jspx
```

Example 17–9 Task Flow Definition Created Under a Custom Scope

```
mds\oracle\webcenter\page\scopedMD\<scopeGUID>\Page1.xml
```

Example 17–10 Task Flow Page Definition Created Under a Custom Scope

```
mds\pageDefs\oracle\webcenter\page\scopedMD\<scopeGUID>\Page1PageDef.xml
```

In Example 17–10, the `scopeGUID` is a unique ID assigned to a specific scope by the pages.

17.2.1.5 How to Access Pages Created at Runtime

To access pages with a default scope, enter the following URL:

```
http://<server>:<port>/<app name>/faces/oracle/webcenter/page/scopedMD/s8bba98ff_
4cbb_40b8_beee_296c916a23ed/user/<user guid>/Page1.jspx
```

To access pages with a custom scope, enter the following URL:

```
http://<server>:<port>/<app name>/faces/oracle/webcenter/page/scopedMD/<scope
guid>/Page1.jspx
```

17.3 Defining Values for the Page - Create New Task Flow Parameters

This section describes how to access and define values for the Page - Create New task flow parameters. It contains the following subsections:

- Section 17.3.1, "How to Access Page - Create New Task Flow Parameters"
- Section 17.3.2, "Setting Scope in a Page - Create New Task Flow"
- Section 17.3.3, "Setting an Outcome Parameter"
- Section 17.3.4, "Specifying Styles"
- Section 17.3.5, "Specifying an ADF Template"
- Section 17.3.6, "Showing a Command Link"
- Section 17.3.7, "Displaying an Image"
- Section 17.3.8, "Customizing the Label"

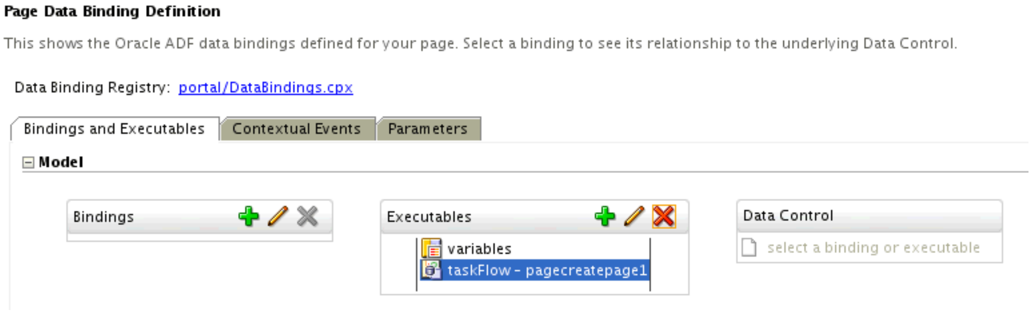
17.3.1 How to Access Page - Create New Task Flow Parameters

To access Page - Create New task flow parameters:

1. Go to the Application Navigator and right-click the `.jspx` page with the Page - Create New task flow, then select **Go to Page Definition**.
2. In the Executables section, scroll to select the **pagecreatepage** task flow.
3. Click the **Edit** (pencil) icon to edit any of the parameters.

   The Page Data Binding Definition in the design view is shown in Figure 17–3.

Figure 17–3 Page Data Binding Definition



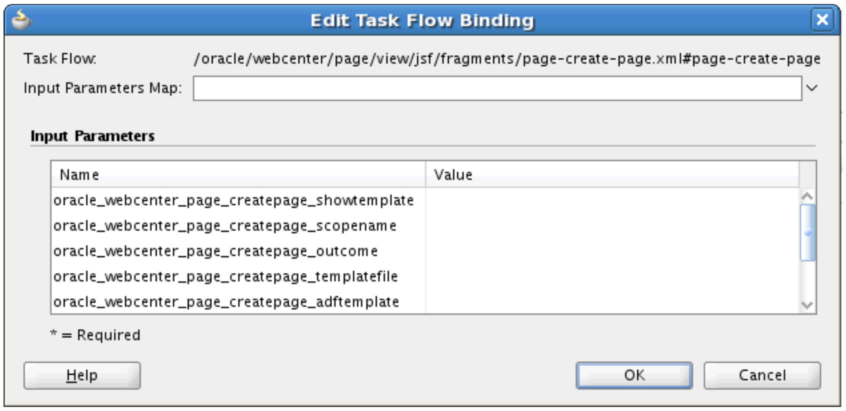
Page Data Binding Definition

This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relationship to the underlying Data Control.

Data Binding Registry: portal/DataBindings.cpx

The **Edit Task Flow Binding** dialog opens, as shown in Figure 17–4.

Figure 17–4 Edit Task Flow Binding for the Page - Create New Task Flow



Task Flow: /oracle/webcenter/page/view/jsf/fragments/page-create-page.xml#page-create-page

Input Parameters Map:

Input Parameters

Name	Value
oracle_webcenter_page_createpage_showtemplate	
oracle_webcenter_page_createpage_scopename	
oracle_webcenter_page_createpage_outcome	
oracle_webcenter_page_createpage_templatefile	
oracle_webcenter_page_createpage_adftemplate	

* = Required

The following optional Page - Create New parameters are available:

- `showtemplate`

  By default, the Page Template drop-down list appears in the Create Page task flow at application runtime. You can choose to hide the page templates option by setting `showtemplate` to `false`.

- `scopename`

  For information, see Section 17.3.2, "Setting Scope in a Page - Create New Task Flow."

- `outcome`

  For information, see Section 17.3.3, "Setting an Outcome Parameter."

- `templatefile`

  For information, see Section 17.3.4, "Specifying Styles."

- `adftemplate`

  For information, see Section 17.3.5, "Specifying an ADF Template."

- `uitype`

  For information, see Section 17.3.6, "Showing a Command Link."

- `icon`

  For information, see Section 17.3.7, "Displaying an Image."

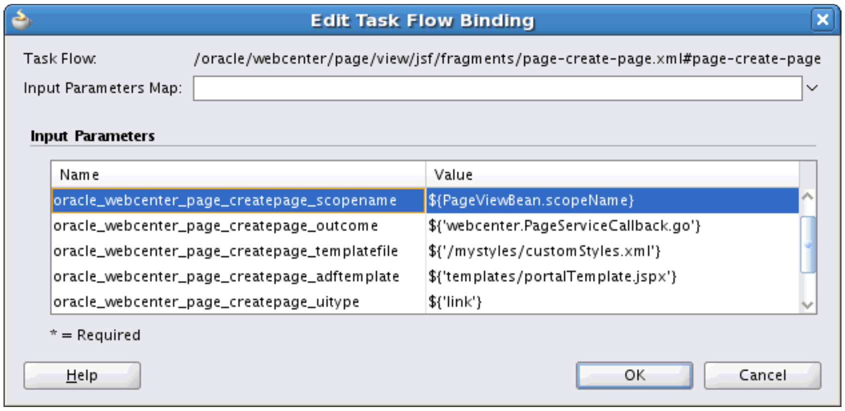
- `label`

  For information, see Section 17.3.8, "Customizing the Label."

17.3.2 Setting Scope in a Page - Create New Task Flow

By default, the pages and task flows you create using the Page - Create New task flow are stored in the default scope. To assign a specific scope to the Page - Create New task flow, the scope name must be assigned to the `oracle_webcenter_page_createpage_scopename` parameter, as shown in Figure 17–5.

Figure 17–5 oracle_webcenter_page_createpage_scopename Parameter



Edit Task Flow Binding

Task Flow: /oracle/webcenter/page/view/jsf/fragments/page-create-page.xml#page-create-page

Input Parameters Map:

Input Parameters

Name	Value
oracle_webcenter_page_createpage_scopename	${PageViewBean.scopeName}
oracle_webcenter_page_createpage_outcome	${'webcenter.PageServiceCallback.go'}
oracle_webcenter_page_createpage_templatefile	${'/mystyles/customStyles.xml'}
oracle_webcenter_page_createpage_adftemplate	${'templates/portalTemplate.jspx'}
oracle_webcenter_page_createpage_uitype	${'link'}

* = Required

In Figure 17–5, `PageViewBean` is a custom managed bean that is invoking the `getScopeName()` method to fetch the value of `scopeName`. It uses the page API. By doing this, the Page - Create New task flow creates all pages and task flows under the specified scope, rather than the default scope.

The following example code highlights only the creation of scope. If a scope already exists, then users can get the scope name from the `Scope` object.

Example 17–11 Creating a Scope for Application Pages

```
import oracle.webcenter.framework.service.Scope;
import oracle.webcenter.framework.service.ScopeAlreadyExistsException;
import oracle.webcenter.framework.service.ServiceContext;

public class PageViewBean {
    private String scopeName;

    public String getScopeName() {
        String scopeName = "MyScope";
        ServiceContext sContext = ServiceContext.getContext();
        try {
            Scope scope =
                sContext.createScope(scopeName); // Creates a new scope
            this.scopeName = scope.getName(); // Returns the scope name
            sContext.setScope(scope); // Setting the Scope. This step is
important.
        } catch (ScopeAlreadyExistsException scopeExistsException) {
            System.out.println("Scope Already Exists...");
        }
        return this.scopeName;
    }


    public void setScopeName(String scopeName) {
        this.scopeName = scopeName;
    }

}
```

17.3.3 Setting an Outcome Parameter

The outcome parameter defines a Java method that is called after the page is created. In this method, you can add dynamic content to the page, refresh the user interface that calls up the dialog to confirm creation of a new page, or initiate browser navigation to the newly created page. To specify a Java method to invoke after page creation (that is, it is called after users click the **Create** button in the Create Page dialog), enter the following in the Edit Task Flow Binding dialog:

```
oracle_webcenter_page_createpage_outcome = ${'view.MyTestClass.go'}
```

You can define the method either with a String parameter or with no parameter. The String parameter value is the new page's name with full path. If the method is defined both ways, then the one with a parameter is invoked.

In the following example, the method `go(String newPagePath)` is invoked. This method redirects users to the newly created page with the Java class `MyTestClass.java`. The value of `newPagepath` is passed by pages.

```
package view;

import javax.faces.context.ExternalContext;
import javax.faces.context.FacesContext;
import javax.faces.event.ActionEvent;

public class MyTestClass {
    public MyTestClass() {
    }

    /*
       This method is executed only when there is no other go(String newPagePath)
method with a String argument .
    */
    public void go() {
        System.out.println("go() method without parameters executed.");
    }

    /*
       This method is prioritized and executed even when there are other go()
methods without arguments.
    */
    public void go(String newPagePath) {
        System.out.println("go(String newPagePath) method with parameter
executed.");
        try {
            FacesContext context = FacesContext.getCurrentInstance();
            String viewID = context.getViewRoot().getViewId();
            System.out.println("ViewID=" + viewID);

            ExternalContext extCtx = context.getExternalContext();
            String targetURI =
                extCtx.getRequestContextPath() + "/faces" + viewID;
            System.out.println("Navigate to: " + targetURI);
            extCtx.redirect(targetURI);
            context.responseComplete();
        } catch (Exception ee) {
            System.out.println("Error: " + ee.toString());
        }

    }
}
```

17.3.4 Specifying Styles

Pages provide out-of-the-box styles that are packaged within the page libraries. You can use these styles or create your own custom styles.

This section describes how to apply out-of-the-box styles and custom styles. It contains the following subsections:

- Section 17.3.4.1, "Out-of-the-Box Styles"
- Section 17.3.4.2, "Custom Styles"

> **Note:** For more information about styles, see Section 17.6, "Introduction to Custom Styles and Templates."

17.3.4.1 Out-of-the-Box Styles

The following out-of-the-box-styles are provided (see Figure 17–1):

- Blank
- Left Narrow
- Right Narrow
- Stretch
- Text Page
- Three Column
- Web Page

To associate out-of-the-box styles with the Page - Create New task flow, use the optional parameter `oracle_webcenter_page_createpage_templatefile`. Use the parameter value to specify the location of the file that contains the list of out-of-the-box styles.

To associate out-of-the-box styles with the Page - Create New task flow:

1. Create a folder named `mystyles` under your Portal Framework application's `public_html` folder.
2. Within `mystyles`, create a file named `default_pageservice_styles.xml`.
3. Add entries for all the out-of-the-box styles using the `templateDef` element.

   The `templateDef` element takes the following attributes:

   - `name`: This attribute specifies the path to the `.jspx` page that defines a page style. When you use the default styles, you must specify the path to the page that defines the style you intend to use. The default page style page files are located within the page libraries. For example:

     ```
     name="/oracle/webcenter/page/pstemplates/TemplateThreeColumn.jspx"
     ```

     `TemplateThreeColumn.jspx` is the page within the page library that defines the Three Column Template style.
   - `title`: The value you enter for `title` is used as the name for the style in the Create Page dialog. You can modify the title of an out-of-the-box style to any name. For example: `title="Three Column Layout"` or `title="Sales Standard"`.
   - `icon`: This attribute specifies an image icon for a style.

For out-of-the-box styles, if you do not specify an icon for a style, the default icons assigned to each out-of-the-box style are used.

Example 17–12 shows the content of a sample `default_pageservice_styles.xml` file that lists the other out-of-the-box styles:

Example 17–12 Sample default_pageservice_styles.xml File

```
<?xml version="1.0" encoding="UTF-8" ?>
 <templatesDef xmlns="http://xmlns.oracle.com/webcenter/page">
  <templateDef name="/oracle/webcenter/page/pstemplates/TemplateThreeColumn.jspx"
title="Three Column Layout" />
  <templateDef name="/oracle/webcenter/page/pstemplates/TemplateText.jspx"
title="Text Page" />
  <templateDef name="/oracle/webcenter/page/pstemplates/TemplateStretch.jspx"
title="Stretch" />
  <templateDef name="/oracle/webcenter/page/pstemplates/TemplateWeb.jspx"
title="Web Page" />
  <templateDef name="/oracle/webcenter/page/pstemplates/TemplateBlank.jspx"
title="Blank" />
  <templateDef name="/oracle/webcenter/page/pstemplates/TemplateNarrowLeft.jspx"
title="Left Narrow Column Layout" />
  <templateDef name="/oracle/webcenter/page/pstemplates/TemplateNarrowRight.jspx"
title="Right Narrow Column Layout" />
 </templatesDef>
```

4. Open the Edit Task Flow Binding dialog as described in Section 17.3.1, "How to Access Page - Create New Task Flow Parameters."

5. Set the `oracle_webcenter_page_createpage_templatefile` parameter value to `${'/mystyles/default_pageservice_style.xml'}`.

   For example:

   ```
   oracle_webcenter_page_createpage_templatefile = ${'/mystyles/default_
   pageservice_style.xml'}
   ```

6. Click **OK**.

17.3.4.2 Custom Styles

In this example, you associate a custom style, labeled **News**, with the Page - Create New task flow.

To associate a custom style with the Page - Create New task flow:

1. Define your custom style in a `.jspx` file (for example, `NewsTemplate.jspx`).

   > **Note:** For information about how to create ADF templates, see Section 17.6, "Introduction to Custom Styles and Templates."

2. Add an entry for the custom style in an XML file (for example, `custom_pageservice_style.xml`).

   For example:

   ```
   <?xml version="1.0" encoding="UTF-8" ?>
     <templatesDef xmlns="http://xmlns.oracle.com/webcenter/page">
       <templateDef name="NewsTemplate.jspx" title="News" icon="/images/news.png"
   />
     </templatesDef>
   ```

Note: For more information about the syntax to use for `templateDef` element and the style-related `.xml` file, see Section 17.3.4.1, "Out-of-the-Box Styles."

---

3. Save the `custom_pageservice_style.xml` under a folder in your application's `public_html` folder.

   For example:

   ```
   …/public_html/mystyles/custom_pageservice_style.xml
   ```

4. The following files must be placed in the same folder as `custom_pageservice_style.xml`:

   - The file that defines the custom style, for example, `NewsTemplate.jspx`.
   - The page definition file of the custom style file, for example, `NewTemplatePageDef.xml`.
   - The ADF Template (for example, `defaultTemplate.jspx`) on which the custom style file is based. This step is applicable only if you are using ADF templates.

   Note: If you specify the location of an ADF template using the `oracle_webcenter_page_createpage_adftemplate`, then you *do not* need to put this file (`defaultTemplate.jspx`) under the `mystyles` folder. You can specify a different location for the file by following Section 17.3.5, "Specifying an ADF Template."

   ---

5. Open the Edit Task Flow Binding dialog as described in Section 17.3.1, "How to Access Page - Create New Task Flow Parameters."

6. Set the `oracle_webcenter_page_createpage_templatefile` parameter to `${'/mystyles/custom_pageservice_style.xml'}`, where `mystyles` is a folder under the `public_html` folder of your application.

   For example:

   ```
   oracle_webcenter_page_createpage_templatefile = ${'/mystyles/custom_
   pageservice_style.xml'}
   ```

17.3.5 Specifying an ADF Template

When you want to use the same template for both design time and runtime pages, you can use an ADF template. All that is required is to point the Page - Create New task flow to the template location.

To associate an ADF template with the Page - Create New task flow:

1. Open the Edit Task Flow Binding dialog as described in Section 17.3.1, "How to Access Page - Create New Task Flow Parameters."

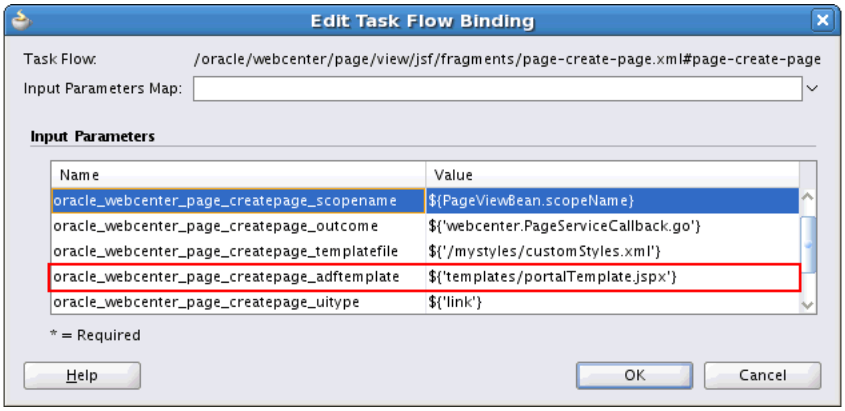
2. In the Value column next to the `oracle_webcenter_page_creatpage_adftemplate` parameter, enter the path to the ADF template.

   For example:

   ```
   ${'templates/portalTemplate.jspx'}
   ```

In Figure 17–6, an ADF template called `portalTemplate.jspx` is used.

Figure 17–6 oracle_webcenter_page_createpage_adftemplate Parameter



Task Flow: /oracle/webcenter/page/view/jsf/fragments/page-create-page.xml#page-create-page

Input Parameters Map:

Input Parameters

Name	Value
oracle_webcenter_page_createpage_scopename	${PageViewBean.scopeName}
oracle_webcenter_page_createpage_outcome	${'webcenter.PageServiceCallback.go'}
oracle_webcenter_page_createpage_templatefile	${'/mystyles/customStyles.xml'}
oracle_webcenter_page_createpage_adftemplate	${'templates/portalTemplate.jspx'}
oracle_webcenter_page_createpage_uitype	${'link'}

* = Required

ADF templates can be in your application's `public_html` folder. In this case, the path of `portalTemplate.jspx` is `../public_html/templates/portalTemplate.jspx`.

3. Click **OK**.

17.3.6 Showing a Command Link

By default, the Page - Create New task flow is rendered as a command *button* (Figure 17–7). You can instead specify that it is rendered as a command *link* (Figure 17–8).

Figure 17–7 Command Button

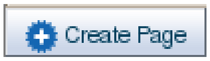
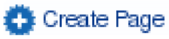


Figure 17–8 Command Link



To render the Page - Create New task flow as a command link:

1. Open the Edit Task Flow Binding dialog as described in Section 17.3.1, "How to Access Page - Create New Task Flow Parameters."

2. Revise the `oracle_webcenter_page_createpage_uitype` parameter to the following value: `${'link'}`.

   For example:

   ```
   oracle_webcenter_page_createpage_uitype = ${'link'}
   ```

3. Click **OK**.

17.3.7 Displaying an Image

You can associate an icon with the Page - Create New task flow button or link.

To specify an icon for the Page - Create New task flow button or link:

1. Open the Edit Task Flow Binding dialog as described in Section 17.3.1, "How to Access Page - Create New Task Flow Parameters."
2. Revise the `oracle_webcenter_page_createpage_icon` parameter to the required value.

   For example:

   ```
   oracle_webcenter_page_createpage_icon = ${'/images/page.jpg'}
   ```

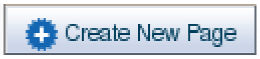
3. Click **OK**.

17.3.8 Customizing the Label

By default, the label for the Page - Create New task flow command button or link is **Create Page**. You can provide your own value using the `oracle_webcenter_page_createpage_label` parameter value.

Figure 17–9 shows the task flow rendered as a command button with a custom label.

Figure 17–9 Custom Label



To change the command button or link label:

1. Open the Edit Task Flow Binding dialog as described in Section 17.3.1, "How to Access Page - Create New Task Flow Parameters."
2. Revise the `oracle_webcenter_page_createpage_label` parameter to your preferred string value.

   For example:

   ```
   oracle_webcenter_page_createpage_label = ${'Create New Page'}
   ```

3. Click **OK**.

17.4 How to Create Task Flow View Pages

The following types of objects are required for the creation of a task flow view page:

- Task flow view page (JSFF file)
- Page definition of view page
- Task flow definition XML file, which defines the task flow

To enable the creation of task flow view pages through the Page - Create New task flow:

1. At design time, add a **Page - Create New** task flow to your page (`home.jspx`).
2. Open the Edit Task Flow Binding dialog as described in Section 17.3.1, "How to Access Page - Create New Task Flow Parameters."
3. Change the label on the Create Page button or link by revising the value specified for the `oracle_webcenter_page_createpage_label` parameter.

   For example:

   ```
   oracle_webcenter_page_createpage_label = ${'Create Task Flow'}
   ```

4. Click **OK**.

5. Create an XML file (for example, custom_taskflow_styles.xml) to contain entries for all the task flow styles.

   For example:

   ```
   <?xml version='1.0' encoding="UTF-8"?>
   <templatesDef xmlns="http://xmlns.oracle.com/webcenter/page">
     <templateDef name="mytaskflow_view.jsff" title="News"
   icon="/images/news.png" type="taskflow"/>
   </templatesDef>
   ```

   The element templateDef in the XML file contains the following attributes:

   - name: to specify the name of the task flow view page
   - title: to specify the label to associate with the task flow view page style in the Create Page dialog.
   - icon: to specify the image icon for the task flow

   Note: For sample attribute syntaxes, see step 3 in Section 17.3.4.1, "Out-of-the-Box Styles."

6. Under your application's public_html folder, create a folder (for example, mystyles) and add the custom_taskflow_styles.xml file to it.

7. Make sure that the following files are also under the mystyles folder:

   - mytaskflow_view.jsff (task flow view page)
   - mytaskflow_viewPageDef.xml (task flow view page definition)
   - mytaskflow_view.xml (task flow definition)

8. Open the Edit Task Flow Binding dialog again, and provide the path to the XML file you created in step 5, for the oracle_webcenter_page_createpage_templatefile parameter.

   For example:

   ```
   oracle_webcenter_page_createpage_templatefile=${'/mystyles/custom_taskflow_
   styles.xml' }
   ```

   In this example, mystyles is a folder under the public_html folder of your application.

9. Run the home.jspx page, and then click the **Create Task Flow** button.

10. Enter the title of the task flow, select the **News** style (that you created in Section 17.3.4.2, "Custom Styles"), and then click **Create**.

    The new task flow view page is rendered.

For information about where the task flows are created, see Section 17.2.1.4, "Structure of Pages Created at Runtime."

17.5 Managing Pages

You can manage pages using either the Page data control or the page APIs. This section contains the following subsections:

- Section 17.5.1, "Using the Page Data Control to Manage Pages"
- Section 17.5.2, "Using the Page APIs to Manage Pages and Task Flows"

17.5.1 Using the Page Data Control to Manage Pages

You can customize page views with the Page data control. The data control enables you to view information about existing pages at runtime and delete any of the listed pages. The Page data control, `Page Data Control`, is included in page libraries and is available at design time after you add the libraries to the application.

For more information about the Page data control, see Section 17.8.2, "Using the Page Data Control."

17.5.2 Using the Page APIs to Manage Pages and Task Flows

You can use APIs to manage pages and task flows. These include APIs to delete pages and task flows, change the hidden status, change the page scheme (name, background color, background image), and copy pages.

For more information about page APIs, see Section 17.8.1, "Using the Page Java APIs."

17.6 Introduction to Custom Styles and Templates

At runtime, when users click the Create Page option, the Create Page dialog displays a set of predefined styles for creating the page (see Figure 17–1). Users select one of these page styles to create a page based on the associated style template. The *style* provides a special look and feel to your pages. The *template* provides the page layout. Templates are the ADF pages on which runtime pages are based. Pages can be based on default or custom styles and templates.

To provide custom selections for the Create Page dialog, you must define them, for example, in `/mytemplates/templates.xml`. Place the directory `/mytemplates` under the web content root.

If you choose *not* to use the default options available with the Create Page dialog, then you can use the following types of custom templates in your application:

- Page and page fragment templates for use with runtime pages
- ADF templates for use as the base for page and page fragment templates
- Templates to be used by the Create Page dialog itself

This section explains how to customize the Page - Create New task flow to use different templates for the Create Page dialog and for the new pages that you create at runtime. It contains the following subsections:

- Section 17.6.1, "How to Create Templates for Pages Created at Runtime"
- Section 17.6.2, "Using ADF Templates"
- Section 17.6.3, "Creating Styles for the Create Page Dialog"

> **Note:** For more information about the `templates.xml` file, see Section 17.3.4, "Specifying Styles."

17.6.1 How to Create Templates for Pages Created at Runtime

You can create custom page templates according to your design requirements and associate page styles with these templates. If you want to restrict the style options in the Create Page dialog or provide a different set of styles, then you must perform the following high-level tasks:

- Create pages or page fragments to be used as templates for the different page styles.
- Edit the Create Page dialog parameter to specify new page styles.

This section steps you through both procedures. It contains the following subsections:

- Section 17.6.1.1, "How to Create a Page or Page Fragment Style"
- Section 17.6.1.2, "How to Edit Create Page Dialog Styles"

17.6.1.1 How to Create a Page or Page Fragment Style

To create a page or page fragment style:

1. In Oracle JDeveloper, create a JSF template with all necessary information, such as header, welcome message, login/logout links, and so on.
2. When creating pages, create a page (JSPX) based on that template.

   When creating task flows, create a page fragment (JSFF) based on that template.

   When creating a page based on a template, the template is copied and a new page is created based on it.
3. Put all the necessary content in the JSPX or JSFF file.

   For example, if there is a facet where you would like to display content, you can drop a Page Customizable component from Composer around it to make the page editable at runtime. Make sure you set the correct values for the `document title`, `styleClass`, and `inlineStyle` attributes.

   > **Note:** If this page or page fragment will be used as a template for pages that can be customized at runtime, then you must ensure that the `ID` attribute on all components on this page or fragment is set to a unique value.

   Example 17–13 shows the sample code of a page fragment style, `pstemplateview.jsff`.

Example 17–13 Sample Code of a New Page Style

```
<?xml version='1.0' encoding='utf-8'?>
<!-- Copyright (c) 2006, 2008, Oracle and/or its affiliates.
All rights reserved. -->
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
          xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
     <jsp:directive.page contentType="text/html;charset=utf-8"/>
     <f:loadBundle basename="oracle.webcenter.page.view.resource.PGUIBundle"
                   var="res"/>
     <f:view>
       <af:document title="#{pageDocBean.title}" id="docrt">
```

```
         <af:form usesUpload="true" id="f1">
           <af:pageTemplate
viewId="/oracle/webcenter/page/pstemplates/defaultTemplate.jspx" id="T">
             <f:facet name="content">
               <pe:pageCustomizable id="pcl1">
                 <af:panelStretchLayout id="psl2"
                                        styleClass="replace_with_scheme_name"
                                        inlineStyle="replace_with_inline_style">
                   <f:facet name="center">
                     <af:panelGroupLayout id="pgl1"
                                          layout="scroll">
                       <pe:layoutCustomizable id="lc1"
                                 showLayoutChanger="#{pageServiceBean.isEditMode}"
                                 text="Change Layout"
                                 showIcon="false"
                                 type="threeColumnNarrow"
                                 shortDesc="Layout Changer">
                         <cust:panelCustomizable id="mainC"/>
                         <f:facet name="contentA">
                           <cust:panelCustomizable id="cnta"/>
                         </f:facet>
                         <f:facet name="contentB">
                           <cust:panelCustomizable id="cntb"/>
                         </f:facet>
                       </pe:layoutCustomizable>
                     </af:panelGroupLayout>
                   </f:facet>
                 </af:panelStretchLayout>
                 <f:facet name="editor">
                   <pe:pageEditorPanel id="pep1"/>
                 </f:facet>
               </pe:pageCustomizable>
             </f:facet>
           </af:pageTemplate>
         </af:form>
       </af:document>
```

Note: The page definition file of the JSPX page, which defines the style, must contain the following syntax for the `id` and `Package` attributes. These values are replaced with the relevant values when a page is created based on a custom style.

```
<?xml version="1.0" encoding="UTF-8" ?>
<pageDefinition xmlns="http://xmlns.oracle.com/adfm/uimodel"
                version="11.1.1.41.30"
                id="ps_pagedefusage"
                Package="ps_package">
```

Alternatively, the JSPX or JSFF template file that you are creating can be based on an ADF template.

Example 17–14 shows the sample code of an ADF template.

Note: If you choose to design your own ADF templates and want to set page style, then you must have a `Panel Group Layout` or `Panel Stretch Layout` component as a direct child of the `Page Customizable`. Additionally, you must set the placeholder for `styleClass` and `inlineStyle`, as shown in **bold** below. The page style values replace the placeholder text.

Example 17–14 Sample Code of a Page Style that uses an ADF Template

```
<?xml version='1.0' encoding='utf-8'?>
<!-- Copyright (c) 2006, 2008, Oracle and/or its affiliates.
All rights reserved. -->
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
          xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
  <jsp:directive.page deferredSyntaxAllowedAsLiteral="true"/>
  <jsp:directive.page contentType="text/html;charset=utf-8"/>
  <f:view>
    <af:document title="#{pageDocBean.title}" id="docrt">
      <af:form usesUpload="true" id="f1">
        <af:pageTemplate

viewId="/oracle/webcenter/webcenterapp/view/templates/WebCenterAppShellTemplate.js
px"
                value="#{bindings.shellTemplateBinding}" id="T">
          <f:facet name="content">
            <pe:pageCustomizable id="pcl1">
              <af:panelStretchLayout id="psl2"
                                     styleClass="replace_with_scheme_name"
                                     inlineStyle="replace_with_inline_style">
                <f:facet name="center">
                  <af:panelGroupLayout id="pgl1"
                                       layout="scroll">
                    <pe:layoutCustomizable id="lc1"

showLayoutChanger="#{pageServiceBean.isEditMode}"
                                           text="#{uib_o_w_w_r_WebCenter.LABEL_
CHANGE_LAYOUT}"
                                           showIcon="false" type="oneColumn"
                                           shortDesc="#{uib_o_w_w_r_
WebCenter.LABEL_CHANGE_LAYOUT}">
                      <cust:panelCustomizable id="mainC"/>
                      <f:facet name="contentA">
                        <cust:panelCustomizable id="cnta"/>
                      </f:facet>
                      <f:facet name="contentB">
                        <cust:panelCustomizable id="cntb"/>
                      </f:facet>
                    </pe:layoutCustomizable>
                  </af:panelGroupLayout>
                </f:facet>
              </af:panelStretchLayout>
              <f:facet name="editor">
                <pe:pageEditorPanel id="pep1"/>
              </f:facet>
            </pe:pageCustomizable>
          </f:facet>
        </af:pageTemplate>
      </af:form>
    </af:document>
  </f:view>
</jsp:root>
```

Example 17–15 shows the sample code of a page style, `NewsTemplate.jspx`, that is based on an ADF template, `portalTemplate.jspx`. The `viewId` attribute of the `af:pageTemplate` tag provides the name of the ADF template used.

For information about using ADF templates, see *Web User Interface Developer's Guide for Oracle Application Development Framework*.

Example 17–15 Sample Code of a Page Style Based on an ADF Template

```
<?xml version='1.0' encoding='utf-8'?>
<!-- Copyright (c) 2006, 2008, Oracle and/or its affiliates.
All rights reserved. -->
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
          xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
  <jsp:directive.page contentType="text/html;charset=utf-8"/>
  <f:loadBundle basename="oracle.webcenter.page.view.resource.PGUIBundle"
                var="res"/>
  <f:view>
    <af:document title="#{pageDocBean.title}">
      <af:form usesUpload="true">
          <af:pageTemplate viewId="/mytemplates/portalTemplate.jspx"
 value="#{bindings.pageTemplateBinding}">
      <f:facet name="pageContent">
            <pe:pageCustomizable id="pgc1">
              <af:panelStretchLayout id="psl1"
                                     styleClass="#{pageDocBean.CSSStyle}"
                                     inlineStyle="#{pageDocBean.inlineStyle}">
                <f:facet name="center">
                  <af:panelGroupLayout id="pgl1" layout="scroll">
                    <pe:layoutCustomizable id="lc1"
                        showLayoutChanger="#{pageServiceBean.isEditMode}"
                                     text="#{res['TEMPLATE.CHANGE_LAYOUT']}"
                                     showIcon="false" type="oneColumn"
                                     shortDesc="#{res['TEMPLATE.CHANGE_LAYOUT']}">
                      <cust:panelCustomizable id="mainC">
                        <cust:showDetailFrame id="sdf2"
                                              showMinimizeAction="none"
                                              showMoveAction="none"
                                              showRemoveAction="none"
                                              displayHeader="false"
                                              displayShadow="false"
                                              stretchContent="false"
                                              shortDesc="#{null}"
                                              background="light"
                                              showResizer="never"
                                              text="Text">
                          <af:richTextEditor id="rtepc" clientComponent="true"
                                             simple="true" label="#{null}"
                                             rows="20" readOnly="false"
                                             contentStyle="width:100%;"/>
                        </cust:showDetailFrame>
                      </cust:panelCustomizable>
                      <f:facet name="contentA">
                        <cust:panelCustomizable id="cnta"/>
                      </f:facet>
                      <f:facet name="contentB">
                        <cust:panelCustomizable id="cntb"/>
                      </f:facet>
                    </pe:layoutCustomizable>
                  </af:panelGroupLayout>
                </f:facet>
              </af:panelStretchLayout>
              <f:facet name="editor">
                <pe:pageEditorPanel/>
              </f:facet>
            </pe:pageCustomizable>
          </f:facet>
        </af:pageTemplate>
      </af:form>
    </af:document>
  </f:view>
</jsp:root>
```

To display a different style or use a different template for a style, you must define it, for example, in `/mytemplates/templates.xml`. Place the directory `/mytemplates` under the web content root. For more information about the `templates.xml` file, see Section 17.3.4, "Specifying Styles."

Example 17–16 shows a sample `templates.xml` file.

Example 17–16 templates.xml File

```
<?xml version='1.0' encoding="UTF-8"?>
<templatesDef xmlns="http://xmlns.oracle.com/webcenter/page">
  <templateDef name="TemplateBlank.jspx"
               title="Blank"/>
  <templateDef name="TemplateNarrowLeft.jspx"
               title="Left Narrow Column Layout"/>
  <templateDef name="TemplateNarrowRight.jspx"
               title="Right Narrow Column Layout"/>
  <templateDef name="TemplateThreeColumn.jspx"
               title="Three Column Layout"/>
  <templateDef name="TemplateStretch.jspx"
               title="Stretch"/>
  <templateDef name="TemplateText.jspx"
               title="Text"/>
  <templateDef name="TemplateWeb.jspx"
               title="Web"/>
  <templateDef name="NewsTemplate.jspx"
               title="News"/>
</templatesDef>
```

17.6.1.2 How to Edit Create Page Dialog Styles

To edit the styles for the Create Page dialog and add a reference to the new page style:

1. Create the `/mytemplates/templates.xml` file, commenting out `templateDef` entries for any default page styles that you do not want to display.
2. In the `templateDef` entry for the style that you want to associate with a different template, edit the `name` and `type` attributes, as shown in the following example:

```
<templateDef name="pstemplateview.jsff"
             title="News"
             icon="/images/news.png"
             type="taskflow"/>
```

where

- name is the name of the page style that you want to use.
- title is the label displayed for the style in the Create Page dialog.
- type is the type of page style. It can take the value page or task flow. The default value page, creates a page based on the style's associated template. The value task flow creates a task flow view of a page based on the style's associated template.

3. If you want to add a new style to the Create Page dialog, add a templateDef entry, as shown in the following example:

```
<templateDef name="pstemplateview3.jsff"
             title="Rich Text"
             type="taskflow"
             forGroupSpace="false"/>
```

4. Save the XML file.

At runtime, the Create Page dialog displays the styles you specified. The pages and task flow page views users create using those styles are based on the JSPX or JSFF templates you defined.

17.6.2 Using ADF Templates

If your page template is based on an ADF template, you can configure the page creation task flow to use a different ADF template depending on different criteria, such as user or scope.

You can specify the ADF template to use for runtime page creation in either of the following ways:

- By using the oracle_webcenter_page_createpage_adftemplate parameter in the page creation task flow (see Section 17.3.4, "Specifying Styles").
- By using the ADFTemplateViewID parameter in the createPage() and createTaskflow() APIs.

Any JSPX page template that is based on an ADF template contains an af:pageTemplate tag with the viewId attribute. The viewId attribute contains the name of the ADF template. Example 17–15 shows a page template that is based on the ADF template portalTemplate.jspx.

When you specify an ADF template name for use during page creation, the af:pageTemplate tag in the page template is searched and the viewId attribute is updated with the value you provided.

This section describes how to specify which ADF template to use under a given circumstance. It contains the following subsections:

- Section 17.6.2.1, "How to Specify the ADF Template Name Using the Task Flow Parameter"
- Section 17.6.2.2, "How to Specify the ADF Template Name Using API Parameters"

17.6.2.1 How to Specify the ADF Template Name Using the Task Flow Parameter

To specify the ADF template name using the task flow parameter:

1. Open the JSPX file containing the Page - Create New task flow.
2. Right-click the page name and select **Go to Page Definition**.
3. In the page definition file, under Executables, select the Create Page task flow, and click the **Edit** icon on the header.
4. The Edit Task Flow Binding dialog opens with the list of input parameters supported by the task flow.
5. Set the `oracle_webcenter_page_createpage_adftemplate` parameter.

   If you define a constant value, for example `${'/mytemplates/defaultTemplate2.jspx'}`, then this ADF template is used for all pages created using the create page task flow.

   However, by providing an EL value for the parameter, you can ensure that a different ADF template is used based on different criteria, such as user or scope.

   For example, assume you have two users, `user1` and `user2`, and want to use a different ADF template for pages created by each user. You must enter the value `${MyClass.ADFTemplate}` for the `oracle_webcenter_page_createpage_adftemplate` parameter and define the method `MyClass.getADFTemplate()` so that it returns different ADF templates based on which user has logged in.
6. Click **OK**.

17.6.2.2 How to Specify the ADF Template Name Using API Parameters

To specify the ADF template name using API parameters:

1. Create a page or a task flow, and specify the ID of the ADF template view activity.

   The page or task flow is subsequently created based on that ADF template.

   To create a page:

   ```
   PageService.createPage(
        String pageType, String nameFormat, String title,
        String pageTemplate, String pageTemplatePath,
        String ADFTemplateViewID,
        String cssStyle, String schemeBGImage, String schemeBGColor)
   ```

   where `ADFTemplateViewID` is the ID of the ADF template view activity.

   To create a task flow:

   ```
   PageService.createTaskflow(
        String nameFormat, String title,
        String pageTemplate, String pageTemplatePath,
        String ADFTemplateViewID,
        String cssStyle, String schemeBGImage, String schemeBGColor)
   ```

   where `ADFTemplateViewID` is the ID of the ADF page template view activity.

17.6.3 Creating Styles for the Create Page Dialog

To use your own page styles, define them in `/mytemplates.templates.xml` file. If you want to maintain a separate XML file with a different set of page styles, you can create an XML file and reference that from the Page - Create New task flow. For example, to display two different options to two users with different privileges, you must create two XML files and define different styles in each XML file. You can then ensure that the Create Page dialog displays the respective options to each user.

This section describes how to create and reference a new style for the runtime Create Page dialog. It contains the following subsections:

- Section 17.6.3.1, "How to Create a Style for the Create Page Dialog"
- Section 17.6.3.2, "How to Reference a New Style from the Page - Create New Task Flow"

17.6.3.1 How to Create a Style for the Create Page Dialog

To create a style for the Create Page dialog:

1. In the `/mytemplates` directory, create an XML file, for example `templates2.xml`.
2. Add a `templatesDef` element, and within that add a `templateDef` entry for each style that you want to include in the Create Page dialog.

   Example 17–17 shows the code entered into sample XML file `templates2.xml` that references the `pstemplateview.jsff` fragment you created in Section 17.6.1.1, "How to Create a Page or Page Fragment Style."

Example 17–17 Sample Code for the Create Page Dialog Style

```
<?xml version="1.0" encoding="UTF-8" ?>
- <templatesDef xmlns="http://xmlns.oracle.com/webcenter/page">
<templateDef name="pstemplateview.jsff" title="News" icon="/images/news.png"
             type="taskflow" />
  </templatesDef>
```

   where

   - `name` is the name of the page or page fragment to use as a template.
   - `title` is the label for the style in the Create Page dialog.
   - `type` is the type of template. It can take that value `page` or `taskflow`. The default value `page` creates a page based on the style's associated template. The value `taskflow` creates a task flow view of a page based on the style's associated template.

3. Save the XML file.

17.6.3.2 How to Reference a New Style from the Page - Create New Task Flow

To reference the new XML file from the Page - Create New task flow:

1. Open the JSPX page that contains the Page - Create New task flow.
2. Right-click the JSPX page, and select **Go to Page Definition**.
3. In the page definition file, under Executables, select the Create Page task flow, and click the **Edit** icon on the header.

   The Edit Task Flow Binding dialog opens with the list of input parameters supported by the task flow.

4. Provide the template file name for the `oracle_webcenter_page_createpage_templatefile` parameter.

   If you define a constant value, for example `${'/mytemplates/templates2.xml'}`, then this template is used for the Create Page dialog always.

However, by providing an EL value for the parameter, you can ensure that a different template is used for the dialog based on different criteria, such as user or scope.

For example, assume you have two users, `user1` and `user2`, and want to display a different page style to each user. In this case, you must have two templates for the Create page dialog. Let us say you have created a new template, `templates2.xml`, and updated the default template, `templates.xml`. You can then specify `${TemplateBean.template}` for the `oracle_webcenter_page_createpage_templatefile` parameter.

To use this value, you must first create the managed bean, `TemplateBean.java`, with method `getTemplate()`, which returns `templates.xml` for `user1` and `templates2.xml` for `user2`. At runtime, user1 and user2 are each shown different options in the Create Page dialog.

5. Click **OK**.

6. Click **Save All** to save your work.

17.7 Customizing Page Views

This section describes various ways to customize page views. It contains the following subsections:

- Section 17.7.1, "Rendering Pages with ADF Faces Components"
- Section 17.7.2, "Managing User Security on Pages and Task Flows"

17.7.1 Rendering Pages with ADF Faces Components

You can use ADF Faces components to render runtime pages. For example, you can use ADF Faces components to render pages as tabs, links, and image links—or thumbnail views of pages. This section provides some examples of the types of pages you can create using ADF Faces components. It contains the following subsections:

- Section 17.7.1.1, "Rendering Pages as Tabs Using ADF Faces Components"
- Section 17.7.1.2, "Rendering Pages as Links Using ADF Faces Components"
- Section 17.7.1.3, "Rendering Pages as Image Links Using ADF Faces Components"

17.7.1.1 Rendering Pages as Tabs Using ADF Faces Components

When you design your application to render pages as tabs, you can use a range of ADF Faces components to accomplish this. This section provides information about the ADF Faces components that support rendering of pages as tabs. It contains the following subsections:

- Section 17.7.1.1.1, "Rendering Pages as Tabs Using af:navigationPane"
- Section 17.7.1.1.2, "Rendering Pages as Tabs Using af:panelTabbed"

17.7.1.1.1 Rendering Pages as Tabs Using af:navigationPane Example 17–18 illustrates how pages can be rendered as tabs using `navigationPane` components.

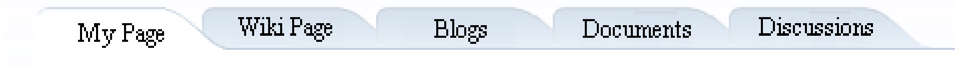
Here a method called `pages` from a custom bean (`MyPageServiceBean`) is used to get the list of pages. For more information about getting the list of pages with the page API, see the `getPages()` method in page API section.

Example 17–18 Rendering Pages as Tabs Using af:navigationPane

```
      <af:navigationPane id="tabs">
        <af:forEach var="tab" items="#{MyPageServiceBean.pages}">
          <af:commandNavigationItem text="#{tab.title}"  id="cni1"/>
          </af:forEach>
        </af:navigationPane>
```

The output of the code depicted in Figure 17–18 renders as a series of tabs (Figure 17–10).

Figure 17–10 Render Pages as Tabs



17.7.1.1.2 Rendering Pages as Tabs Using af:panelTabbed Example 17–19 illustrates how pages can be rendered as tabs using `panelTabbed` components.

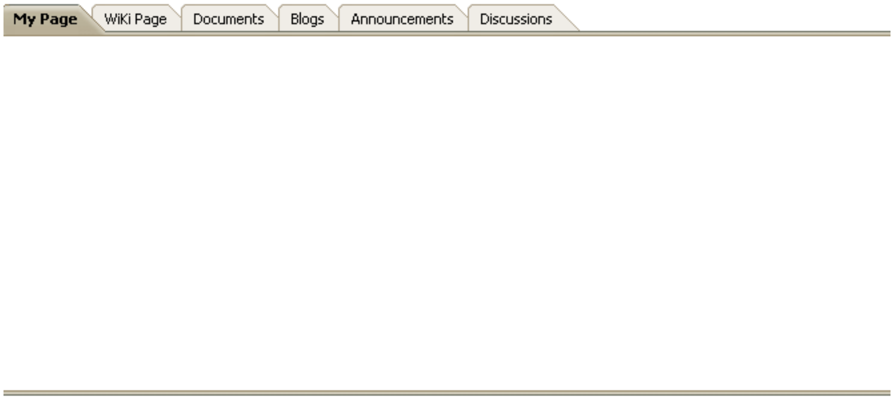
Here a method called `pages` from a custom bean (`MyPageServiceBean`) is used to get the list of pages.

Example 17–19 Rendering Pages as Tabs Using af:panelTabbed

```
<af:panelTabbed id="pt1" >
    <af:forEach var="tab" items="#{ MyPageServiceBean.pages}">
        <af:showDetailItem text="#{tab.title}" id="sdi1"/>
     </af:forEach>
   </af:panelTabbed>
```

The output of the code in Example 17–19 renders as a series of tabs (Figure 17–11).

Figure 17–11 Render Pages as af:panelTabbed Component



17.7.1.2 Rendering Pages as Links Using ADF Faces Components

This section provides examples of using ADF Faces Components to render pages as different types of links. It contains the following subsections:

- Section 17.7.1.2.1, "Rendering Pages as Links Using af:commandLink"
- Section 17.7.1.2.2, "Rendering Pages as Links Using af:goLink"

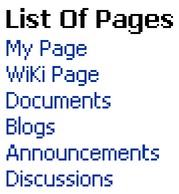
17.7.1.2.1 Rendering Pages as Links Using af:commandLink Example 17–20 illustrates how pages can be rendered as links using `af:commandLink`.

Example 17–20 Rendering Pages as Links Using af:commandLink

```
<af:panelGroupLayout id="pgl1" layout="vertical">
  <af:forEach var="tab" items="#{MyPageServiceBean.pages}">
     <af:commandLink text="#{tab.title}" id="cl1"/>
   </af:forEach>
</af:panelGroupLayout>
```

The output of the code depicted in Example 17–20 renders as a list of links (Figure 17–12).

Figure 17–12 Render Pages as Links



List Of Pages
My Page
WiKi Page
Documents
Blogs
Announcements
Discussions

17.7.1.2.2 Rendering Pages as Links Using af:goLink Example 17–21 illustrates how pages can be rendered as links using `af:goLink`.

Example 17–21 Rendering Pages as Links Using af:goLink

```
<af:panelGroupLayout id="pgl2" layout="vertical">
     <af:activeOutputText value="List Of Pages" id="aot2"
                             inlineStyle="font-weight:bold; font-size:small;"/>
      <af:forEach var="tab" items="#{pageServiceBean.pages}">
         <af:goLink text="#{tab.title}" id="gl1"/>
      </af:forEach>
    </af:panelGroupLayout>
```

The output of the code depicted in Example 17–21 renders as a list of links (Figure 17–12).

17.7.1.3 Rendering Pages as Image Links Using ADF Faces Components

Image links are linked thumbnail views of a page that users click to access the full page view. Example 17–22 illustrates how pages can be rendered as image links.

Example 17–22 Rendering Thumbnail Views of Pages

```
  <af:panelGroupLayout id="pg1_11" layout="scroll">
          <af:panelGroupLayout id="pg11" layout="horizontal" halign="center"
                               valign="middle">
            <h:panelGrid id="ds" columns="4" cellpadding="10" cellspacing="5"
                         style="text-align: center;" rowClasses="bottomAlign">
              <af:forEach varStatus="stat" begin="0"
end="#{MyPageServiceBean.pageCount}">
                <af:panelGroupLayout id="sdsd" layout="vertical"
                                     halign="center">
                  <af:commandImageLink text="" id="cil1"
                                       icon="/<image_name>}"/>
                  <af:activeOutputText value="Page Title" id="aot3"/>
                </af:panelGroupLayout>
              </af:forEach>
            </h:panelGrid>
          </af:panelGroupLayout>
```

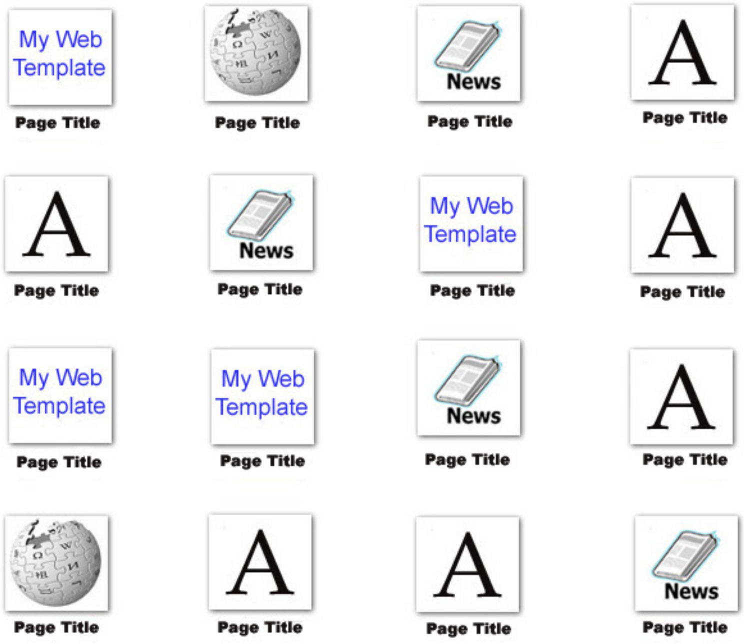
```
        </af:panelGroupLayout>
```

In Example 17–22, `pageCount` is a method from a custom bean (`MyPageServiceBean`) that gets the number of pages in the current scope. Users must write this method on their own using the other methods from page APIs.

In Example 17–22, `<image_name>` is the name of the image with which you associate your page.

The output of the code in Example 17–22 is rendered as a linked series of thumbnail views of a page (Figure 17–13).

Figure 17–13 Render Pages as Image Links



17.7.2 Managing User Security on Pages and Task Flows

You can manage access to pages and task flows either through the Security Panel, which is a part of Composer, or through page APIs.

For more information about runtime security, see the "Setting Page Security" section in *Building Portals with Oracle WebCenter Portal*.

For more information about setting page access with the page APIs, see *Java API Reference for Oracle WebCenter Portal*.

17.8 Advanced Information for Managing Pages

This section describes the APIs and data controls available for working with pages. It contains the following sections:

- Section 17.8.1, "Using the Page Java APIs"
- Section 17.8.2, "Using the Page Data Control"

17.8.1 Using the Page Java APIs

This section provides information about page Java APIs. It includes information about the location of these APIs, how to make your application ready to use them, and how to use them to create pages. It contains the following subsections:

- Section 17.8.1.1, "Configuration Settings Required for Using Page APIs"
- Section 17.8.1.2, "Introduction to the Page APIs"
- Section 17.8.1.3, "How to Set Up Your Application to Use the Page APIs"
- Section 17.8.1.4, "Example: How to Create a Page"

17.8.1.1 Configuration Settings Required for Using Page APIs

To use the page APIs, you must perform the following steps:

1. Confirm that you have the following entries in your `adf-config.xml` file:

```
<namespace path="/oracle/webcenter/page/scopedMD"
metadata-store-usage="WebCenterFileMetadataStore"/>
<namespace path="/pageDefs"
metadata-store-usage="WebCenterFileMetadataStore"/>
<namespace path="/mytemplates"
metadata-store-usage="WebCenterFileMetadataStore"/>
```

   If these entries do not exist in `adf-config.xml`, add them using a text editor.

2. Configure the `.cpx` file to use dynamic page mapping:

```
<Application xmlns="http://xmlns.oracle.com/adfm/application"
             version="11.1.1.51.35" id="DataBindings" SeparateXMLFiles="false"
             Package="view" ClientType="Generic"
             PageMapClass="oracle.jbo.uicli.mom.DynamicPageMapImpl"
             BasePageDefPackageName="pageDefs">
  <definitionFactories>
    <factory nameSpace="http://xmlns.oracle.com/adf/controller/binding"

className="oracle.adf.controller.internal.binding.TaskFlowBindingDefFactoryImpl
"/>
    <dtfactory
className="oracle.adf.controller.internal.dtrt.binding.BindingDTObjectFactory"/
>
  </definitionFactories>
  <pageMap/>
    <page path="/page1.jspx" usageId="view_page1PageDef"/>
  </pageMap>
  <pageDefinitionUsages/>
    <page id="view_page1PageDef" path="view.pageDefs.page1PageDef"/>
  </pageDefinitionUsages>
  <dataControlUsages>
    <dc id="PageServiceDC"
        path="oracle.webcenter.page.internal.model.PageServiceDC"/>
  </dataControlUsages>
</Application>
```

   If these entries do not exist in your `.cpx` file, add them using a text editor.

17.8.1.2 Introduction to the Page APIs

The page APIs are located in the `oracle.webcenter.page.model.PageService` class.

The following APIs are available for pages:

- createPage - see Section 17.8.1.4, "Example: How to Create a Page"
- deletePage
- createTaskflow - see Example 17–23, "Using Page APIs to Create a Task Flow View Page"
- deleteTaskflow
- createScope
- deleteScope
- copyPage
- getPageList - see Example 17–24, "Using Page APIs to Get a List of Pages"
- setPageTitle - see Example 17–25, "Using Page APIs to Set the Page Title"
- changeHiddenStatus
- changePageScheme - see Example 17–26, "Using Page APIs to Set the Page Scheme"
- setPageAccess

For more information about the page APIs, see *Java API Reference for Oracle WebCenter Portal*.

Example 17–23 Using Page APIs to Create a Task Flow View Page

```
PageDef createTaskflow(String nameFormat, String title, String pageTemplate,
  String pageTemplatePath, String cssStyle, String schemeBGImage, String
schemeBGColor)
  throws DuplicateNameException, InvalidNameException, LockUnavailableException;
```

where

- `nameFormat` is the name format of the task flow; it can contain a subpath, such as `users/UserA/taskflow{0}.jspx`.
- `title` is the title of the task flow.
- `pageTemplate` is the template used for the task flow.
- `pageTemplatePath` is the path for the task flow template.
- `cssStyle` is the cascading style sheet file for this task flow.
- `schemeBGImage` is the background image for the custom scheme.
- `schemeBGColor` is the background color for the custom scheme.

It returns the `PageDef` of the newly created task flow and throws the following:

- `InvalidNameException` if the name supplied cannot be used for update.
- `DuplicateNameException` if the page with the same name already exists.
- `LockUnavailableException` if another page or task flow operation is in progress.

Example 17–24 Using Page APIs to Get a List of Pages

```
PageDef getPageList(String path)
```

where

- `path` is the path under which you want to see a list of all page that the user can view. If you do not specify a path, it returns a list of all pages that the user can view in the current scope.

It returns the list of all pages that are not hidden in the current scope or under a specific path.

Example 17–25 Using Page APIs to Set the Page Title

```
setPageTitle(String pagepath, String title)
  throws InvalidNameException, ObjectChangedException, LockUnavailableException,
oracle.webcenter.framework.translations.exception.TranslationsException;
```

where

- `pagepath` is the path of the page for which you want to change the title.
- `title` is the new name of the page.

It updates the name of the page and throws the following:

- `InvalidNameException` if the name supplied cannot be used for update.
- `ObjectChangedException` if the page has changed since it was last retrieved.
- `LockUnavailableException` if another page operation is in progress.

Example 17–26 Using Page APIs to Set the Page Scheme

```
setPageScheme(String pagepath, String schemeName, String schemeBGImage, String
schemeBGColor, String otherCSS)
```

where

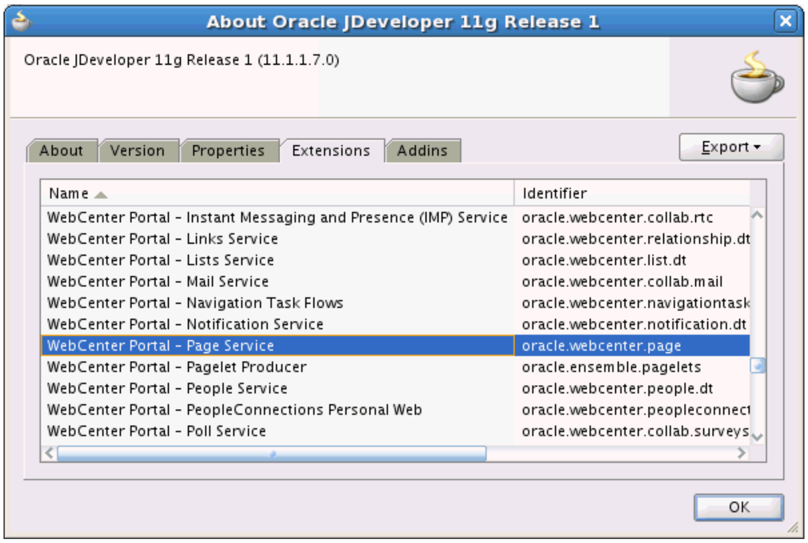
- `pagepath` is the path of the page for which you want to change the scheme.
- `schemeName` is the name of the CSS for the page.
- `schemeBGImage` is the background image for the custom scheme.
- `schemeBGColor` is the background color for the custom scheme.
- `otherCSS` refers to any other CSS attributes you want to specify.

It updates the page's scheme properties in the JSPX page.

17.8.1.3 How to Set Up Your Application to Use the Page APIs

To use the page APIs, Oracle WebCenter Portal's page extension must be present in your JDeveloper application. In JDeveloper, go to the **Help - About** menu, and click the **Extensions** tab. Look for the WebCenter Portal - Page Service, as shown in Figure 17–14.

Figure 17–14 JDeveloper Extensions



Oracle JDeveloper 11g Release 1 (11.1.1.7.0)

Name	Identifier
WebCenter Portal - Instant Messaging and Presence (IMP) Service	oracle.webcenter.collab.rtc
WebCenter Portal - Links Service	oracle.webcenter.relationship.dt
WebCenter Portal - Lists Service	oracle.webcenter.list.dt
WebCenter Portal - Mail Service	oracle.webcenter.collab.mail
WebCenter Portal - Navigation Task Flows	oracle.webcenter.navigationtask
WebCenter Portal - Notification Service	oracle.webcenter.notification.dt
WebCenter Portal - Page Service	oracle.webcenter.page
WebCenter Portal - Pagelet Producer	oracle.ensemble.pagelets
WebCenter Portal - People Service	oracle.webcenter.people.dt
WebCenter Portal - PeopleConnections Personal Web	oracle.webcenter.peopleconnect
WebCenter Portal - Poll Service	oracle.webcenter.collab.surveys

---

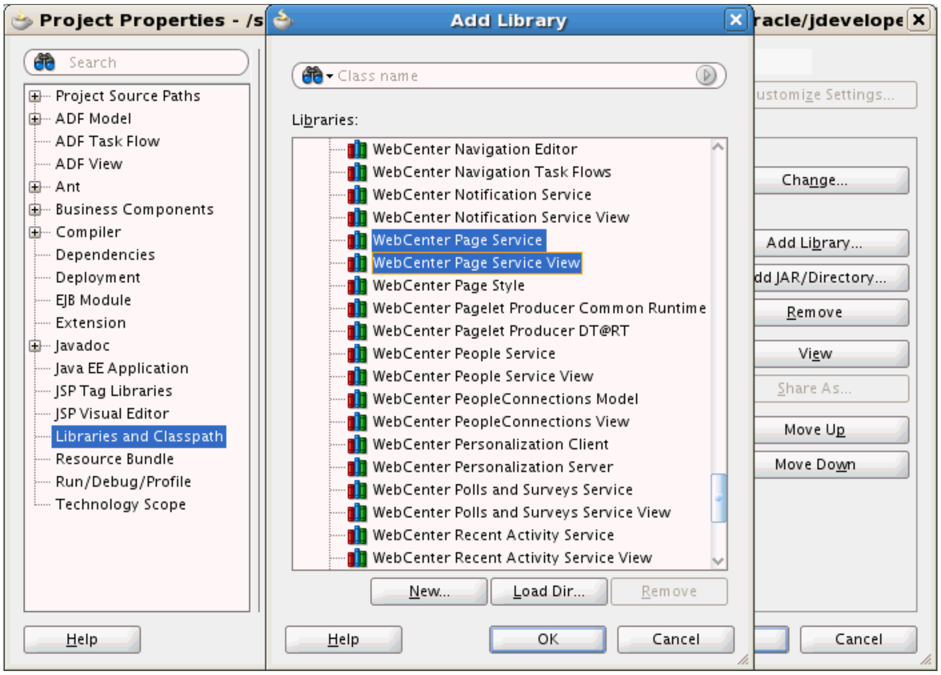
Note: For information about adding Oracle WebCenter Portal's extensions, see Chapter 2, "Setting Up Your Development Environment."

After confirming that WebCenter Portal - Page Service is included with Oracle WebCenter Portal's extensions, you must add the page libraries to the project.

To add page libraries to your project:

1. Right-click the **Portal** project and select **Project Properties** and then **Libraries and Classpath**.
2. Click **Add Library**.
3. Select the **WebCenter Page Service** and **WebCenter Page Service View** libraries, as shown in Figure 17–15.

Figure 17–15 Adding Page Libraries



4. Click **OK**.

If you do not want to use JDeveloper as the code editor, then you can set `CLASSPATH` to the following jar files:

- `Jdev_Home/jdeveloper/webcenter/jlib/pagem.jar`
- `Jdev_Home/jdeveloper/webcenter/jlib/pages.jar`
- `Jdev_Home/jdeveloper/webcenter/jlib/page-service-view.jar`
- `Jdev_Home/jdeveloper/webcenter/jlib/page-service-skin.jar`

17.8.1.4 Example: How to Create a Page

This section provides an example of how to create a page using the page APIs. Your requirements may call for different methods. Use the way the `createPage` method is invoked in this sample code as a model for invoking the methods you require on the `PageService` object.

Typically, pages created using page APIs are based on templates. Before you start creating pages using the APIs, you must ensure that each template file, for example `MyPageTemplate1.jspx`, has a page definition file, in this case `MyPageTemplate1PageDef.xml`, in the same directory as the JSPX page.

Example 17–27 shows how to use the `createPage() API` to create a scope named `MyScope`, create an MDS session instance, instantiate the page class with this new scope, and then create a page within this scope. The new page is created based on the `MyPageTemplate1.jspx` template.

Example 17–27 Sample Showing How to Create a Page

```
...

public void createMyPage
{
    try
    {
      MDSSession mdsSess =
(MDSSession)ADFContext.getCurrent().getMDSSessionAsObject();
      PageServiceConfig config = new PageServiceConfig(mdsSess, "defaultScope");
      mPageService = PageServiceFactory.createInstance(config);

      String pageNameFormat ="Page{0}.jspx";
      String pageTitle ="New Page";

      //
      // The template used to create the new page is
/mytemplates/MyPageTemplate1.jspx
      // path "/mytemplates" should be defined as a MDS namespace.
      // Also MyPageTemplate1.jspx should have a pageDef called
"MyPageTemplate1PageDef.xml and
      // it has the same path as the jspx file.

      PageDef newPage = mPageService.createPage(
        "personaluserpage", pageNameFormat, pageTitle,
        "MyPageTemplate1.jspx",
        "/mytemplates/",
        null, null, null);

    }
    catch(Exception e)
    {
      // Handle exception
    }
}

...
```

> **Note:** Pages and task flows created using page APIs do not have permissions granted by default. You must explicitly define permissions on the page.

For more information about the page APIs, see *Java API Reference for Oracle WebCenter Portal*.

17.8.2 Using the Page Data Control

The page data control enables you to view information about existing pages at runtime and delete any of the listed pages.

This section describes how to add a Page data control to a project and how to use it to view, edit, and delete pages. It contains the following subsections:

- Section 17.8.2.1, "How to Add the Page Data Control"
- Section 17.8.2.2, "How to View, Edit, and Delete Pages at Runtime"

17.8.2.1 How to Add the Page Data Control

This section provides an example of adding the Page data control at design time.

To add a Page data control to your project:

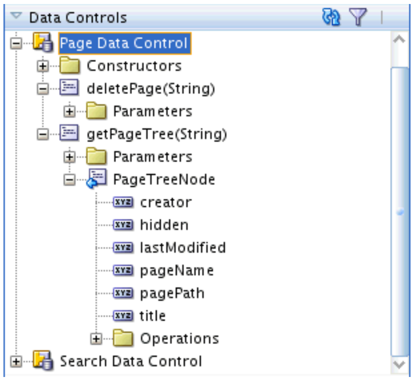
1. Ensure that Page Data Control is visible in the Data Controls panel of the Application Navigator.

The Page Data Control appears in the Application Navigator after you have performed either of the following actions:

- Added the **Page - Create New** task flow to your project (see Section 17.2.1.1, "How to Add the Page - Create New Task Flow").
- Added the **Page Data Control** as described in Section 4.1.3, "Using WebCenter Portal Data Controls.".

2. In the Data Controls panel of the Application Navigator, expand **Page Data Control**, as shown in Figure 17–16.

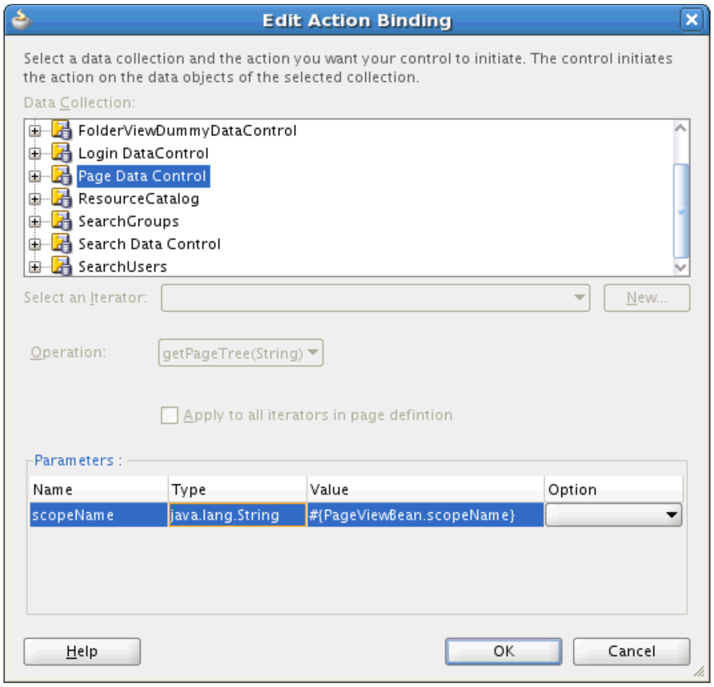
Figure 17–16 Page Data Control



3. Under **getPageTree()**, drag **PageTreeNode** and drop it on the page.
4. From the **Create** menu, select **Table**, and then select **ADF Read-only Table**.
5. In the Edit Table Columns dialog, click **OK**.
6. In the Edit Action Binding dialog, enter the `scopeName` parameter to view all the pages listed under the specified scope. Click **OK**.

   If you do not enter any value, the data control takes the default scope. In Figure 17–17, the scope value is fetched from a custom managed bean.

Figure 17–17 scopeName Parameter



Edit Action Binding

Select a data collection and the action you want your control to initiate. The control initiates the action on the data objects of the selected collection.

Data Collection:

- FolderViewDummyDataControl
- Login DataControl
- Page Data Control
- ResourceCatalog
- SearchGroups
- Search Data Control
- SearchUsers

Select an Iterator: New...

Operation: getPageTree(String)

□ Apply to all iterators in page defintion

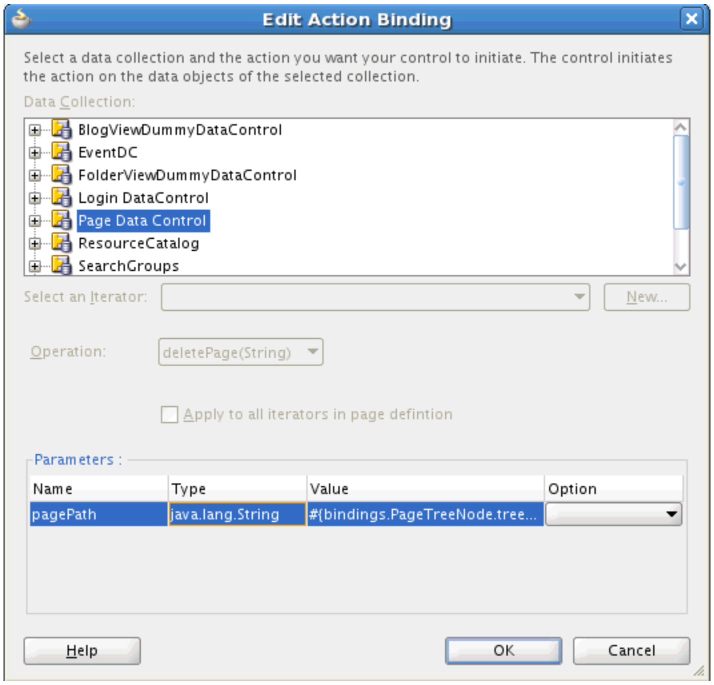
Parameters :

Name	Type	Value	Option
scopeName	java.lang.String	#{PageViewBean.scopeName}	

7. Add a new column to the table you created in step 4.
8. To add a column for deleting pages at runtime, drag the **deletePage(string)** method and drop it in the new column.
9. From the **Create** menu, select **Method**, and then select **ADF Link**.
10. In the Parameters section of the Edit Action Binding dialog, shown in Figure 17–18, specify the following value for the `pagePath` parameter:

```
#{bindings.PageTreeNode.treeModel.rowData.pagePath}
```

Figure 17–18 Edit Action Binding Dialog



Edit Action Binding

Select a data collection and the action you want your control to initiate. The control initiates the action on the data objects of the selected collection.

Data Collection:

- BlogViewDummyDataControl
- EventDC
- FolderViewDummyDataControl
- Login DataControl
- Page Data Control
- ResourceCatalog
- SearchGroups

Select an Iterator:

Operation: deletePage(String)

☐ Apply to all iterators in page defintion

Parameters :

Name	Type	Value	Option
pagePath	java.lang.String	#{bindings.PageTreeNode.tree...	

11. Click **OK**.
12. From the Data Controls panel, expand **Page Data Control**, **getPageTree()**, **PageTreeNode**, and then **Operations**.
13. Drag **Execute** and drop it on the page as an **ADF Button**.
14. In the Property Inspector, set the button's `Text` attribute to `Refresh`.

    This provides a refresh feature on the list of pages to enable users to refresh the list after they have added a page or deleted one from the list.

15. Optionally, to display pages as links that invoke page Edit mode, view the page source and replace the `outputText` element in the table's page path column with a `goLink` as follows:

    Replace

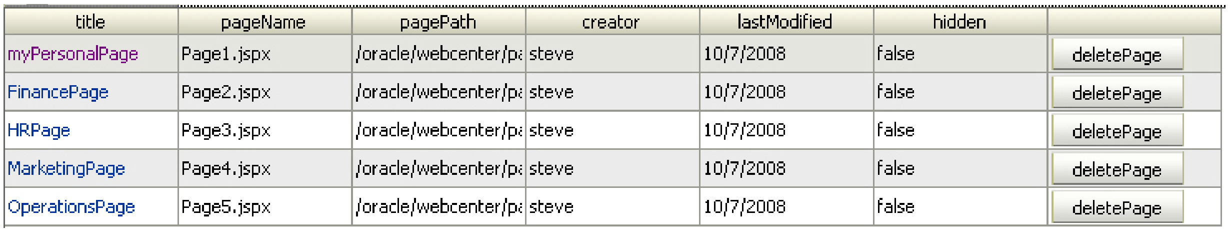
    ```
    <af:outputText value="#{row.pagePath}"/>
    ```

    with

    ```
    <af:goLink destination="/faces#{row.pagePath}" text="#{row.title}"
    targetFrame="_top"/>
    ```

16. Save your page, and run it to your browser.
17. The created data control table should look something like Figure 17–19.

Figure 17–19 Sample Data Control Table



title	pageName	pagePath	creator	lastModified	hidden	
myPersonalPage	Page1.jspx	/oracle/webcenter/pa	steve	10/7/2008	false	deletePage
FinancePage	Page2.jspx	/oracle/webcenter/pa	steve	10/7/2008	false	deletePage
HRPage	Page3.jspx	/oracle/webcenter/pa	steve	10/7/2008	false	deletePage
MarketingPage	Page4.jspx	/oracle/webcenter/pa	steve	10/7/2008	false	deletePage
OperationsPage	Page5.jspx	/oracle/webcenter/pa	steve	10/7/2008	false	deletePage

17.8.2.2 How to View, Edit, and Delete Pages at Runtime

To view a page at runtime, follow the link generated from step 16 in Section 17.2.1.1, "How to Add the Page - Create New Task Flow." If the application has been secured properly, then an edit link should render on the page at runtime.

To delete a page, click the **deletePage** button in the row of the relevant page. This button was generated from step 8 in Section 17.2.1.1, "How to Add the Page - Create New Task Flow." Click the Refresh button for the table to remove the deleted page row from the table.

For detailed information about how to view, edit, and delete pages at runtime, see the "Working with Portal Pages" part in *Building Portals with Oracle WebCenter Portal*.

18 Enabling Runtime Editing of Pages Using Composer

This chapter describes how to add Composer components to your Portal Framework application pages to enable runtime editing of the pages.

This chapter contains the following topics:

- Section 18.1, "Designing Editable Pages Using Composer Components"
- Section 18.2, "Designing Editable Pages Using Composer Components: Example"
- Section 18.3, "Populating Pages with Content"
- Section 18.4, "Troubleshooting Composer Problems"

18.1 Designing Editable Pages Using Composer Components

The Composer tag library provides design-time components that you can add to a page in Oracle JDeveloper to enable page editing at runtime. When you create a page with Composer components at design time, at runtime Composer provides options for entering page edit mode and modifying the page according to your requirements.

You can enable customizations in Portal Framework applications and non-Portal Framework applications. Within an application, you can enable customization of the following types of pages:

- A regular JSPX page, not based on a page template
- A JSPX template page
- A JSPX page based on a page template

For more information about Composer components and their attributes, see Section 16.7, "Composer Components."

This section explains how to add Composer components to a page at design time to make it editable at runtime. It contains the following subsections:

- Section 18.1.1, "How to Create a Customizable Page"
- Section 18.1.2, "How to Enable Runtime Customization Using a Page Customizable Component"
- Section 18.1.3, "How to Enable Switching Between Page Modes Using a Change Mode Link or Change Mode Button"
- Section 18.1.4, "How to Define Editable Areas of a Page Using Panel Customizable Components"

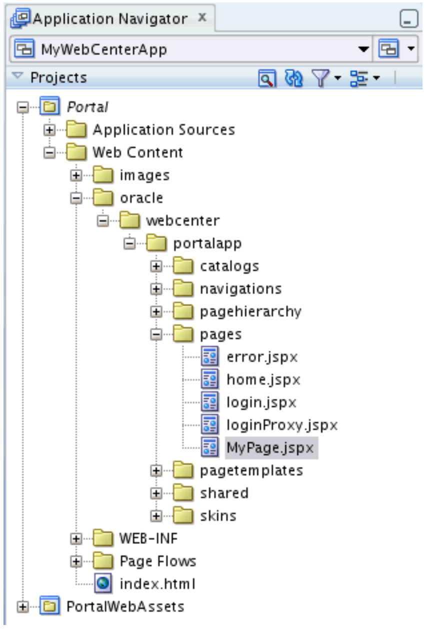
- Section 18.1.5, "How to Enable Layout Customization for a Page Using a Layout Customizable Component"
- Section 18.1.6, "How to Enable Component Customization Using Show Detail Frame Components"
- Section 18.1.7, "How to Create a Page Template for Creating Customizable Pages"
- Section 18.1.8, "How to Enable Customization in a Populated Page"
- Section 18.1.9, "What Happens When You Add Composer Components"
- Section 18.1.10, "What Happens at Runtime"
- Section 18.1.11, "What You May Need to Know When Designing Editable Pages"

18.1.1 How to Create a Customizable Page

For information about creating a customizable JSPX page in your Portal Framework application, see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."

When you create a new page in JDeveloper, it is listed in the Application Navigator under **Web Content** as shown in Figure 18–1. Additionally, the page is opened in the editor and becomes the active editor panel.

Figure 18–1 A Customizable JSPX Page in the Application Navigator



Security Considerations

By default, a Portal Framework application is configured with ADF security. A default user name and password (weblogic/weblogic1) are created automatically for you.

To enable users to edit a page in a secured application, you must grant Edit or Customize privileges on the page to the required users or roles. For more information about granting permissions, see Section 74.4, "Using the Role Manager Task Flow."

If ADF security is not enabled in your application, you can test how user privileges impact runtime customization capabilities by implementing security and configuring your application to authenticate users so that they have distinct identities. For the steps to implement a basic security model in your application, see Section 74.3, "Configuring ADF Security."

18.1.2 How to Enable Runtime Customization Using a Page Customizable Component

Adding a `Page Customizable` component to the page ensures that Composer is invoked when users switch to Edit mode of the page. When you add a `Page Customizable` component, some configuration files are updated automatically with the default Composer-specific settings. For more information, see Section 18.1.9, "What Happens When You Add Composer Components."

> **Note:** For considerations you must make before adding `Page Customizable` to a page, see Section 18.1.11, "What You May Need to Know When Designing Editable Pages."

To add a Page Customizable component to a page:

1. Open a customizable JSPX page.
2. In the Component Palette, select **ADF Faces** from the drop-down list and drag the **Panel Stretch Layout** component onto the page.

   > **Notes:** The `Panel Stretch Layout` component stretches the child in the `center` facet to fill all of the available space. This holds true when users resize the browser.

3. In the Component Palette, select **Composer** from the drop-down list.
4. Add a **Page Customizable** component to the `center` facet of `Panel Stretch Layout`.

   You must ensure that `Page Customizable` is nested inside an `af:form` element. `Page Customizable` is a rich client component that requires the rich client framework to function properly.

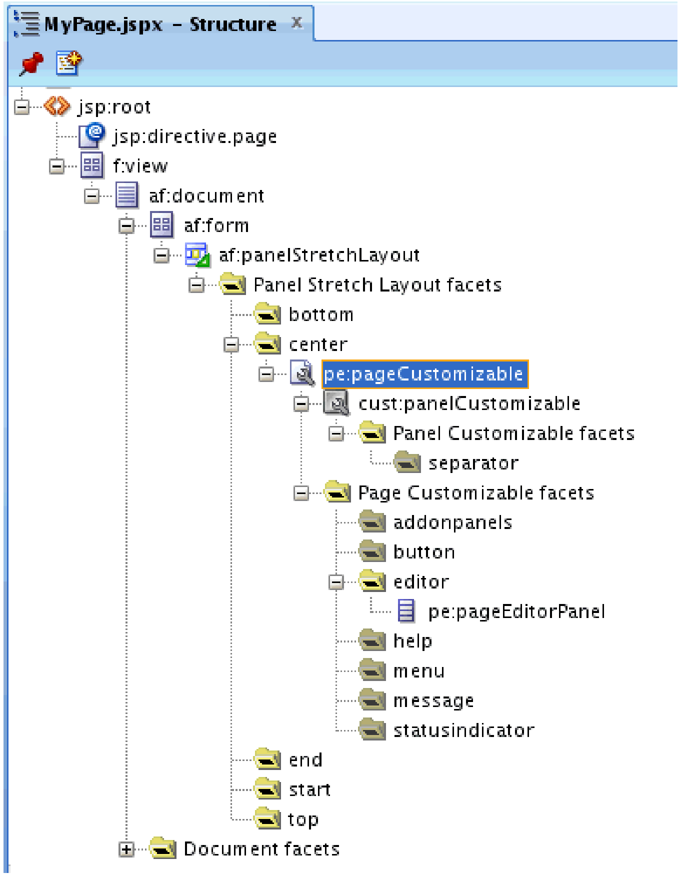
5. The required attributes for a `Page Customizable` component are populated with default values when you add the component to the page.

   For information about defining or modifying attribute values , see Section B.1.1, "Page Customizable Component."

6. Save the page.

   Under the `Page Customizable` component, by default, a `Panel Customizable` component is added as a child component and `Page Editor Panel` and various other facets are added, as shown in Figure 18–2.

Figure 18–2 Page Customizable Component



Example 18–1 shows the `pe:pageCustomizable` tag in the page source view.

Example 18–1 Page Customizable Component in the Page Source View

```
<pe:pageCustomizable id="pageCustomizable1"
  <cust:panelCustomizable id="panelcustomizable1"
                          layout="scroll"/>
  <f:facet name="editor">
    <pe:pageEditor id="pep1"/>
  </f:facet>
</pe:pageCustomizable>
```

18.1.3 How to Enable Switching Between Page Modes Using a Change Mode Link or Change Mode Button

To enable users to switch to Edit mode of a page easily, you must add a `Change Mode Link` or `Change Mode Button` component to the page.

Note: An alternative way to enable switching to Edit mode is by using the Change Mode API. For more information about this API, see *Java API Reference for Oracle WebCenter Portal*.

For things you should consider before adding a `Page Customizable` component to a page, see Section 18.1.11, "What You May Need to Know When Designing Editable Pages."

To add a Change Mode Link or Change Mode Button component:

1. From the Component Palette, select **Composer**.
2. In the Structure window, within the `top` facet of the `Panel Stretch Layout` that you added in the previous section, drag a **Change Mode Link** or **Change Mode Button** component from the Component Palette.

   You must ensure that `Change Mode Link` or `Change Mode Button` is nested in an `af:form` element. The `Change Mode Link` or `Change Mode Button` component is a rich client component that requires the rich client framework to function properly.

   Notes:

   - If you have not used `Panel Stretch Layout` on your page, then add the `Change Mode Link` or `Change Mode Button` component above the `Page Customizable` component in the Structure window. This ensures that `Change Mode Link` or `Change Mode Button` is displayed properly at runtime.
   - Use a `Change Mode Link` or `Change Mode Button` only when you have a `Page Customizable` on the page. You may have problems running a page that contains `Change Mode Link` or `Change Mode Button` but no `Page Customizable` component.

3. The required attributes for a `Change Mode Link` or `Change Mode Button` component are set by default when you add the component to the page.

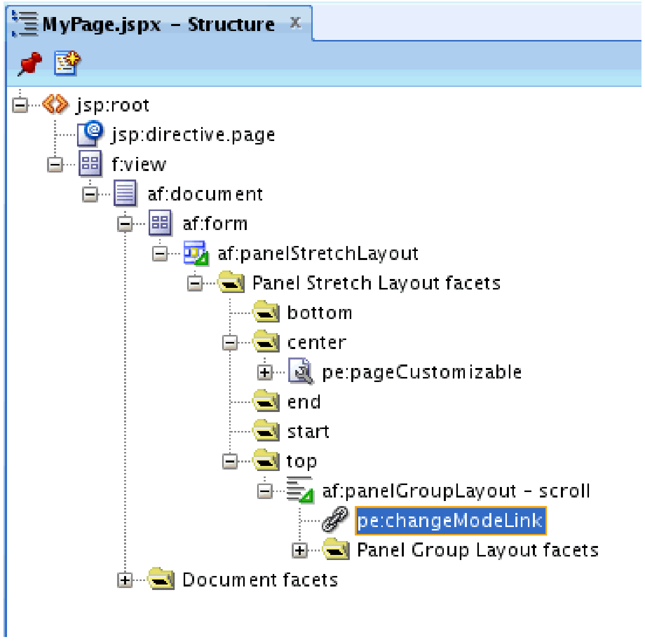
   Optionally, you can set any other attributes by referring to Table B–2 in Section B.1, "Composer Component Properties."

   Note: In a secured application, it is recommended that you check all users' privileges and enable the Edit link or button on the page only for privileged users. Unauthenticated users who stumble into page Edit mode can change component properties, though the changes will not be saved.

   You can enable the Edit link or button for selected users by specifying an EL value for the `rendered` attribute on the `Change Mode Link` or `Change Mode Button` component. For more information, see Section B.1.2, "Change Mode Link and Change Mode Button."

   The `pe:changeModeLink` or `pe:changeModeButton` tag displays within the `af:form` tag in the Structure window, as shown in Figure 18–3.

Figure 18–3 Change Mode Link

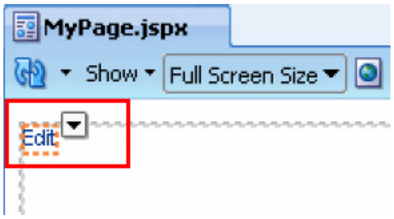


MyPage.jspx – Structure

```
jsp:root
    jsp:directive.page
    f:view
        af:document
            af:form
                af:panelStretchLayout
                    Panel Stretch Layout facets
                        bottom
                        center
                            pe:pageCustomizable
                        end
                        start
                        top
                            af:panelGroupLayout - scroll
                                pe:changeModeLink
                                Panel Group Layout facets
            Document facets
```

Figure 18–4 shows the `Change Mode Link` in the Design view of the page in JDeveloper.

Figure 18–4 Change Mode Link in Design View



18.1.4 How to Define Editable Areas of a Page Using Panel Customizable Components

The `Panel Customizable` component is required for page composition or content management tasks, such as adding, arranging, or removing portlets or regions. By default, one `Panel Customizable` component is automatically added as a direct child of the `Page Customizable` component. You can add more `Panel Customizable` components within this `Panel Customizable` component according to your requirements.

It is only within a `Panel Customizable` component that you can drag and drop components at runtime.

Note: For considerations you must make before adding `Page Customizable` to a page, see Section 18.1.11, "What You May Need to Know When Designing Editable Pages."

To add a `Panel Customizable` component to the page:

1. From the Component Palette, select **Composer** from the drop-down list.

2. Drag a **Panel Customizable** component from the Component Palette to the Structure window and drop it at any suitable location within the form.

   You must ensure that Panel Customizable is nested in an af:form element. The Panel Customizable component is a rich client component that requires the rich client framework to function properly.

   Notes:

   - A Page Customizable component contains one direct child Panel Customizable component by default. Do not add another Panel Customizable as a direct child component of the Page Customizable. If the Page Customizable has multiple child components, only the first child component is picked up while running the page.
   - Ensure that you do not delete the root Panel Customizable component on the page, because at runtime you can drop components *only* inside a Panel Customizable component.

3. The required attributes for a Panel Customizable component are set by default when you add the component to the page.

   Optionally, you can set any other attributes by referring to Table B–6 in Section B.1, "Composer Component Properties."

   Notes: If you select the stretch layout for the Panel Customizable, then the first child component is stretched to fill up available space in the Panel Customizable component. Any other child components are ignored, though they are not removed from the page.

18.1.5 How to Enable Layout Customization for a Page Using a Layout Customizable Component

Use the Layout Customizable component to enable the runtime definition or modification of the layout of components on a page or an area of a page. Use this component only if you want to allow users to customize the layout at runtime. For static layouts, use an alternative component, such as a Panel Group Layout or Panel Stretch Layout.

To add a Layout Customizable component:

1. From the Component Palette, select **Composer** from the drop-down list.
2. Drag a **Layout Customizable** component to the Structure window and drop it inside the Panel Customizable component.

   The target Panel Customizable component must be a child of the Page Customizable component.

   Ensure that Layout Customizable is nested in an af:form element. The Layout Customizable component is a rich client component and requires the rich client framework to function properly.

Note: You can delete the direct child Panel Customizable in the Page Customizable and add the Layout Customizable as a direct child of the Page Customizable. However, you must ensure that the Page Customizable has only one direct child component.

3. The required attributes for a Layout Customizable component are set by default when you add the component to the page.

   Optionally, you can set any other attributes by referring to Table B–3 in Section B.1, "Composer Component Properties."

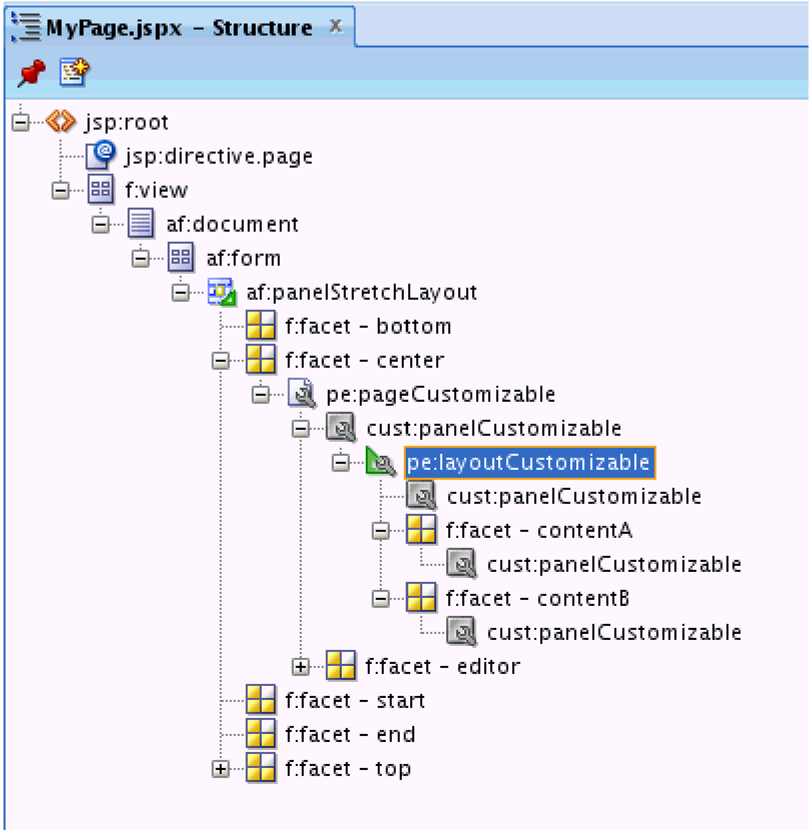
Note: To ensure that the Layout Customizable component is clearly visible on the page at runtime, provide a descriptive label for the component by using the Text attribute.

The pe:layoutCustomizable tag is located inside a cust:panelCustomizable tag in the Structure window as shown in Figure 18–5. A child Panel Customizable component is added by default in the Layout Customizable component. Additionally, a Panel Customizable component is added within each facet of the Layout Customizable component. These Panel Customizable components enable you to add content inside the Layout Customizable component at runtime.

The Panel Customizable added as a direct child provides the main area—the central area in a layout at runtime. The Panel Customizable components added within the two default Layout Customizable facets provide the two content areas, A and B. When you select a predefined layout at runtime, these three areas are arranged to display content in the selected pattern. See Predefined Layout Types for more information about how the content is laid out for each layout type.

Note: In a oneColumn layout, A and B are rendered only if the Panel Customizable component contain child components.

Figure 18–5 Layout Customizable Component



```
MyPage.jspx – Structure
jsp:root
    jsp:directive.page
    f:view
        af:document
            af:form
                af:panelStretchLayout
                    f:facet - bottom
                    f:facet - center
                        pe:pageCustomizable
                            cust:panelCustomizable
                                pe:layoutCustomizable
                                    cust:panelCustomizable
                                    f:facet - contentA
                                        cust:panelCustomizable
                                    f:facet - contentB
                                        cust:panelCustomizable
                            f:facet - editor
                    f:facet - start
                    f:facet - end
                    f:facet - top
```

18.1.6 How to Enable Component Customization Using Show Detail Frame Components

When you want to enable customizations such as property editing, moving, minimizing, or removing components, you can drop a `Show Detail Frame` component inside a `Panel Customizable` component on the page. You can then add a component inside the `Show Detail Frame`.

Note: Each `Show Detail Frame` component should have only one direct child component. If you add multiple child components, then only the first one is rendered. The other direct child components are not rendered at design time or runtime.

If multiple components must be enclosed in a `Show Detail Frame`, then add a grouping component like `Panel Group Layout` or `Panel Customizable` to the `Show Detail Frame` component and then include the ADF Faces components or other content within this grouping component.

Use the `Show Detail Frame` component to enable customizations in View and Edit modes of the page. Changes made in View mode are available to that user only, and changes made in Edit mode are available to all application users.

To add a Show Detail Frame component to the page:

1. From the Component Palette, select **Composer**.

2. Drag a **Show Detail Frame** component to the Structure window and drop it inside a `Panel Customizable` component.

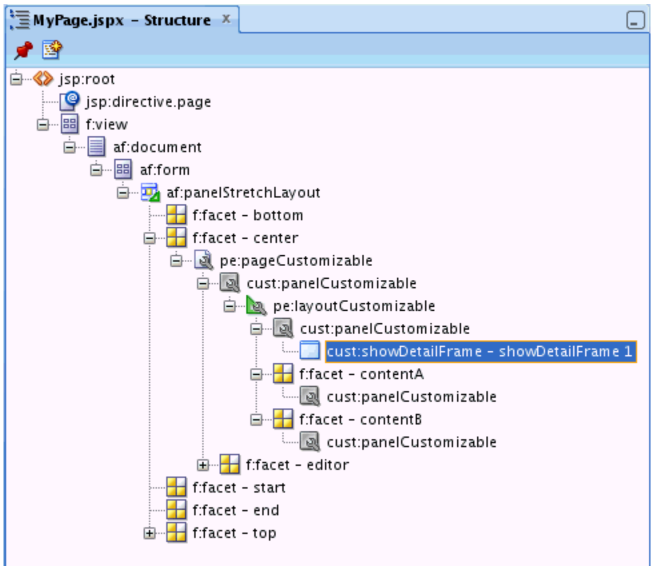
   The `Show Detail Frame` component should be nested in a `Panel Customizable` component on the page.

3. The required attributes for a `Show Detail Frame` component are set by default when you add the component to the page.

   Optionally, you can set any other attributes by referring to Table B–7 in Section B.1, "Composer Component Properties."

   The `cust:showDetailFrame` tag is added inside the `cust:panelCustomizable` tag as show in Figure 18–6.

Figure 18–6 Show Detail Frame Component



```
MyPage.jspx - Structure
jsp:root
  jsp:directive.page
  f:view
    af:document
      af:form
        af:panelStretchLayout
          f:facet - bottom
          f:facet - center
            pe:pageCustomizable
              cust:panelCustomizable
                pe:layoutCustomizable
                  cust:panelCustomizable
                    cust:showDetailFrame - showDetailFrame 1
                  f:facet - contentA
                    cust:panelCustomizable
                  f:facet - contentB
                    cust:panelCustomizable
              f:facet - editor
          f:facet - start
          f:facet - end
          f:facet - top
```

For a better understanding of this type of task, see Section 18.2, "Designing Editable Pages Using Composer Components: Example."

18.1.7 How to Create a Page Template for Creating Customizable Pages

If you plan to create many customizable pages in your application, you can base the pages on an ADF page template in which you have enabled customization. By adding Composer components to the template itself, you can save the effort required to add these components to each customizable page.

To create a page template and enable customization on it:

1. In the Application Navigator in JDeveloper, go to the Portal project of the application in which you want to create the template, right-click the **Portal** project, and choose **New**.
2. In the New Gallery, expand **Web Tier,** select **JSF** and then **JSF Page Template**, and click **OK.**
3. In the Create JSF Page Template dialog, enter a file name for the template, select a layout, and declare a new facet.
4. Click **OK**.

5. In the template, from the Composer tag library, add a **Change Mode Link** or **Change Mode Button** component above the `Panel Stretch Layout` component.

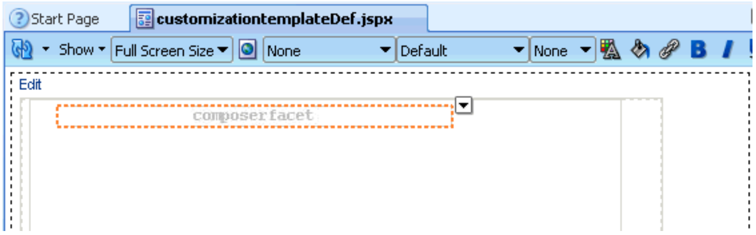
6. Add a **Page Customizable** component within the `center` facet of the `Panel Stretch Layout` component.

7. Delete the child `Panel Customizable` component from `Page Customizable` and add a `Panel Group Layout` component in its place.

8. Set the `layout` attribute on the `Panel Group Layout` to `scroll`.

9. Add a `Facet Ref` component inside the `Panel Group Layout` and specify the same name that you used to declare the facet in step 3. The template displays the facet as shown in Figure 18–7.

Figure 18–7 New Page Template File



10. Save the template file.

You can now create customizable pages based on this template. Once you create a page, you can add a `Panel Customizable` or `Layout Customizable` component inside the facet displayed on the new page. You can then add page content within the `Panel Customizable` or `Layout Customizable` component.

18.1.8 How to Enable Customization in a Populated Page

When you have an existing ADF application with JSPX pages that are populated with content, and you want to enable customization, you can do so by moving all content inside a `Page Customizable` component.

You must first add the `Page Customizable`, then a `Layout Customizable`, and then the required hierarchy of `Panel Customizable` and `Show Detail Frame` components. Drag each of the existing components and drop them onto suitable locations inside the `Page Customizable`.

Notes:

- Ensure that the `Page Customizable` component has only one direct child component.

  When you add multiple direct child components, only the first child component is rendered at runtime. The first child component is stretched to fit the page. All other direct child components are ignored and not rendered on the page.

- Use a `Layout Customizable` component only if you want to allow users to customize the layout at runtime. For static layouts, use an alternative component, such as a `Panel Group Layout` or `Panel Stretch Layout` component.
- For best results, move components using the Structure window and *not* by editing the source code.

18.1.9 What Happens When You Add Composer Components

When you add a `Page Customizable` component to the page, the following configurations are performed automatically:

- A default resource catalog definition file, `default-catalog.xml`, is configured in the application. The `default-catalog.xml` file is located in the *`Application_Root`*`/Portal/src/portal` directory. To add components to the default resource catalog available to end users of your application, see Chapter 14, "Developing Resource Catalogs."

  In a Portal Framework application, the `default-catalog.xml` file is located in the *`Application_Root`*`/Portal/public_html/oracle/webcenter/portalapp/catalogs` directory out-of-the-box, even without creating a page and adding a `Page Customizable` component.

- A resource catalog Viewer is configured for the application. At runtime, Composer provides users the option to add resources from this viewer to the page.
- The `web.xml` file available in the *`Application_Root`*`/`*`Project_Name`*`/public_html/WEB-INF` directory is updated to configure the MDS JSP provider.
- The `ComposerChangeManager` is configured in the application's `web.xml` file. For more information, see Section 20.11, "Configuring the Persistence Change Manager."
- When you create an application, a minimal `adf-config.xml` file is also created. When you add a `Page Customizable` component to an application page, the required configuration is added to the `adf-config.xml` file. For example, change persistence is configured in the `adf-faces-config` section in this file. For more information, see Section 20.11, "Configuring the Persistence Change Manager."
- The `DataBindings.cpx` file in the *`Application_Root`*`/Portal/adfmsrc/portal` directory is updated to enable the presence of task flows on the page.
- The page definition file is updated with the binding for the Composer task flow, which is available as part of the Oracle WebCenter Portal extension JAR file. Example 18–2 shows the code in the page definition file after a `Page Customizable` component is added to an application page.

Example 18–2 Page Definition File After Adding Page Customizable Component

```
<?xml version="1.0" encoding="UTF-8" ?>
```

```
<pageDefinition xmlns="http://xmlns.oracle.com/adfm/uimodel"
                version="11.1.1.57.95" id="rcpagePageDef"
                Package="portal.pageDefs">
  <parameters/>
  <executables>
    <variableIterator id="variables"/>
    <taskFlow id="pageeditorpanel"
              taskFlowId="#{pageEditorBean.pageEditorPanel}"
              xmlns="http://xmlns.oracle.com/adf/controller/binding"/>
  </executables>
  <bindings/>
</pageDefinition>
```

See Also: Section B.2, "Composer-Specific Files and Configurations" for information about files that are created or modified when you add Composer components.

18.1.10 What Happens at Runtime

At runtime, users can perform all the tasks described in Section 16.4, "Customizing Capabilities in Page View Mode" and Section 16.5, "Editing Capabilities in Design View and Add Content View in Page Edit Mode."

Each Composer component provides runtime capabilities that are described in Section 16.7, "Composer Components."

Note: Runtime customizations that you perform on a page are not carried over when you deploy the application to a target server.

18.1.11 What You May Need to Know When Designing Editable Pages

When adding Composer components to your customizable page, consider the following:

- To enable users to edit a page in a secured application, you must explicitly grant Edit or Customize privileges on the page to the required users or roles. For more information about granting permissions, see Section 74.4, "Using the Role Manager Task Flow."
- To enable runtime customization of components, add only one `Page Customizable` component to a page.

Note: Do *not* add a second `Page Customizable` component to your page. Only the first `Page Customizable` component is picked up when you run the page.

- Ensure that the `Page Customizable` component has only one direct child component.

  When you add multiple direct child components, only the first one is rendered at runtime. The first child component is stretched to fit the page. All other direct child components are ignored.
- Place all components you want to be customizable within the `Page Customizable` component.

- To enable runtime editing, you *must* ensure that the ID attribute is defined on all components on the page. Runtime editing of components that have no ID value is not supported in Composer.

  If your page includes components with no ID value, then you may encounter problems while editing the page in Composer.
- To enable View mode user customization, place a Show Detail Frame component within a Panel Customizable component.
- Use a Show Detail Frame to enclose a single child only. If you must enclose multiple components in a Show Detail Frame, then place a grouping component, such as a Panel Group Layout or Panel Customizable, within the Show Detail Frame component and then place the ADF Faces components or other content within this grouping component.
- Portlets need not be placed within Show Detail Frame components. Portlets come equipped with a header and display options that are similar to Show Detail Frame components.

18.2 Designing Editable Pages Using Composer Components: Example

In this example, assume you want to create a page that is customizable at runtime. The page is named MyPage.jspx in a Portal Framework application named MyWebCenterApp.

To create a customizable page:

1. Create a Portal Framework application named MyWebCenterApp by performing the steps in Chapter 6, "Creating WebCenter Portal Framework Applications."
2. Create a JSPX page named MyPage.jspx by performing the steps described in Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."
3. Add a Panel Stretch Layout from the ADF Faces tag library to MyPage.jspx.

   Note: The Panel Stretch Layout component stretches the child in the center facet to fill all the available space in the browser. This is true even if you resize the browser. Therefore, by placing your components within this child component, you can ensure that the customizable portion of your page occupies the complete browser area.

4. Add Page Customizable from the Composer tag library to the center facet by following the steps in Section 18.1.2, "How to Enable Runtime Customization Using a Page Customizable Component."
5. Set the border color of Page Customizable to blue to differentiate the editable area from other noneditable areas.

   Under the Style category in the Property Inspector for Page Customizable, click the Box tab and set the Border Color attribute to Blue.
6. Set the border color of child Panel Customizable to red.

   Under the Style category in the Property Inspector for Panel Customizable, click the Box tab and set the Border Color attribute to Red.
7. Add a Change Mode Link component to the top facet of the Panel Stretch Layout by performing the steps in Section 18.1.3, "How to Enable Switching Between Page Modes Using a Change Mode Link or Change Mode Button."

8. In the center facet, in the `Panel Customizable` that is a direct child of the `Page Customizable`, add a `Layout Customizable` component by following the steps in Section 18.1.5, "How to Enable Layout Customization for a Page Using a Layout Customizable Component."

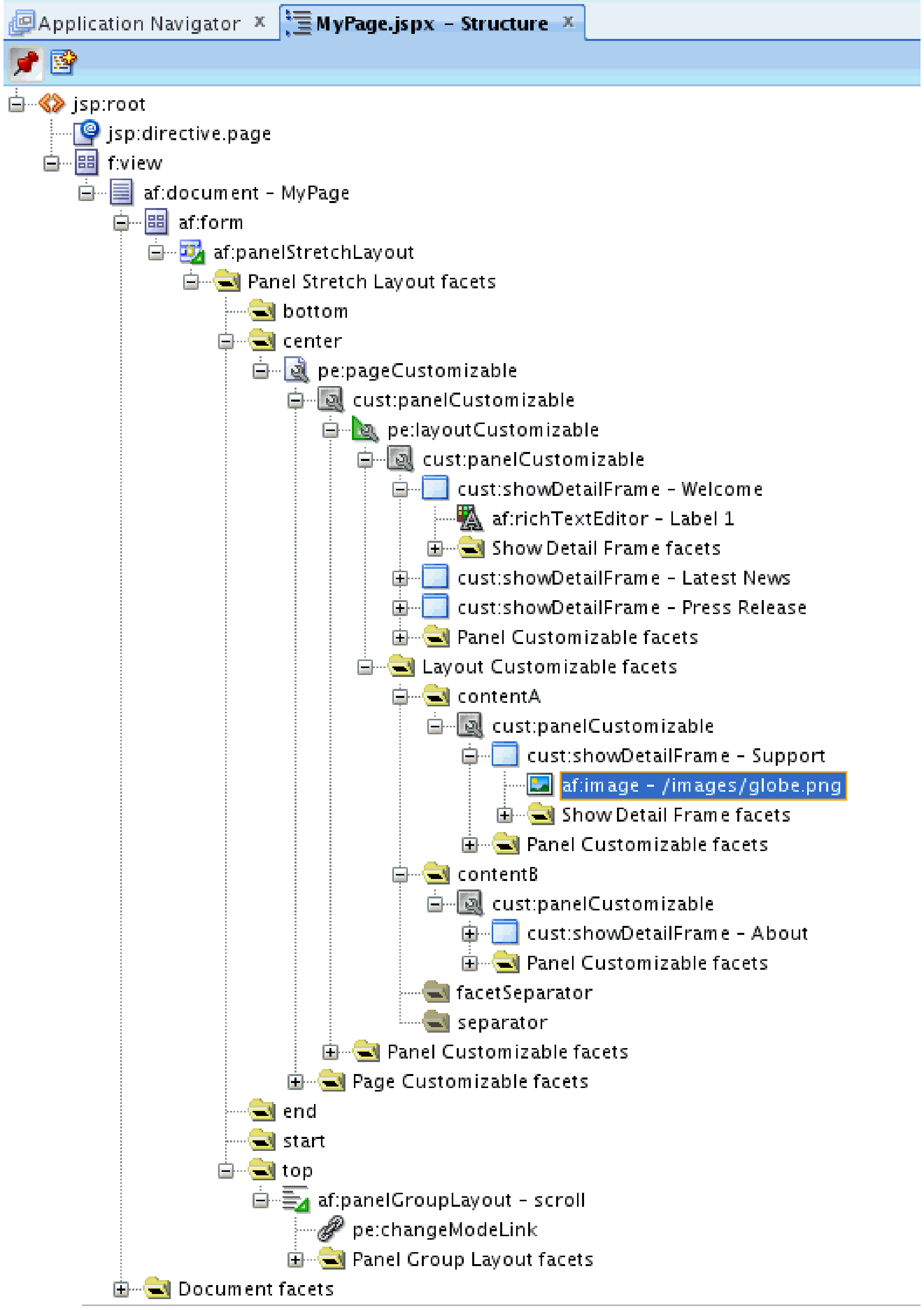
9. Add `Show Detail Frame` components inside each `Panel Customizable` on the page by performing the steps in Section 18.1.6, "How to Enable Component Customization Using Show Detail Frame Components."

   Figure 18–8 shows `Show Detail Frame` components inside `Panel Customizable` that is a direct child of `Layout Customizable`, and inside `Panel Customizable` components that are direct children of the `ContentA` and `ContentB` facets.

10. For the sake of this example, add a `Rich Text Editor` and an `Image` component inside two of the `Show Detail Frame` components nested in the `Layout Customizable`. Drag and drop each of these components from the **ADF Faces** tag library to the required location on the page.

    The hierarchy of components on the page is as shown in Figure 18–8.

Figure 18–8 Component Hierarchy in MyPage.JSPX



```
jsp:root
  jsp:directive.page
  f:view
    af:document - MyPage
      af:form
        af:panelStretchLayout
          Panel Stretch Layout facets
            bottom
            center
              pe:pageCustomizable
                cust:panelCustomizable
                  pe:layoutCustomizable
                    cust:panelCustomizable
                      cust:showDetailFrame - Welcome
                        af:richTextEditor - Label 1
                        Show Detail Frame facets
                      cust:showDetailFrame - Latest News
                      cust:showDetailFrame - Press Release
                      Panel Customizable facets
                    Layout Customizable facets
                      contentA
                        cust:panelCustomizable
                          cust:showDetailFrame - Support
                            af:image - /images/globe.png
                            Show Detail Frame facets
                          Panel Customizable facets
                      contentB
                        cust:panelCustomizable
                          cust:showDetailFrame - About
                          Panel Customizable facets
                      facetSeparator
                      separator
                  Panel Customizable facets
                Page Customizable facets
            end
            start
            top
              af:panelGroupLayout - scroll
                pe:changeModeLink
                Panel Group Layout facets
      Document facets
```

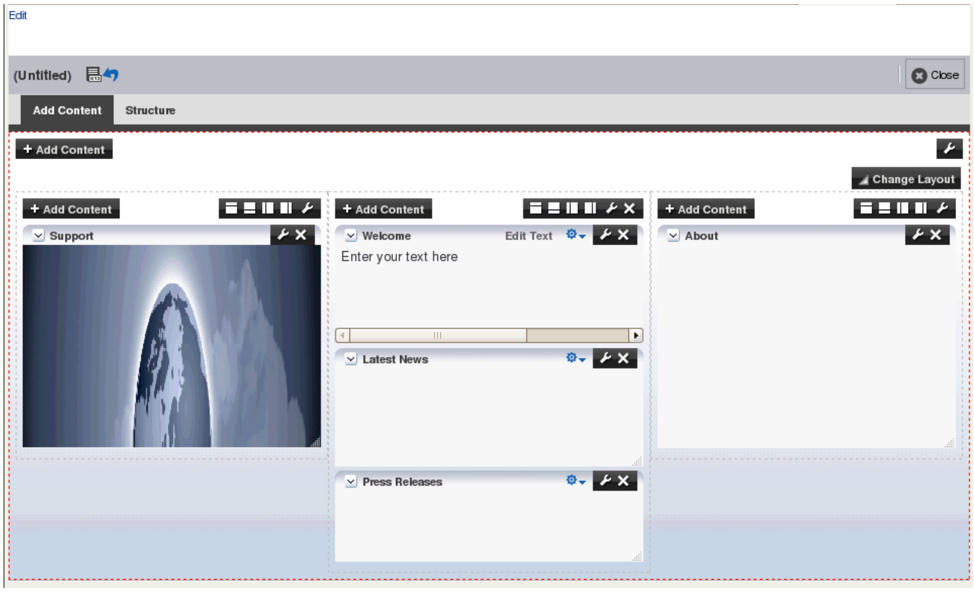
11. Grant Edit or Customize permission on the page to the required users and roles. For more information about granting permissions, see Section 74.4, "Using the Role Manager Task Flow."

12. Run `MyPage.jspx`.

    The page opens in View mode. Click the **Edit** link on the page to enter Edit mode. The page opens in Composer. In Composer, you can perform all editing tasks described in Section 16.5, "Editing Capabilities in Design View and Add Content View in Page Edit Mode."

    Figure 18–9 shows how the page appears in Edit mode at runtime.

Figure 18–9 MyPage Opened in Composer



If your application is not configured with ADF security, then to use this sample page in other examples in this guide, configure ADF security on the application.

To configure security in your application:

1. Configure ADF Security with form-based authentication, generating a default login page.

   For more information, see Section 74.3, "Configuring ADF Security."

2. Create three users `ahunold`, `sking`, and `jdoe`.

   For the detailed procedure, see Section 74.2, "Creating an Application Role."

When you run `MyPage.jspx`, a login screen is displayed. You can log in with any of the three user names that you created.

18.3 Populating Pages with Content

After you create an editable page with the required Composer components, you can populate the page with content just like a regular JSPX page. However, there are certain limitations and recommendations that you must be aware of when adding content to your Composer-enabled page.

Populating editable pages at design time is like populating any other ADF Faces page. You can drag and drop components from different areas of the IDE onto the page. You can add components like portlets, task flows, and ADF Faces components.

When you drag and drop a component anywhere inside a `Page Customizable` component, the `Id` attribute is set to a unique value. The `Id` attribute is required for editing a component and persisting its changed state. When you add a component to a page at runtime, the `Id` attribute is set automatically.

18.3.1 What You May Need to Know When Adding Content to a Page

Consider the following when adding content to your editable page:

- Add components inside `Panel Customizable` components that are nested in the `Page Customizable` component. This ensures that the components can be edited at runtime.
- You can include any Oracle ADF Faces component or task flow as child component of a `Show Detail Frame` component. However, portlets contain headers similar to those provided by `Show Detail Frame` components and can be added to `Panel Customizable` components directly. There are no additional benefits to including portlets in `Show Detail Frame` components.
- For components that you want to make selectable in Structure view in Composer, ensure that the component is compliant with rich client framework and generates a client-side component.
- If your page has the ADF Faces components `Output Text` and `Output Formatted` nested inside a `Page Customizable` component, then ensure that you set the `clientComponent` attribute value. If this attribute value is not set, then you may encounter errors while trying to move or rearrange components on the page at runtime.
- To consume portlets in your editable page, you must first register the portlet producers with your application. For information, see Chapter 63, "Consuming Portlets."

18.3.1.1 Considerations for Adding Task Flows

Users can personalize, customize, and edit task flows that are added to a customizable page. In a secured application, users with Customize permission on the task flow can also edit components on the task flow's page.

Consider the following points when adding task flows to your customizable page:

- To provide a consistent user experience in terms of look and feel, layout design, and interaction, and to avoid problems, such as too much white space, too many scroll bars, or slow, jerky, and unpredictable responses when displaying large data sets, ensure that the task flows are created by following the guidelines in Appendix D, "Guidelines for Creating Task Flows to Be Used in Composer-Enabled Pages."
- In a secured application, to enable users to view task flow content in Composer, ensure that the task flow has a `TaskFlowPermission` grant in the application's `jazn-data.xml` file, with at least `View` action provisioned. You must set this explicitly as it is not enabled by default.
- In a secured application, to enable users to edit components on the task flow's page, ensure that the task flow has a `TaskFlowPermission` grant in the application's `jazn-data.xml` file, with `Customize` action provisioned. You must set this explicitly as it is not enabled by default.
- Ensure that you specify valid values for all required parameters on the task flow.

For more information, see Chapter 22.6, "Implementing Task Flow Security"

18.4 Troubleshooting Composer Problems

This section provides information to assist you in troubleshooting problems you may encounter while using Composer.

Configuring ADF Logging for Composer

While creating your applications in JDeveloper, you can use the JDeveloper debugging tools to easily find errors in your web pages or page definition files. You can also set up the Java logger to display Java diagnostic messages. For detailed information about configuring logging, see the "Testing and Debugging ADF Components" chapter in *Fusion Developer's Guide for Oracle Application Development Framework*. To configure logging for Composer, perform the tasks in that guide and ensure that the `oracle.adf.view.page.editor` and `oracle.adfinternal.view.page.editor` packages are configured in the `logging.xml` file, with the desired logging level.

Problem

When you run a page, the following error displays:

```
java.lang.IllegalStateException: The expression
"#{bindings.pageeditorpanel.regionModel}"
(that was specified for the RegionModel "value" attribute of the region component
with id "pePanel")
evaluated to null. This is typically due to an error in the configuration of the
objects referenced by this expression. If it helps, the expression
"#{bindings.pageeditorpanel}" evaluates to "null". If it helps, the expression
"#{bindings}" evaluates to "view_untitled1PageDef". Now using an empty RegionModel
instead.
```

Solution

This error occurs if a page containing the `Page Customizable` component does not have the required task flow binding in its page definition file. Ensure that the page definition file contains the following valid entry under the `<executables>` node:

```
<taskFlow id="pageeditorpanel"
taskFlowId="#{pageEditorBean.pageEditorPanel}"xmlns="http://xmlns.oracle.com/adf/c
ontroller/binding"/>
```

This error may also occur if your page is based on a page template and that page template contains the `Page Customizable` component. In such a case, the `af:pageTemplate` tag does not contain the `value="#{bindings.pageTemplateBinding}"` attribute.

Ensure that the page definition file has the following entry under the `<executables>` node:

```
<page path="view.pageDefs.templateDef1PageDef" id="pageTemplateBinding"
Refresh="ifNeeded"/>
```

Problem

Users cannot switch to Edit mode. The Edit link (`Change Mode Link` or `Change Mode Button`) appears disabled.

Solution

The user may have only view privilege on the page. Ensure that the user has the edit privilege on the page. For the page template on which the page is based, it is sufficient to have only view privilege.

Problem

Users encounter an exception while wiring events in the Component Properties dialog in Composer.

Solution

This error occurs if your application page includes both ADF Data Visualization components and Composer components.

Register the `DvtElementObjectFactory` class with the Oracle ADF `FactoryManager` object by adding the following code to the application class that gets loaded the earliest:

```
...
import oracle.adfdt.model.dvt.objects.DvtElementObjectFactory;
import oracle.adfdt.model.managers.FactoryManager;
...
static
{
FactoryManager.getInstance().registerFactory(new DvtElementObjectFactory());
}
```

19

Extending Runtime Editing Capabilities Using Composer

This chapter describes how to use Composer's declarative and programmable extensibility mechanism to customize runtime capabilities to suit your business needs.

This chapter contains the following topics:

19.1 Overview of Extensibility Options

Composer provides a framework on which to build customizable application pages. In addition to its default capabilities, you can extend the Composer framework to augment the runtime capabilities available to end users. You must configure the extensions in your application's `adf-config.xml` file and the Composer extension file, `pe_ext.xml`. For information about these files, see Section 19.1.8, "Configuration Files."

This section describes the options available for extending Composer runtime capabilities declaratively. It contains the following subsections:

- Section 19.1.1, "Composer Add-Ons"
- Section 19.1.2, "Composer Custom Property Panels"
- Section 19.1.3, "Composer Events Handlers"
- Section 19.1.4, "Drop Handlers."

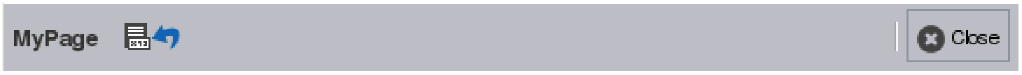
- Section 19.1.5, "Component Property Filters"
- Section 19.1.6, "Customization Manager"
- Section 19.1.7, "Composer Toolbar Customization"

19.1.1 Composer Add-Ons

The default Composer toolbar (Figure 19–1) includes the following:

- Page title: Shows the title of the page opened in Edit mode.
- **Page Properties** icon: Opens the Page Properties dialog, allowing the user to edit metadata for the host page.
- **Reset Page** icon: Reverts any changes made to the page in the current edit session.
- **Close** button: Exits Edit mode and returns the user to the standard UI.

Figure 19–1 Default Add-Ons on the Composer Toolbar



The Page Properties and Reset Page icons are examples of add-ons. Click these icons to display panels for editing page properties and resetting page customizations. Typically, add-ons are custom task flows that are rendered as icons on the Composer toolbar in page Edit mode. You can create add-ons that appear along with the Page Properties and Reset Page add-ons. For example, you can create an add-on to display page revision history so that it displays a Revisions icon on the Composer toolbar. Clicking this icon would display the page's revision history. You can also replace the Page Properties and Reset Page add-ons with custom add-ons that you create.

The process of configuring custom add-ons includes creating the task flows, packaging them into JAR files, and defining them in the Composer extension file. For more information, see Section 19.2, "Creating Composer Add-Ons."

19.1.2 Composer Custom Property Panels

The Component Properties dialog displays categories of attributes on different tabs. Each tab can be referred to as a property panel. The default Component Properties dialog in Composer is analogous to the Oracle JDeveloper Property Inspector. You can create and register custom property panels for a component, populate them with component properties, and display them as tabs along with the default tabs in the Component Properties dialog.

The process of configuring custom property panels includes creating them as task flows, packaging them into JAR files, and defining them in the Composer extension file. For more information, see Section 19.3, "Creating Custom Property Panels."

19.1.3 Composer Events Handlers

Composer provides an intuitive user interface for editing pages at runtime. This includes such UI components as the Save, Close, and Delete buttons. When a user clicks a button or icon in Composer, an event handler ensures that a specific action is performed. An event handler is the code that is called back by Composer when a Composer event is invoked. Each UI event in Composer is associated with an event handler. Sometimes it may be necessary to augment Composer's innate capabilities by performing a different action or multiple actions on invoking an event. For example, when a user clicks Save, in addition to the save operation that Composer provides by default, you might want to configure the application to perform additional tasks such as cleaning up cached information and connections to resources. You can accomplish this with event handlers. For more information, see Section 19.6, "Configuring Event Handlers for Composer UI Events."

19.1.4 Drop Handlers

The resource catalog provides resources that users can add to their pages. An Add link next to a resource name enables users to add it to the page. Composer provides *drop handler*s to handle the add operation in the catalog. By default, a drop handler is configured for each resource in the catalog. If you want to provide complete control of the drop action to the resource, you can create additional drop handlers for that resource. The Add link then displays a context menu with different options for adding the resource to the page. You can create one or more drop handlers to handle different flavors for resources in your catalog.

You can add the following types of drop handlers:

- Java classes registered with Composer and called when users click an Add link in the resource catalog. In this case, the resource is added to the page based on the data flavor selected.
- Task flows registered with Composer and called when users click an Add link in the resource catalog. In this case, a task flow is invoked, which enables users to decide what information from the resource must be displayed on the page.

For more information, see Section 19.7, "Configuring Drop Handlers in the Resource Catalog."

19.1.5 Component Property Filters

The Component Properties dialog displays properties of a selected component. By default, Composer filters certain component properties and displays a subset of properties to users. You can define filters declaratively to further hide properties that the user need not see, or to show properties that are hidden. For more information, see Section 19.8, "Defining Property Filters."

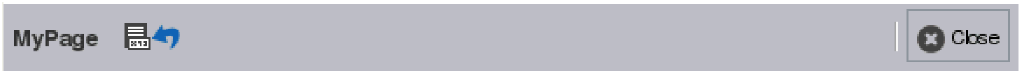
19.1.6 Customization Manager

Customization Manager is a task flow that enables users to download, upload, reset, and delete application customizations on objects like pages and task flows. You can configure the Customization Manager either in Composer or outside of it, on some administrative page. For information about configuring and using Customization Manager, see Section 19.9, "Enabling Parameter Support on the Customization Manager Task Flow."

19.1.7 Composer Toolbar Customization

The default Composer toolbar displays the following elements: page name, Page Properties and Reset Page icons, and the Close button, as shown in Figure 19–2.

Figure 19–2 Composer Toolbar with Default Elements



You can customize the toolbar by adding, deleting, or rearranging elements. You can also override existing elements with custom elements. For example, you can remove the message showing the page name if you do not want users to see the name of the page they are editing.

For information about customizing the Composer toolbar, see Section 19.10, "Customizing the Composer Toolbar."

19.1.8 Configuration Files

Before you start with the extensibility configurations described in this chapter, there are two important configuration files that you must know about. Most of the extensions discussed in this chapter are defined in these files:

- Composer extension file (`pe_ext.xml`)

  The Composer extension file, `pe_ext.xml`, enables you to extend the editing capabilities provided by Composer. Within this file you can add elements to register new Composer add-ons and custom property panels, selectively render panels, register event handlers, and define property filters. The `pe_ext.xml` file is not available in your application by default. You must create it the first time you perform such tasks as including add-ons, property panels, or event handlers. Create this file in the `META-INF` directory under the project's Web context root or in the `*application_home*/*project*/src/META-INF` directory. When you run the application, the `pe_ext.xml` file is picked up from the JAR file included in the application classpath. Your application can include more than one extension file. However, you must ensure that the JARs containing the extension files are available on the application classpath so that the `pe_ext.xml` files are picked up for processing. Every JAR with a `pe_ext.xml` in its `META-INF` folder is processed, and the Composer extensions are loaded and combined. For information about the different elements you can define in `pe_ext.xml` to extend Composer capabilities, see Section B.2.1, "pe_ext.xml."

- Application's `adf-config.xml` file

  The `adf-config.xml` file specifies application-level settings that are usually determined at deployment and often changed at runtime. When you perform such tasks as registering new add-ons and custom property panels in Composer, or creating customization layers, you must add appropriate entries in the `adf-config.xml` file. The `adf-config.xml` file is created automatically when you create an application, and when you add a `Page Customizable` component to the page, certain configurations are added to this file.

  For information about the Composer-specific configurations you can make in `adf-config.xml`, see Section B.2.2, "adf-config.xml."

19.2 Creating Composer Add-Ons

Composer provides the following default add-ons for runtime editing:

- Page Properties

  This dialog opens when users click the Page Properties icon on the Composer toolbar. The Page Properties dialog displays the current page's properties and enables users to modify property values.

- Reset Page

  The Reset Page dialog opens when users click the Reset Page icon on the Composer toolbar. The Reset Page dialog enables users to remove application customizations made to a page and reset it to a previously-saved version or to its original out-of-the-box state. For more information, see Section 16.5.11, "Reset Page."

In addition to these, you can register new add-ons with Composer. For example, you can create an add-on to display page revision history so that it displays a Revisions icon on the Composer toolbar. Clicking this icon would display the page's revision history.

This section contains the following subsections:

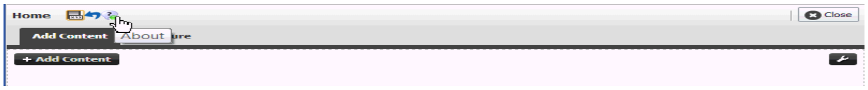
- Section 19.2.1, "How to Create and Register Add-Ons"
- Section 19.2.2, "What Happens at Runtime"
- Section 19.2.3, "How to Exclude Composer Default Add-Ons"
- Section 19.2.4, "How to Display the Customization Manager Add-On"
- Section 19.2.5, "How to Selectively Display Add-Ons"

19.2.1 How to Create and Register Add-Ons

You can create and register custom task flows that can be invoked from icons on the Composer toolbar. All registered add-ons have an associated icon that displays on the toolbar.

This section steps through the procedure of creating an add-on and registering it with Composer. It includes an example that demonstrates how to create an add-on that displays information about the application. The example add-on renders an **About** icon on the Composer toolbar (Figure 19–3) that users can click to invoke a task flow that contains information about the application.

Figure 19–3 About Icon on the Composer Toolbar



This section contains the following subsections:

- Section 19.2.1.1, "Creating an Add-On Task Flow"
- Section 19.2.1.2, "Registering Add-Ons with Composer"
- Section 19.2.1.3, "Registering Add-Ons in adf-config.xml"

19.2.1.1 Creating an Add-On Task Flow

Composer add-ons are task flows you create using JSPX pages or page fragments.

To create an add-on:

1. In your application project, create a JSFF file called `custompanelview.jsff`:
   a. From the **File** menu, select **New**.
   b. In the New Gallery dialog, expand **Web Tier**, select **JSF**, then **JSF Page** or **JSF Fragment**.
   c. Click **OK**.
2. Design the fragment by adding code similar to what is shown in Example 19–1.

Example 19–1 Sample code in the JSFF Fragment

```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
  <af:panelGroupLayout id="pnlgrp1" layout="vertical" halign="center">
    <af:spacer id="sp1" height="20" />
    <af:image id="customimage"
              source="/images/DemoLogo.jpg"
              shortDesc="Demo Logo"/>
    <af:spacer id="sp2" height="20"/>
    <af:outputText id="output1" value="This is a sample shopping cart application
based on Oracle ADF Framework.
It also uses the Oracle WebCenter Portal Framework to enable collaboration,
application customization and user customization features."/>
    <af:spacer id="sp3" height="20"/>
    <af:outputText id="output2" value="Build : 11.1.1"
                   inlineStyle="font-weight:bold;"/>
  </af:panelGroupLayout>
</jsp:root>
```

Note: At runtime, the add-on panel is automatically sized to fit the content in this fragment.

3. Create a task flow definition called `custom-panel-task-flow`:
   a. From the **File** menu, choose **New**.
   b. In the New Gallery dialog, expand **Web Tier**, select **JSF**, then **ADF Task Flow**.
   c. Click **OK**.
4. Drop the `custompanelview.jsff` fragment that you created onto the task flow definition.

   See Also: "Getting Started with ADF Task Flows" in *Fusion Developer's Guide for Oracle Application Development Framework*

5. Save the task flow definition file.

Optionally, if you create the task flow in one application but want to consume it in another application, you must first package the task flow in an ADF library and add the resulting JAR in the consuming application.

To package the task flow in an ADF library:

1. Create a deployment profile for the task flow:
   a. Right-click **Portal** project and choose **New**.
   b. In the New Gallery, expand **General**, select **Deployment Profile**, and then **ADF Library JAR File**, and click **OK**.
   c. In the Create Deployment Profile -- ADF Library JAR File dialog, enter a name for your deployment profile and click **OK**.
   d. In the ADF Library JAR Deployment Profile Properties dialog, click **OK**.
   e. In the Project Properties dialog, click **OK**.
2. In the Application Navigator, right-click the project folder, choose **Deploy**, *deployment profile name*.

3. In the Deploy dialog, choose **Deploy to ADF Library JAR file**.
4. Click **Finish**.

   This creates a **deploy** folder including the JAR file, in the project folder located at *<Application_Root>*\Portal\deploy\.

You can add this JAR file to any application in which you want to consume the add-on.

19.2.1.2 Registering Add-Ons with Composer

After you create the task flows, you must register them with Composer so that they are displayed on the Composer toolbar along with the default options.

To register an add-on with Composer:

1. If it does not already exist, create the Composer extension file, `pe_ext.xml` in the `META-INF` directory under the project's Web context root (for example, in the *APPLICATION_HOME*`\Portal\src\META-INF` directory):
   1. From the **File** menu, select **New**.
   2. In the New Gallery dialog, expand **General**, select **XML**, then **XML Document**.
   3. Click **OK**.

   Name the file `pe_ext.xml`.
2. Add an `<addon-config>` element in the file, with a nested `<panels>` element.
3. Add one `<panel>` element for each task flow that you want to register as an add-on.

   Any number of panels can be declared under the `<panels>` element in the extension file.

   Example 19–2 shows the code of the extension file with a `<panel>` entry.

Example 19–2 Composer Extension File

```
<?xml version="1.0" encoding="US-ASCII" ?>
<pe-extension xmlns="http://xmlns.oracle.com/adf/pageeditor/extension">
  <addon-config>
    <panels>
      <panel name="oracle.custom.panel" title="About"

icon="http://myforums.oracle.com/jive3/images/question-pts-available-16x16.gif"

taskflow-id="/WEB-INF/custom-panel-task-flow.xml#custom-panel-task-flow" />
    </panels>
  </addon-config>
</pe-extension>
```

   For more information about the `addon-config` and other nested elements, see Section B.2.1.1, "addon-config."

4. Optionally, register event handlers for the custom panel by adding an `event-handlers` element within the `panel` element as shown in the following example:

   ```
   <event-handlers>
     <event-handler event="close">
       oracle.custom.TaskFlowEventHandler
   ```

```
  </event-handler>
</event-handlers>
```

For more information, see Section 19.6, "Configuring Event Handlers for Composer UI Events."

5. Save the pe_ext.xml file.

19.2.1.3 Registering Add-Ons in adf-config.xml

To register an add-on, you must add a reference to it in the application's adf-config.xml file. Add the addon-panels entry to define new add-ons.

To register add-ons in the adf-config.xml file:

1. Open the application's adf-config.xml file, located in the ADF META-INF folder under Descriptors in the Application Resources panel.
2. Add the following namespace within the adf-config element in the file:

   ```
   xmlns:pe="http://xmlns.oracle.com/adf/pageeditor/config"
   ```

3. Add a <pe:page-editor-config> entry with the namespace and include <pe:addon-panels> inside it.

   When you register a custom add-on, the default add-ons are not displayed in Composer by default. To display all the default add-ons, you must set the show-default-addons attribute on the <pe:addon-panels> tag to true. The default value for this attribute is false.

   Within <pe:addon-panels>, add <pe:addon-panel> entries for the new panels, as shown in Example 19–3.

   The name attribute must contain the name you used to register the panel in the Composer extension file.

Example 19–3 New Add-On Referenced in adf-config.xml

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  <pe:addon-panels show-default-addons="true">

    <pe:addon-panel name="oracle.custom.panel" />

  </pe:addon-panels>
</pe:page-editor-config>
```

> **Note:** If you do not specify any <addon-panel> entries under <addon-panels>, then only the default options are displayed in Composer.

4. Save the adf-config.xml file.

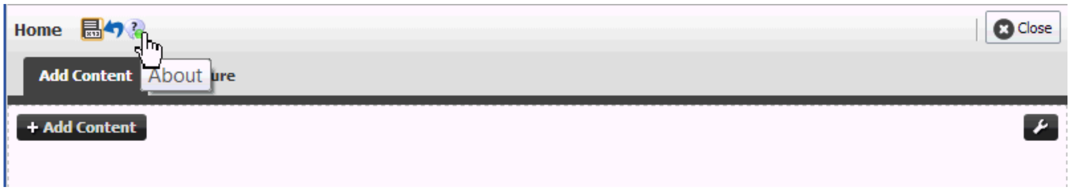
For information about the Composer-specific configurations you can make in adf-config.xml, see Section B.2.2, "adf-config.xml."

19.2.2 What Happens at Runtime

Custom add-ons that you register with Composer are rendered on the Composer toolbar along with the default add-ons.

In the example, an About icon is rendered on the Composer toolbar (Figure 19–4).

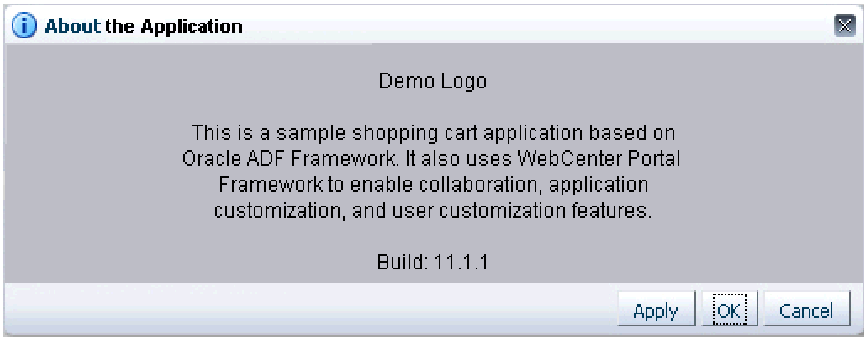
Figure 19–4 About Icon on the Composer Toolbar



Clicking this icon displays the About the Application task flow (Figure 19–5).

Note: The add-on panel is automatically sized to fit the content inside the task flow.

Figure 19–5 About the Application Task Flow



About the Application

Demo Logo

This is a sample shopping cart application based on Oracle ADF Framework. It also uses WebCenter Portal Framework to enable collaboration, application customization, and user customization features.

Build: 11.1.1

19.2.3 How to Exclude Composer Default Add-Ons

You can choose to show or hide the Page Properties, Reset Page, and Customization Manager icons on Composer toolbar. To hide any of these add-ons, you must set the `show-default-addons` attribute on `<pe:addon-panels>` to `true`, add an entry for the default add-on you want to hide, and set the `rendered` attribute on that add-on to `false`.

Example 19–4 shows the code to hide the Page Properties add-on.

Example 19–4 The adf-config.xml File with the Reset Page Option Excluded

```
<pe:addon-panels show-default-addons="true">
  <!-- Hide the Reset Page add-on -->
  <pe:addon-panel name="oracle.adf.pageeditor.addonpanels.page-reset"
rendered="false"/>

  . . .

</pe:addon-panels>
```

The excluded add-on (Reset Page) is not displayed on the Composer toolbar. The other default add-ons are displayed on the toolbar in the default order.

19.2.4 How to Display the Customization Manager Add-On

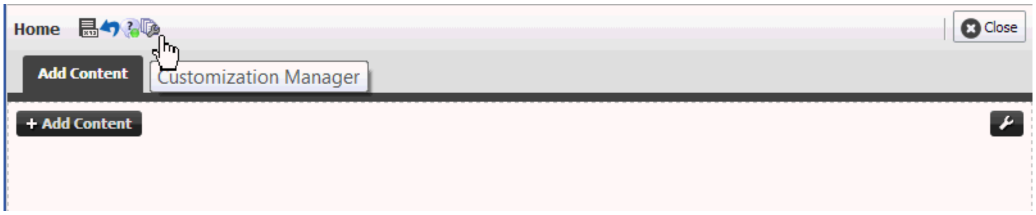
The Customization Manager is a Composer add-on that enables users to manage application customizations on task flows, pages, and page fragments on a given page. For more information, see Section 16.5.15, "Manage Application Customizations."

The Customization Manager add-on is available in the Composer library, but is not rendered by default. You can enable it by configuring it in your application's `adf-config.xml` file using a `<pe:addon-panel>` element inside `<pe:page-editor-config>`, as shown in the following example:

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  <pe:addon-panels show-default-addons="true">
    <pe:addon-panel
name="oracle.adf.pageeditor.addonpanels.customization-manager"/>

    . . .

  </pe:addon-panels>
  . . .
</pe:page-editor-config>
```

This configuration ensures that the Composer toolbar displays the Customization Manager icon as shown in Figure 19–6.

Figure 19–6 Customization Manager Icon



19.2.5 How to Selectively Display Add-Ons

Depending on your business requirement, you may need to selectively hide the add-ons available to different users in Composer. To selectively hide an add-on, you must set the `show-default-addons` attribute on `<pe:addon-panels>` to `true`, add an entry for the default add-on you want to hide, and set the `rendered` attribute for that add-on to `false` using an EL expression, as shown in Example 19–5.

Example 19–5 rendered Attribute Setting in the adf-config.xml File

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  <pe:addon-panels show-default-addons="true">
    <pe:addon-panel name="oracle.adf.pageeditor.addonpanels.page-reset"
             rendered="#{securityBean.userInPageResetRole}" />
    . . .
  </pe:addon-panels>
  . . .
</pe:page-editor-config>
```

In this example, the `securityBean` backing bean returns either `true` or `false`, depending on the role of the logged-in user. If the returned value is `false`, Composer does not display the Reset Page icon on the Composer toolbar. If the returned value is `true`, Composer displays the Reset Page icon.

Note: If you hide the Reset Page icon on the Composer toolbar, the Reset Task Flow icon displayed while editing task flow content is also hidden.

The default value for `rendered` is `true`. That is, if you do not specify a `rendered` attribute for an add-on, the add-on is always displayed.

19.3 Creating Custom Property Panels

Composer displays the properties of a component in the Component Properties dialog when a user clicks the **Edit** icon on the component. The Component Properties dialog provides a series of tabs. Each tab displays a group of related attributes. The attributes have associated values that control a component's behavior and visual style properties. For example, the Style tab displays the component's style-related properties, such as width, height, and background color.

Similarly, when a user clicks the **Page Properties** icon, a Page Properties dialog opens with its own series of tabs. These tabs contain display-related page properties, page parameters, and security settings.

You can create and register custom property panels to render along with the tabs displayed in the Component Properties or Page Properties dialog. In addition, you can remove the default panels or replace them with custom property panels. For example, you can develop a friendlier property panel for an `Image` component by displaying a picker for its `Source` property. This would make it easier for users to select an image from the available options.

This section describes how to create custom property panels. It also describes how to exclude, override, and selectively render default property panels. It contains the following subsections:

- Section 19.3.1, "How to Create and Register Custom Property Panels"
- Section 19.3.2, "What Happens at Runtime"
- Section 19.3.3, "How to Override Default Property Panels"
- Section 19.3.4, "How to Exclude Default Property Panels"
- Section 19.3.5, "How to Selectively Render Property Panels"
- Section 19.3.6, "How to Display Properties and Parameters in a Custom Property Panel"

19.3.1 How to Create and Register Custom Property Panels

Creating a custom property panel is similar to creating an add-on. That is, you create custom property panels as task flows and register them in the Composer extension file. However, while Composer add-ons are configured using the `addon-panels` element in the `adf-config.xml` file, custom property panels are configured using the `property-panels` element in the extension file itself.

You can configure a custom property panel to display in the Component Properties dialog always. Alternatively, you can configure the panel to display only when a particular component or task flow is selected for editing.

This section describes how to create and register a custom property panel. It contains the following subsections:

- Section 19.3.1.1, "Creating a Custom Property Panel"

- Section 19.3.1.2, "Registering a Custom Property Panel for a Component"
- Section 19.3.1.3, "Registering a Custom Property Panel for a Task Flow"

19.3.1.1 Creating a Custom Property Panel

Property panels provide a means of editing page or component properties. For example, a user can click the **Edit** icon on a selected task flow and modify its parameter values and change its visual attributes in the Component Properties dialog.

Composer enables you to associate property panels with components and task flows. When a user clicks the **Edit** icon on the component or task flow, Composer opens the Component Properties dialog and displays the custom property panels you associated with the object along with the default property panels.

The steps for creating a custom property panel and declaring it in the Composer extension file are similar to those for creating and declaring Composer add-ons. For detailed information, see Section 19.2.1.1, "Creating an Add-On Task Flow" and Section 19.2.1.2, "Registering Add-Ons with Composer."

Example 19–6 shows a sample property panel declaration in the `pe_ext.xml` file.

Example 19–6 Custom Property Panel Declaration in pe_ext.xml

```
<pe-extension xmlns="http://xmlns.oracle.com/adf/pageeditor/extension">
  <addon-config>
    <panels>
      <panel name="sample-panel" title="Sample Panel"
             taskflow-id="/WEB-INF/sample_task_flow.xml#sample_task_flow"/>
    </panels>
  </addon-config>
</pe-extension>
```

After you create a custom panel and declare it in the `pe_ext.xml` file, you must configure it using the `<property-panels>` element, as shown in Example 19–7. This ensures that the panel displays automatically in the Composer Component Properties and Page Properties dialog.

Example 19–7 Custom Property Panel Configuration in pe_ext.xml

```
<addon-config>
  <panels>
    . . .
  </panels>
  <property-panels>
    <property-panel name="samplepanel">
      <panel name="sample-panel" rendered="true"/>
    </property-panel>
  </property-panels>
</addon-config>
```

Use one `<panel>` element to register each custom panel. A `<panel>` corresponds to a tab in the Component Properties dialog. You can add any number of `<panel>` elements.

19.3.1.2 Registering a Custom Property Panel for a Component

When you register a custom panel in the extension file, you can associate the panel with a component or a task flow. The custom property panel then renders only for that component or task flow. This section describes how to register a property panel for a specific component.

To register a property panel for a component:

1. Create a Composer extension file, `pe_ext.xml`, if it does not already exist.

   For information about creating the extension file, see Section 19.2.1.2, "Registering Add-Ons with Composer."

2. Add a `<property-panels>` element inside the `<addon-config>` section in the `pe_ext.xml` file.

3. Add a `<property-panel>` declaration within the `<property-panels>` element.

   You can have multiple `<property-panel>` entries.

4. Within the `<property-panel>` element, add a `<component>` element to specify the runtime class name of the component (optional) and a `<panel>` element to specify the name you used to declare the panel in the `<addon-config>` section of the file.

   Example 19–8 shows a custom property panel that is associated with a `Command Button` component by specifying the component's fully qualified class name. For information about Oracle ADF components and their runtime classes, see *Fusion Developer's Guide for Oracle Application Development Framework*.

Example 19–8 Code to Register a Property Panel for a Component

```
<pe-extension xmlns="http://xmlns.oracle.com/adf/pageeditor/extension">
  <addon-config>
    <property-panels>
      <property-panel name="cmdbtn">

<component>oracle.adf.view.rich.component.rich.nav.RichCommandButton</component>
        <panel name="prop.panel.cmdbtn" />
        <panel name="prop.panel.generic" />
      </property-panel>
    </property-panels>
  </addon-config>
  . . .
</pe-extension>
```

> **Note:** When registering a property panel, if you do not associate it with a component or task flow (discussed in the next section), the registered panel is rendered at all times in the Component Properties and Page Properties dialogs.
>
> To configure multiple property panels for a component, you can include multiple `<panel>` elements within a `<property-panel>` element. For more information about the `<property-panels>` element and its nested elements, see Section B.2.1.2, "property-panels."

All the default panels, such as Child Components, Style, and Parameters, are displayed along with the custom panels you define.

19.3.1.3 Registering a Custom Property Panel for a Task Flow

You can define a custom property panel for a task flow by registering it with the Composer extension file. Example 19–9 shows the sample code used to register a custom property panel for a task flow.

A custom property panel registered for a specific task flow appears only when its associated task flow is selected. Otherwise, default property panels appear.

Note: Use task flow-specific custom property panels only to customize task flow parameters or any other aspect related to how the task flow works.

A custom property panel does not function if it is associated with a task flow rendered using the Oracle JSF Portlet Bridge.

To register a property panel for a task flow:

1. Add a `<property-panels>` element within the `<addon-config>` element in the `pe_ext.xml` file.

   For information about creating the extension file, see Section 19.2.1.2, "Registering Add-Ons with Composer."

2. Add a `property-panel` declaration within this.

   You can have multiple `property-panel` entries.

3. Add `taskflow-id` and `panel` elements within the `property-panel` element.

   Add the `taskflow-id` element to specify the task flow name. Add the `panel` element to specify the name you used to declare the property panel in the `addon-config` section of the file.

   Example 19–9 shows a custom property panel associated with a `dashboard` task flow.

Example 19–9 Code to Register a Property Panel for a Task Flow Instance

```
<pe-extension xmlns="http://xmlns.oracle.com/adf/pageeditor/extension">
  <addon-config>
    <property-panels>
      <property-panel name="dashboard">
        <taskflow-id>/WEB-INF/dashboard-taskflow#prop-panel</taskflow-id>
        <panel name="dashboard.prop-panel" />
      </property-panel>
    </property-panels>
  </addon-config>
  . . .
</pe-extension>
```

Notes:

- If you do not associate a custom property panel with a component or task flow (using the `<component>` or `<taskflow-id>` tag), then the registered panel is rendered for all pages, task flows, and components in the Component Properties and Page Properties dialogs.

  You can register multiple `panel` elements within a `property-panel` element. For more information about the `property-panels` element and its nested elements, see Section B.2.1.2, "property-panels."
- To enable end users to edit the attributes and parameters on a custom property panel, in the panel's task flow fragment you must add a `Show Property` components for each property that you want to expose. The value attribute on a `Show Property` component is tied to a managed bean that contains the logic to read and write values for the properties and parameters. For more information, see Section 19.3.6, "How to Display Properties and Parameters in a Custom Property Panel."

19.3.2 What Happens at Runtime

If you associated the custom property panel with a specific component or task flow, at runtime the panel renders as a tab in the Component Properties dialog invoked from the specified component or task flow. If you did not associate the custom property panel with a specific component or task flow, at runtime the custom property panel renders as a tab in both the Page Properties and Component Properties dialogs for all pages, components, and task flows.

Note: In the Component Properties and Page Properties dialogs, custom panels are sized by the tab component containing the task flows. The size of the tab component itself is determined by a rule in the currently-applied skin. This rule is called `af|panelTabbed.Tab`.

19.3.3 How to Override Default Property Panels

The Component Properties dialog in Composer displays the following panels by default: Display Options, Child Components, Events, Style, Content Style, and Parameters. You can override a particular panel by using the default panel's name when you declare and register the custom panel in the `pe_ext.xml` file. For information about the default panels, see Section B.3, "Composer Default Add-Ons and Property Panels."

Example 19–10 shows the code to override the Display Options panel with a panel defined using a task flow called `custom-panel-task-flow`.

Example 19–10 Sample Code to Override a Default Panel

```
<addon-config>
  <panels>
    <panel name="oracle.adf.pageeditor.pane.generic-property-inspector"
title="Sample Panel"

icon="http://myforums.oracle.com/jive3/images/question-pts-available-16x16.gif"
```

```
taskflow-id="/WEB-INF/custom-panel-task-flow.xml#custom-panel-task-flow" />
  </panels>
  <property-panels>
    <property-panel name="samplepanel">
      <panel name="oracle.adf.pageeditor.pane.generic-property-inspector"
rendered="true"/>
    </property-panel>
  </property-panels>
</addon-config>
```

19.3.4 How to Exclude Default Property Panels

Out-of-the-box, all default property panels are displayed along with custom property panels that you configure. To hide a default property panel in the Page Properties or Component Properties dialog, you can add a line specifically for that panel and set the `rendered` attribute to `false`.

Example 19–11 shows the `rendered` attribute set to `false` for the Content Style property tab of a `Command Button` component. For information about default property panels, see Section B.3, "Composer Default Add-Ons and Property Panels."

Example 19–11 rendered Attribute for a Property Panel

```
<pe-extension xmlns="http://xmlns.oracle.com/adf/pageeditor/extension">
  <addon-config>
    <property-panels>
      <property-panel name="cmdbtn">
        <component>oracle.rich.CommandButton</component>
        <panel name="prop.panel.cmdbtn" />
        <panel name="oracle.adf.pageeditor.pane.content-style-editor"
rendered="false" />
      </property-panel>
    </property-panels>
  </addon-config>
  . . .
</pe-extension>
```

19.3.5 How to Selectively Render Property Panels

Custom property panels registered in the application are rendered in the Component Properties dialog when users click the **Edit** icon on a specified component. You can configure your application to render a property panel selectively based on different criteria like the role of a logged-in user, the page being viewed, and so on. To display property panels selectively, you can use an EL value in the `property-panel`'s `rendered` attribute as shown in the following example:

```
<property-panel name="global-but-just" rendered="#{bean.showProperty}">
```

19.3.6 How to Display Properties and Parameters in a Custom Property Panel

If you are building a custom property panel for a component, you can use `Show Property` components, available from the Composer tag library, to expose the component's attributes on the custom panel. In the page fragment defining the custom panel task flow, you must add one `Show Property` component for each attribute that you want to expose. `Show Property` is a declarative component that reads a property value on the component or task flow (for which you have created the custom panel), and displays an input field for that property in the custom panel. Users can edit property values in the panel using the input fields.

For more information about custom panels, see Section 19.3.1.1, "Creating a Custom Property Panel."

To add a `Show Property` component:

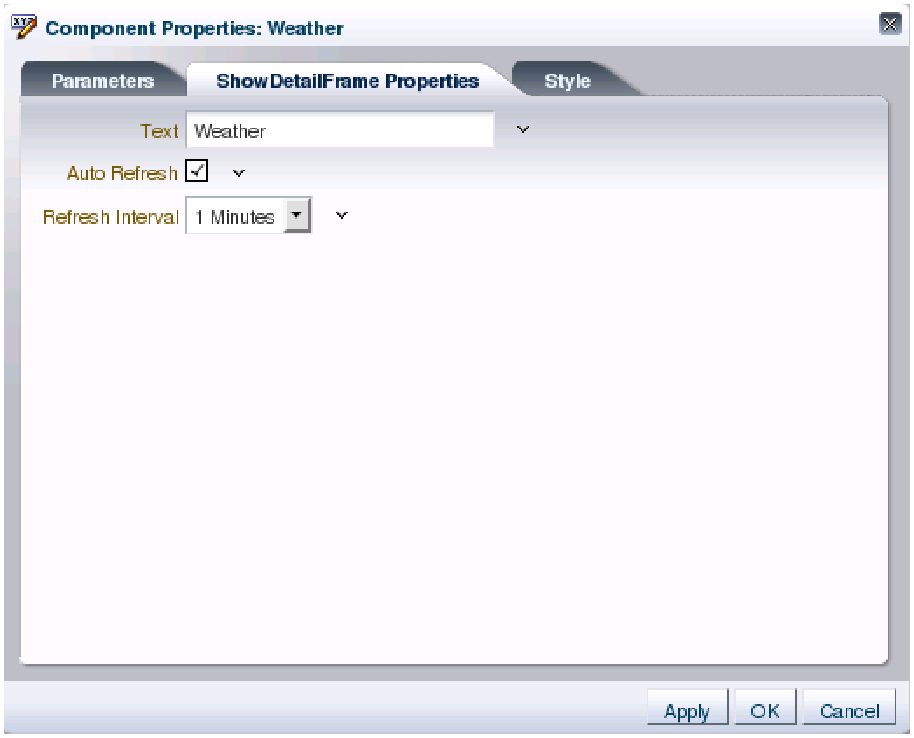
1. Open the page fragment that you created for the custom panel task flow.
2. From the Component Palette, select **Composer**.
3. Drag and drop a `Show Property` component for each component attribute that you want to expose in the custom panel.
4. To ensure that the attribute displays correctly in the custom panel, set the attributes on each `Show Property` component by referring to Section B.1.7, "Show Property."

> **Note:** You can use the `Show Property` component even on pages outside of Composer.

Example

Consider an example of a weather widget that is included inside a `Show Detail Frame` component. A custom property panel is created to enable users to edit the Text, Auto Refresh, and Refresh Interval attributes on the weather widget. It includes three fields for users to provide values for these attributes. To enable users to set the three attributes on the weather widget, one `Show Property` component is added for each attribute that is exposed in the panel. When a user edits the weather widget at runtime, the Component Properties dialog displays the custom panel with the three attributes, as shown in Figure 19–7.

Figure 19–7 Custom Panel to Display Show Detail Frame Component Properties


Component Properties: Weather

Text: Weather

Auto Refresh: ☑

Refresh Interval: 1 Minutes

The weather widget is consumed in a page along with a `Poll` component as shown in the following example:

```
<cust:showDetailFrame text="Weather" id="sdf1" contentStyle="height:220.0px;"
                      partialTriggers="p1">
  <af:region value="#{bindings.weathertaskflowdefinition1.regionModel}"
             id="r1"/>
  <af:poll id="p1" interval="60000"/>
</cust:showDetailFrame>
```

The `Poll` component is used to deliver refreshed content to the weather widget at fixed intervals. The default interval is 60000 milliseconds.

The custom panel contains three `panelLabelandMessage` components to provide input fields for the `Text`, `Auto Refresh`, and `Refresh Interval` attributes. The fields on this panel are implemented as follows:

- A `showProperty` component is added to each `panelLabelandMessage` component as shown in the following example:

  ```
  <!-- Input field for setting the Text attribute, which displays on the
  component header -->
  <af:panelLabelAndMessage label="Text" id="plam2">
    <pedc:showProperty label="Text" id="sp1" simple="true"
                       value="#{sdfCustomPanel.text}"/>
  </af:panelLabelAndMessage>

  <!-- Checkbox to enable auto refresh, which controls whether the widget must be
  refreshed -->
  <af:panelLabelAndMessage label="Auto Refresh" id="plam3">
    <pedc:showProperty label="Auto Refresh" id="sp2" simple="true"
                       type="boolean" autoSubmit="true"
                       value="#{sdfCustomPanel.autoRefresh}"/>
  </af:panelLabelAndMessage>

  <!-- LOV to display values for Refresh Interval when auto refresh is enabled
  -->
  <af:panelLabelAndMessage label="Refresh Interval" id="plam4">
    <pedc:showProperty label="Refresh Interval" id="sp3" simple="true"
                       type="list" disabled="#{!sdfCustomPanel.autoRefresh}"
                       value="#{sdfCustomPanel.refreshInterval}"
                       selectItems="#{sdfCustomPanel.selectItems}"

  binding="#{sdfCustomPanelRequestBean.refreshIntervalShowProp}"/>
  </af:panelLabelAndMessage>
  ```

  where `sdfCustomPanel` references a managed bean, `SDFCustomPanelBean.java`.

- The task flow definition of the custom panel contains a reference to the bean:

  ```
  <managed-bean id="mb1">
    <managed-bean-name id="mb1_name">sdfCustomPanel</managed-bean-name>
    <managed-bean-class id="mb1_
  class">portal.weather.panel.SDFCustomPanelBean</managed-bean-class>
    <managed-bean-scope id="mb1scope">session</managed-bean-scope>
  </managed-bean>
  ```

- The `SDFCustomPanelBean.java` bean provides the logic to handle values for the different attributes exposed in the panel. In the bean, the `SelectionContext` API is used to read and write values for each attribute as follows:

– Get hold of the selected component, that is, the component on which the properties are displayed; in this example, a Show Detail Frame component, as the weather widget is included inside one.

– Read the attribute value on the selected component.

– Get the attribute value that the user specifies and set that value for the component attribute.

For example, the Refresh Interval attribute is enabled only if Auto Refresh in selected, and it displays a drop-down menu with the values defined in the managed bean. The Poll component on the page is wired to the Show Property component so that the widget refresh is driven by the value of the Show Property component. The code to handle the value for the Refresh Interval property is as follows:

```
. . .
/** Set the refresh interval attribute value on the component
public void setRefreshInterval(String _refreshInterval)
{
  this._refreshInterval = _refreshInterval;
}
**/

public String getRefreshInterval()
{
  if (_autoRefresh == true && _refreshInterval != null)
    return _refreshInterval;

  // Get hold of the component whose properties you want to edit
  SelectionContext selCtx =
    Context.getCurrentInstance().getSelectionContext();
  UIComponent selComp = selCtx.getSelectedComponent().getUIComponent();
  if (selComp instanceof ShowDetailFrame)
  {
    // Get the refresh interval value specified for the Poll component
    RichPoll pollComp = (RichPoll) selComp.findComponent("p1");
    if (_autoRefresh == false)
      _refreshInterval = "Refresh interval not applicable";
    else if (pollComp.getInterval() < 0)
      _refreshInterval = "60000";
    else
      _refreshInterval = Integer.toString(pollComp.getInterval());
  }

  return _refreshInterval;
}
. . .
public List<SelectItem> getSelectItems()
{
  return _selectItems;
}
. . .
private static List<SelectItem> _selectItems;
static
{
  _selectItems = new ArrayList<SelectItem>();
  SelectItem si = new SelectItem("60000", "1 Minutes");
  _selectItems.add(si);
  si = new SelectItem("120000", "2 Minutes");
  _selectItems.add(si);
  si = new SelectItem("180000", "3 Minutes");
  _selectItems.add(si);
}
```

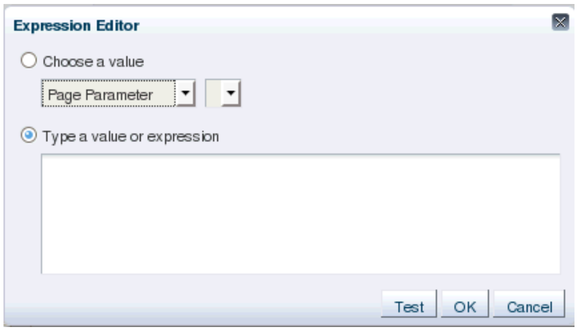
- When a user selects a value for the `Refresh Interval` property and clicks Apply in the Component Properties dialog, the save listener is called and the `save` event handler ensures that the value is saved back to the bean. The relevant code in the save event handler implementation is as follows:

```
public void save()
{
  . . .
  if (_autoRefresh)
  {
    aa = new AttributeComponentChange("interval", Integer.parseInt(_
refreshInterval));
    changeManager.addComponentChange(context, pollComp, aa);
    aa.changeComponent(pollComp);
  }
  else
  {
    aa = new AttributeComponentChange("interval", new Integer(-1));
    changeManager.addComponentChange(context, pollComp, aa);
    aa.changeComponent(pollComp);
  }
}
```

19.4 Extending the Expression Builder

All properties on the Parameters and Display Options tabs in the Component Properties dialog can take Expression Language (EL) expressions. The Expression Builder option available on such parameters opens the Edit dialog, which is a simple expression builder as shown in Figure 19–8. The expression builder is particularly useful when you want a value that is retrievable but otherwise unknown, for example, when you want a value to be the name of the current user or the current application skin.

Figure 19–8 Expression Language Editor



Expression Editor

○ Choose a value

Page Parameter

● Type a value or expression

You can customize the expression builder to provide more options by making the necessary entries in the Composer extension file, `pe_ext.xml`. You can also configure Composer to disable EL or protect existing EL from overwrite.

This section explains how to extend the expression builder to add custom capabilities. It contains the following subsections:

- Section 19.4.1, "How to Extend the Expression Builder"

- Section 19.4.2, "How to Protect Expression Language"
- Section 19.4.3, "What Happens at Runtime"

19.4.1 How to Extend the Expression Builder

You can extend the expression builder by adding custom options to the expression value drop-down list. Custom options must be defined and included in the pe_ext.xml file. For each new option you want to add, you must define and include a <selector> element in the pe_ext.xml file.

To configure custom options in the Composer extension file:

1. Create a Java bean, for example UserInformation.java, with the logic to populate the expression dialog with your custom options. Example 19–12 shows the code of a sample Java bean used to display a new string, User Name, as a custom value in the expression dialog.

Example 19–12 Sample Code to Add a Custom Value in the Expression Dialog

```
package view;

import java.util.ArrayList;
import java.util.List;

import oracle.adf.view.page.editor.elbuilder.ELParameter;
import oracle.adf.view.page.editor.elbuilder.ELParameterValue;

public class UserInformation implements ELParameter {
  public String getName() {
    return mName;
  }

  public List<ELParameterValue> getValues() {
    if (mValues == null)
      {
        mValues = new ArrayList<ELParameterValue>();
        for(String[] args : mValueList)
          {
            mValues.add(new ELParameterValue(args[0], args[1]));
          }
      }
       return mValues;
  }
  private static String[][] mValueList =
    {new String[]{"User Name", "#{securityContext.userName}"}};

  private String mName = "User Name";
  private List<ELParameterValue> mValues;  }
```

2. Add an <elbuilder-config> element in the pe_ext.xml file to register the bean.

   For information about creating the extension file, see Section 19.2.1.2, "Registering Add-Ons with Composer."

3. Add a <selector> element within the <elbuilder-config> section, and provide details about the bean you created, as shown in the following example:

```
<elbuilder-config>
  <!-- define selector -->
  <selector id="UserInformation">
```

```
    view.UserInformation
  </selector>

  <!-- include selector -->
  <selectors>
    <selector id="UserInformation" rendered="true"/>
  </selectors>
</elbuilder-config>
```

You can have multiple `<selector>` entries for different custom options.

Custom options display for all attributes by default. You can use the `rendered` attribute on `<selector>` to display an option conditionally, based on specific criteria.

4. Save the `pe_ext.xml` file.

19.4.2 How to Protect Expression Language

You can configure Composer to disable EL or protect existing EL from overwrite within an application or a specific `.jspx` page. This is especially useful when exposing elements to end users as described in Section 19.11, "Enabling Direct Select in Design or Add Content View."

To define settings for an application, modify the following elements in `adf-config.xml` within the `<pe:page-editor-config>` tag:

- `<pe:allow-el>` defines if an EL can be entered for component properties. The default is `true`. If an EL is already defined for a property, it cannot be changed.
- `<pe:protect-el>` defines whether EL in form elements is read-only. The default is `false`. If an EL is already defined and the component is being edited in a different level, you cannot change the EL.

To define behavior for a specific `.jspx` page, use the following elements within the `<pe:pageCustomizable>` tag:

- `allowEL` (boolean) defines whether or not EL can be run in application pages. The default is `true`. If an EL is already defined for a property, it cannot be changed.
- `protectEL` (boolean) defines whether or not EL in form elements is read-only. The default is `false`. If an EL is already defined and the component is being edited in a different level, you cannot change the EL.

The settings defined in the `.jspx` page override any settings defined in `adf-config.xml`.

19.4.3 What Happens at Runtime

The selector in the runtime expression builder displays the custom value along with the default values.

If EL is disabled, the expression builder will not be accessible, and EL will not be allowed in property fields.

If EL is protected, any EL already present as an attribute value cannot be changed in either the Parameters or Display Options tabs. (EL picked from a LOV is allowed.)

19.5 Configuring Custom LOVs or Pickers for Task Flow Parameters

Typically, while editing a task flow parameter in Composer, the user enters a value in the text box provided in the Component Properties dialog. However, many a time the user is confused about what value to specify in a particular field. Rather than leave them guessing, as a developer who knows the values that each parameter can take, you can make it easier for users by listing all valid options, wherever possible. You can configure Composer to display a list of values (LOV) or a picker against any parameter.

You can display a predefined set of values for a parameter using the following options:

- Static LOV

  To display a list of predefined values.

- Dynamic LOV

  To display a list of values generated by evaluating an EL value that is computed when the page is run.

- Global LOV

  To display a global list of values that can be used in any task flow in the application.

- Picker

  To display all values in a picker format, for example, a document picker.

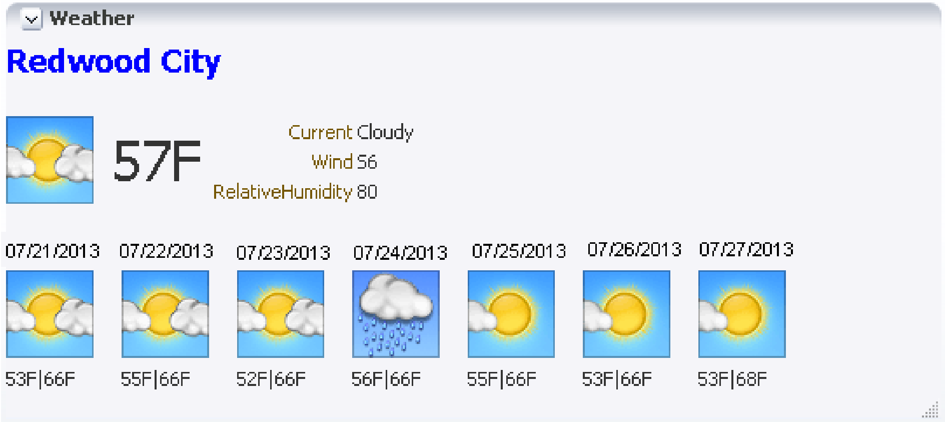
This section describes how to configure different types of LOVs for task flow parameters. It contains the following subsections:

- Section 19.5.1, "How to Configure an LOV"
- Section 19.5.2, "What Happens at Runtime"

Example Used to Describe the Procedures in This Section

Some of the procedures in this section use the example of a simple weather task flow, `weather-task-flow-definition`, which displays weather information for a selected city, as shown in Figure 19–9.

Figure 19–9 Weather Task Flow



Redwood City

57F

Current Cloudy
Wind 56
RelativeHumidity 80

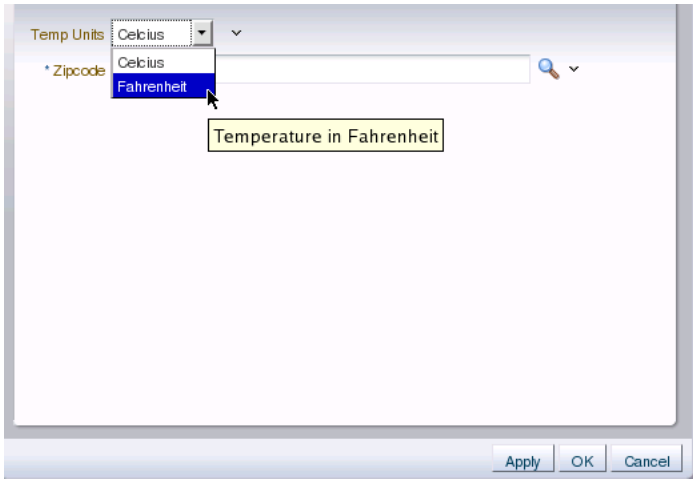
07/21/2013	07/22/2013	07/23/2013	07/24/2013	07/25/2013	07/26/2013	07/27/2013
53F|66F	55F|66F	52F|66F	56F|66F	55F|66F	53F|66F	53F|68F

The task flow provides two parameters, `zipCode` and `tempUnits`, that users can modify to display weather details for a selected city and in a selected temperature unit

(Fahrenheit or Celsius) respectively. This weather task flow example is used to explain how to configure the following types of LOVs:

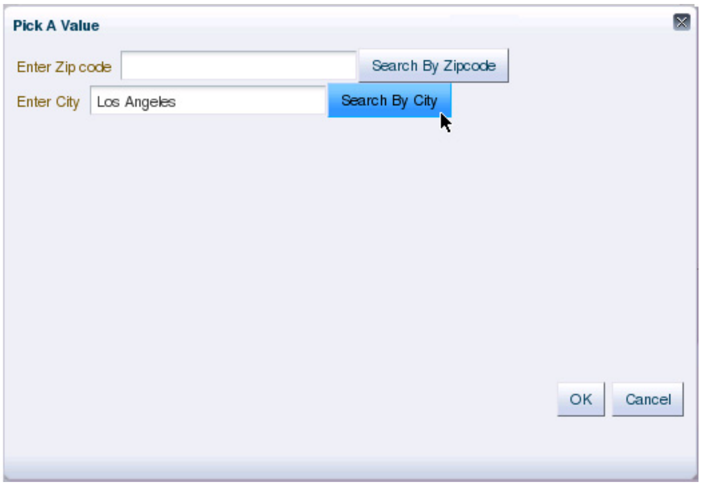
- A static LOV with the values `Celsius` and `Fahrenheit` for the `tempUnits` parameter, as shown in Figure 19–10.

Figure 19–10 Static LOV for the tempUnits Parameter



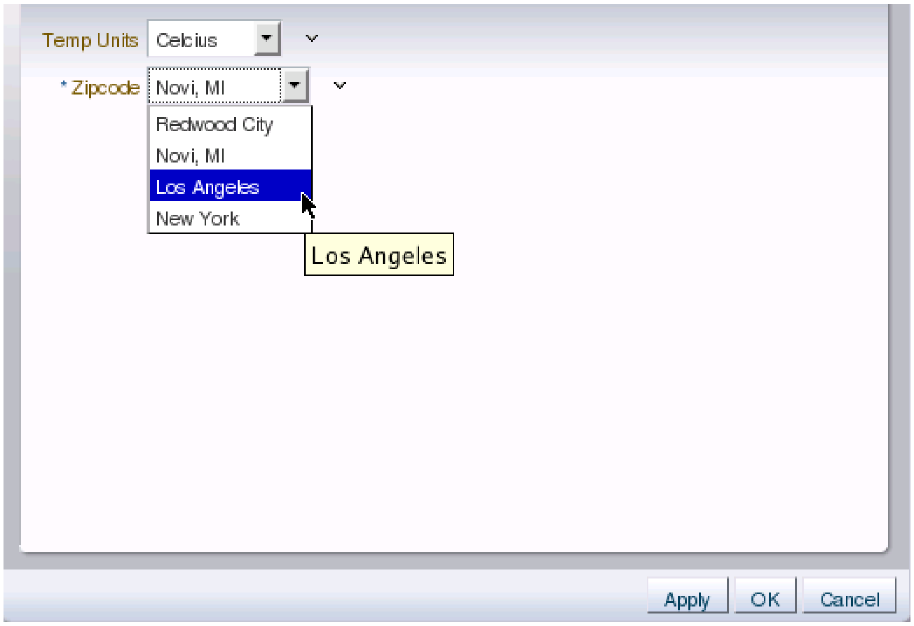
- A picker with two fields that enable users to specify a city name or ZIP code (Figure 19–11) to view corresponding details in the weather task flow.

Figure 19–11 City Picker for the zipCode Parameter



- Alternatively, a dynamic LOV for the `zipCode` parameter to display values (Figure 19–12) based on an EL value that is evaluated at runtime.

Figure 19–12 Dynamic LOV for the zipCode Parameter



The weather task flow includes a task flow definition file, `weather-task-flow-definition.xml`, with the code shown in Example 19–13.

Example 19–13 The weather-task-flow-definition.xml File

```
<?xml version="1.0" encoding="US-ASCII" ?>
<adfc-config xmlns="http://xmlns.oracle.com/adf/controller" version="1.2">
  <task-flow-definition id="weather-task-flow-definition">
    <default-activity id="defaultactivity1">weather</default-activity>
    <input-parameter-definition id="inputparam1">
      <name id="inputparam1name">zipcode</name>
      <value>#{pageFlowScope.zipcode}</value>
      <class>java.lang.String</class>
      <required/>
    </input-parameter-definition>
    <input-parameter-definition id="inputparam2">
      <name id="ip2name">tempUnits</name>
      <value>#{pageFlowScope.tempUnits}</value>
      <class>java.lang.String</class>
    </input-parameter-definition>
    <view id="weather">
      <page>/weather.jsff</page>
    </view>
    <use-page-fragments/>
  </task-flow-definition>
</adfc-config>
```

The parameters, shown in **bold** text, are defined in such a way that values provided by users at runtime are stored in a session bean, `pageFlowScope`, from where they can be read by other components.

When you edit the task flow at runtime, the Parameters tab displays two input text fields to provide parameter values. The following sections explain how to enable LOVs for these task flow parameters so that users can choose from a list of predefined options.

19.5.1 How to Configure an LOV

This section describes how to configure different types of LOVs for task flow parameters. It contains the following subsections:

- Section 19.5.1.1, "Configuring a Static LOV"
- Section 19.5.1.2, "Configuring a Dynamic LOV"
- Section 19.5.1.3, "Configuring a Picker"
- Section 19.5.1.4, "Configuring an LOV from a Global List"

19.5.1.1 Configuring a Static LOV

Use a static LOV to display a list of predefined values against a parameter. You can configure a static LOV by defining an `<lov-config>` section with nested `<enumeration>` elements in the Composer extension file, `pe_ext.xml`. This section uses the weather task flow example and describes how to configure a static LOV for the `tempUnits` parameter.

To configure a static LOV:

1. If it does not already exist, create the Composer extension file, `pe_ext.xml` in the `META-INF` directory under the project's Web context root (for example, in the *`APPLICATION_HOME`*`\Portal\adfmsrc\META-INF` directory):

   a. From the **File** menu, select **New**.

   b. In the New Gallery dialog, expand **General**, select **XML**, then **XML Document**.

   c. Click **OK**.

   Name the file `pe_ext.xml`.

2. Add an `<lov-config>` section and include the task flow definition with nested `<enumeration>` elements, as shown in the following code example:

```
<lov-config>
  <!-- Entry for the task flow in which you are configuring the LOV -->
  <task-flow-definition
taskflow-id="/WEB-INF/weather-task-flow-definition.xml#weather-task-flow-defini
tion">

    <!-- Specifying the parameter for which you want to define a static LOV -->
    <input-parameter-definition>
      <name>tempUnits</name>
      <!-- List of values to be displayed for the parameter -->
      <enumeration inline="true">
        <item>
          <name>Celcius</name>
          <value>c</value>
          <description>Temperature in Celcius</description>
        </item>
        <item>
          <name>Fahrenheit</name>
          <value>f</value>
          <description>Temperature in Fahrenheit</description>
        </item>
      </enumeration>
    </input-parameter-definition>

  </task-flow-definition>
```

```
</lov-config>
```

You can configure any number of static LOVs within the `<lov-config>` section.

> **Note:** To allow translatable strings to be provided for a parameter name, you can use an EL value for the name, for example, `#{resourceBundle.temp_units}`.

3. Save the file.

19.5.1.2 Configuring a Dynamic LOV

Use a dynamic LOV to display a list that is generated dynamically at runtime by evaluating an EL value. This section uses the weather task flow example and describes how to configure a dynamic LOV for the `zipCode` parameter. To keep the example simple, the managed bean only provides static values that are displayed on the `Zipcode` field at runtime.

To configure a dynamic LOV:

1. Create a bean, for example, `weatherBean`, and define the list of values for the `Zipcode` parameter. The following example shows the relevant code snippet:

```
package portal.weather;

  . . .

  public List<SelectItem> getCitiesList() {
    return citiesList;
  }

  private static final String F = "&deg;F";
  private static final String C = "&deg;C";
  private static final String [][] selectItems = {{"Redwood City", "94065"},
                                                {"Novi, MI", "48375"},
                                                {"Los Angeles", "90001"},
                                                {"New York", "10036"}};

  private static final List<SelectItem> citiesList = new
ArrayList<SelectItem>();
    static {
      for (String[] city : selectItems){
        citiesList.add(new SelectItem(city[1], city[0]));
    }
  }
```

2. Register `weatherBean` in the application's `faces-config.xml` file, as shown in the following example:

```
<managed-bean>
  <managed-bean-name>weatherBean</managed-bean-name>
  <managed-bean-class>portal.weather.WeatherBean</managed-bean-class>
  <managed-bean-scope>request</managed-bean-scope>
</managed-bean>
```

3. If it does not already exist, create the Composer extension file, `pe_ext.xml` in the `META-INF` directory under the project's Web context root (for example, in the *`APPLICATION_HOME`*`\Portal\adfmsrc\META-INF` directory):

a. From the **File** menu, select **New**.

b. In the New Gallery dialog, expand **General**, select **XML**, then **XML Document**.

c. Click **OK**.

Name the file `pe_ext.xml`.

4. Add an `<lov-config>` section, include the task flow definition with an `<enumeration>` element, and reference the managed bean for the parameter value, as shown in the following example:

```
<lov-config>
  <task-flow-definition
taskflow-id="/WEB-INF/weather-task-flow-definition.xml#weather-task-flow-defini
tion">
    <input-parameter-definition>
      <name>zipcode</name>
      <value>90001</value>
      <enumeration items="#{weatherBean.citiesList}"/>
    <input-parameter-definition>
  </task-flow-definition>
</lov-config>
```

You can configure any number of dynamic LOVs within the `<lov-config>` section.

5. Save the file.

19.5.1.3 Configuring a Picker

Typically, a picker enables users to select a value from a popup dialog that displays all available options, for example, a color picker or date picker. Configuring a picker for a task flow parameter involves the following high level tasks:

- Create the picker task flow with a UI of your choice.
- Define parameters on the picker task flow. These parameters are used to populate the main task flow parameter (the one for which you are configuring the picker).
- Configure the main task flow parameter to display the picker that you created. You must add this configuration in the `pe_ext.xml` file.

This section explains these steps in detail using the weather task flow as an example. It shows how to configure a city picker for the `zipCode` parameter. The picker task flow enables users to specify the city name and get the ZIP code for that place. The ZIP code from the picker is then pushed to the Zipcode field in the weather task flow. This section contains the following subsections:

- Section 19.5.1.3.1, "Creating the Picker Task Flow"
- Section 19.5.1.3.2, "Registering the Picker for a Task Flow Parameter"

19.5.1.3.1 Creating the Picker Task Flow Create a picker task flow with a JSFF fragment. Design the fragment to display fields or options of your choice.

To create the picker task flow:

1. In your application project, create an ADF task flow, for example, `weather-picker-task-flow-definition`:

   a. From the **File** menu, choose **New**.

   b. In the New Gallery dialog, expand **Web Tier**, select **JSF**, then **ADF Task Flow**.

c. Click **OK**.

2. Add a `view` object to the task flow, for example, `weatherPicker`.
3. Double-click the view to create the `weatherPicker.jsff` fragment.

> **See Also:** For information about creating task flows, see the "Getting Started with ADF Task Flows" chapter in *Fusion Developer's Guide for Oracle Application Development Framework*.

4. Design the fragment with components of your choice. Example 19–14 shows a sample task flow containing two `Input Text` components that enable users to search for ZIP codes in an XML file, and two UI controls, `OK` and `Cancel`.

Example 19–14 Sample code in the Picker JSFF Fragment

```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:f="http://java.sun.com/jsf/core">
  <af:panelStretchLayout id="psl1">
    <f:facet name="center">
      <af:panelGroupLayout id="pgl1" layout="vertical">

        <af:panelGroupLayout id="pgl2" layout="horizontal">
          <!-- Text field and Search button to search for a city by specifying the
ZIP code -->
          <af:inputText label="Enter Zip Code" id="it1"
                        value="#{pageFlowScope.weatherPicker.searchZipcode}"/>
          <af:commandButton text="Search By Zipcode" id="cb1"

actionListener="#{pageFlowScope.weatherPicker.zipcodeSearch}"/>
        </af:panelGroupLayout>

        <af:panelGroupLayout id="pgl3" layout="horizontal">
          <!-- Text field and Search button to search for a city by specifying the
city name -->
          <af:inputText label="Enter City" id="it2"
                        value="#{pageFlowScope.weatherPicker.searchCity}"/>
          <af:commandButton text="Search By City" id="cb2"

actionListener="#{pageFlowScope.weatherPicker.citySearch}"/>
        </af:panelGroupLayout>

        <!-- Output components to display the result from the search -->
        <af:outputFormatted value="#{pageFlowScope.weatherPicker.city}"
                            id="of2"/>
        <af:outputFormatted value="#{pageFlowScope.weatherPicker.zipcode}"
                            id="of3"/>

      </af:panelGroupLayout>
    </f:facet>
    <f:facet name="bottom">
      <af:panelGroupLayout layout="horizontal" halign="end" id="pkrPgl">

        <!-- OK button -->
        <af:commandButton action="ok"

actionListener="#{pageFlowScope.weatherPicker.populateReturnValue}"
                          text="#{Bundle.OK_BUTTON_TEXT}" id="okBtn"/>
        <af:spacer width="5" id="s1"/>

        <!-- Cancel button -->
        <af:commandButton
actionListener="#{pageFlowScope.weatherPicker.closePickerPopup}"
                          text="#{Bundle.CANCEL_BUTTON_TEXT}"
                          id="cnclBtn"/>
      </af:panelGroupLayout>
    </f:facet>
  </af:panelStretchLayout>
</jsp:root>
```

The action listeners on the OK and Cancel buttons reference a managed bean, weatherPicker. This bean also contains the logic to populate the parameter on the main task flow with the value specified in the picker.

5. Create the bean that you referenced in the picker task flow definition and add the logic to return values to the main task flow.

   The following example shows the relevant code snippet of the weatherPicker bean, which contains the logic to search for a city by name and return the ZIP code:

```
package portal.weather.picker;

. . .

  public void populateReturnValue(ActionEvent ae) {
    Map map =
(Map)RequestContext.getCurrentInstance().getPageFlowScope().get("outParam");
    if (map != null)
      map.put("outParamVal", _zipcode);
  }

  public void closePickerPopup(ActionEvent ae) {
    UIComponent component = ae.getComponent();
      while (!(component instanceof RichPopup))
        component = component.getParent();
        if (component != null)
          ((RichPopup)component).cancel();
  }
  . . .
```

6. Register the weatherPicker bean in the task flow definition file, as shown in the following example:

```
<managed-bean id="pickerbean">
  <managed-bean-name id="pickerbeanname">weatherPicker</managed-bean-name>
  <managed-bean-class
id="pickerbeanclass">portal.weather.picker.WeatherPicker</managed-bean-class>
  <managed-bean-scope id="pickerbeanscope">pageFlow</managed-bean-scope>
</managed-bean>
```

7. Define two input parameters, inParamVal and outParam, on the picker task flow, as shown in the following example:

```
<!-- Parameter used to store the value that must be passed to the main task
flow -->
<input-parameter-definition id="pickerip1">
  <name id="pickerip1name">outParam</name>
  <value>#{pageFlowScope.outParam}</value>
  <class>java.util.Map</class>
</input-parameter-definition>

<!-- Parameter used to store the value specified by the user in the picker -->
<input-parameter-definition id="pickerip2">
  <name id="pickerip2name">inParamVal</name>
  <value>#{pageFlowScope.inParamVal}</value>
  <class>java.lang.String</class>
</input-parameter-definition>
```

These parameters are referenced in `pageFlowScope` and will be used to read and populate the main task flow parameter, `zipCode`. When a user clicks the picker icon next to the Zip Code field, the current value of the field is passed to the session bean using `inParamVal`. When a user specifies a city name in the picker task flow and clicks OK, the bean gets the ZIP code for that city and passes it to the main weather task flow using `outParam`.

8. Define task flow return activities and control flow rules for the `OK` and `Cancel` buttons. These activities and rules ensure that control is returned to the task flow when either of the buttons is clicked. You can define task flow return activities and control flow rules as shown in the following example:

```
<!-- The outcome to be returned to the task flow if a user clicks OK -->
<task-flow-return id="ok">
  <outcome id="ok1">
    <name id="okayed">ok</name>
  </outcome>
</task-flow-return>
<!-- The outcome to be returned to the task flow if a user clicks Cancel -->
<task-flow-return id="cancel">
  <outcome id="cancel1">
    <name id="canceled">cancel</name>
  </outcome>
</task-flow-return>

<!-- Rules to pass control flow to the ok activity if the user clicks OK and to
the cancel activity if the user clicks Cancel -->
<control-flow-rule id="flowrule1">
  <from-activity-id id="fromactivity1">weatherPicker</from-activity-id>
  <control-flow-case id="flowcase1">
    <from-outcome id="fromoutcome1">ok</from-outcome>
    <to-activity-id id="toactivity1">ok</to-activity-id>
  </control-flow-case>
  <control-flow-case id="flowcase2">
    <from-outcome id="fromoutcome2">cancel</from-outcome>
    <to-activity-id id="toactivity2">cancel</to-activity-id>
  </control-flow-case>
</control-flow-rule>
```

The task flow definition will now have code similar to the following example:

```
<?xml version="1.0" encoding="US-ASCII" ?>
<adfc-config xmlns="http://xmlns.oracle.com/adf/controller" version="1.2">
  <task-flow-definition id="weather-picker-task-flow-definition">
    <default-activity id="pickeractivity1">weatherPicker</default-activity>
    <input-parameter-definition id="pickerip1">
      <name id="pickerip1name">outParam</name>
      <value>#{pageFlowScope.outParam}</value>
      <class>java.util.Map</class>
    </input-parameter-definition>
    <input-parameter-definition id="pickerip2">
```

```
      <name id="pickerip2name">inParamVal</name>
      <value>#{pageFlowScope.inParamVal}</value>
      <class>java.lang.String</class>
    </input-parameter-definition>
    <managed-bean id="pickerbean">
      <managed-bean-name id="pickerbeanname">weatherPicker</managed-bean-name>
      <managed-bean-class
id="pickerbeanclass">portal.weather.picker.WeatherPicker</managed-bean-class>
      <managed-bean-scope id="pickerbeanscope">pageFlow</managed-bean-scope>
    </managed-bean>
    <view id="weatherPicker">
      <page>/weatherPicker.jsff</page>
    </view>
    <task-flow-return id="ok">
      <outcome id="ok1">
        <name id="okayed">ok</name>
      </outcome>
    </task-flow-return>
    <task-flow-return id="cancel">
      <outcome id="cancel1">
        <name id="canceled">cancel</name>
      </outcome>
    </task-flow-return>
    <control-flow-rule id="flowrule1">
      <from-activity-id id="fromactivity1">weatherPicker</from-activity-id>
      <control-flow-case id="flowcase1">
        <from-outcome id="fromoutcome1">ok</from-outcome>
        <to-activity-id id="toactivity1">ok</to-activity-id>
      </control-flow-case>
      <control-flow-case id="flowcase2">
        <from-outcome id="fromoutcome2">cancel</from-outcome>
        <to-activity-id id="toactivity2">cancel</to-activity-id>
      </control-flow-case>
    </control-flow-rule>
    <use-page-fragments/>
  </task-flow-definition>
</adfc-config>
```

9. Save the task flow definition file.

19.5.1.3.2 Registering the Picker for a Task Flow Parameter To display a custom picker for a task flow parameter, you must configure the picker for that parameter in the Composer extension file, `pe_ext.xml`.

To configure a picker for a task flow parameter:

1. If it does not already exist, create the Composer extension file, `pe_ext.xml` in the `META-INF` directory under the project's Web context root (for example, in the *`APPLICATION_HOME`*`\Portal\adfmsrc\META-INF` directory):
   a. From the **File** menu, select **New**.
   b. In the New Gallery dialog, expand **General**, select **XML**, then **XML Document**.
   c. Click **OK**.

   Name the file `pe_ext.xml`.

2. Add an `<lov-config>` section and include the task flow definition with an `<enumeration>` element referencing the picker task flow, as shown in the following code example:

```
<?xml version="1.0" encoding="UTF-8"?>
<pe-extension xmlns="http://xmlns.oracle.com/adf/pageeditor/extension">
  <lov-config>
    <task-flow-definition
taskflow-id="/WEB-INF/weather-task-flow-definition.xml#weather-task-flow-defini
tion">
      <!-- Parameter for which you defined the picker -->
      <input-parameter-definition>
        <name>zipCode</name>
        <value>null</value>
        <!-- enumeration items coming from the picker task flow -->
        <enumeration
picker="/WEB-INF/weather-picker-task-flow-definition.xml#weather-picker-task-fl
ow-definition"/>
      </input-parameter-definition>
    </task-flow-definition>
  </lov-config>
</pe-extension>
```

You can configure pickers for any number of parameters within the `<lov-config>` section.

3. Save the file.

When you edit the main task flow at runtime, the Component Properties dialog displays a magnifier icon next to that parameter. Clicking the icon invokes the picker task flow, in which users can select a value.

19.5.1.4 Configuring an LOV from a Global List

If you want to reuse an LOV in different task flow parameters within the application, you can define the LOV at a global level and reference it from the task flow parameters.

To configure an LOV from a global list:

1. If it does not already exist, create the Composer extension file, `pe_ext.xml` in the `META-INF` directory under the project's Web context root (for example, in the *`APPLICATION_HOME`*`\Portal\adfmsrc\META-INF` directory):

   a. From the **File** menu, select **New**.

   b. In the New Gallery dialog, expand **General**, select **XML**, then **XML Document**.

   c. Click **OK**.

   Name the file `pe_ext.xml`.

2. Add an `<lov-config>` section and list the values within an `<enumeration>` element (outside of the task flow definition), as shown in the following code example:

```
<lov-config>
<!-- Global enumerations ->
  <enumeration id="temperature">
    <item>
      <name>Celcius</name>
      <value>c</value>
      <description>Temperature in Celcius</description>
    </item>
    <item>
      <name>Fahrenheit</name>
      <value>f</value>
      <description>Temperature in Fahrenheit</description>
    </item>
  </enumeration>
  <task-flow-definition . . . >
  . . .
<lov-config>
```

You can configure any number of global LOVs within the `<lov-config>` section.

3. Reference this global LOV from any input parameter definition in the `pe_ext.xml` file, as shown in the following example:

```
<task-flow-definition
taskflow-id="/WEB-INF/weather-task-flow-definition.xml#weather-task-flow-defini
tion">
  <input-parameter-definition>
    <name>tempUnits</name>
    <value>Celsius</value>
    <enumeration ref="temperature"/>
  </input-parameter-definition>
</task-flow-definition>
```

4. Save the file.

19.5.2 What Happens at Runtime

Depending on the type of LOV you configured for the task flow parameter, users will see different options to specify parameter values.

The Temp Units field will list values from the static LOV that you defined in the `pe_ext.xml` file.

If you configured a picker for the Zipcode field, the field shows a magnifier icon to its right. This icon invokes a picker that allows users to select a city by providing a name or ZIP code.

19.6 Configuring Event Handlers for Composer UI Events

Event handlers are Java classes registered with Composer and called when a user performs an action on the page. For example, when a user clicks a **Save** button, Composer calls back into the application code to give the application a chance to respond to the Save *event*. In addition to the event handlers that Composer provides by default, you can configure additional handlers for application-specific events, for example, saving changes in a custom property panel.

This section describes how to create and register event handlers for UI events in Composer. It contains the following subsections:

- Section 19.6.1, "How to Create and Register Handlers for Composer UI Events"
- Section 19.6.2, "What Happens When You Create and Register Event Handlers"
- Section 19.6.3, "Additional Composer Event Handler Configurations"

19.6.1 How to Create and Register Handlers for Composer UI Events

When you register an event handler with Composer, it is called when the corresponding event is fired in the Composer UI.

This section describes how to create an event handler and register it with Composer. It contains the following subsections:

- Section 19.6.1.1, "UI Events that Support Event Handler Registration"
- Section 19.6.1.2, "Creating a Save Event Handler: Example"
- Section 19.6.1.3, "Registering an Event Handler with Composer"

19.6.1.1 UI Events that Support Event Handler Registration

Table 19–1 lists the UI events for which Composer currently supports registering of handlers.

Table 19–1 Events for Which Registering Handlers are Supported

Event	Cause	Event Type	Listener Interface (oracle.adf.view.page.editor.event)	Method	Event Interface
Save	Invoked when a user clicks the **Save** or **Save and Label** button on the Composer toolbar, or the **Apply** (save) or **OK** (save and close) button in the Component Properties dialog or Page Properties dialog.	`save`	`SaveListener`	`processSave`	`SaveEvent`
Close	Invoked when a user clicks the **Close** button on the Composer toolbar.	`close`	`CloseListener`	`processClose`	`CloseEvent`
Deletion	Invoked when a user deletes the component.	`delete`	`DeletionListener`	`processDeletion`	`DeletionEvent` Get the deleted component using `getComponent`.

Table 19–1 (Cont.) Events for Which Registering Handlers are Supported

Event	Cause	Event Type	Listener Interface (oracle.adf.view.page.editor.event)	Method	Event Interface
Addition	Invoked when a user adds a component to the page from the resource catalog by clicking the **Add** button against an item.	`add`	`AdditionListener`	`processAddition`	`AdditionEvent`
Selection	Invoked when a user selects: - The **Edit** icon on a Panel Customizable or Show Detail Frame component in the Design or Add Content view - A component on the page or in the hierarchy in Structure view	`select`	`SelectionListener`	`processSelection`	`SelectionEvent`
Attribute Change	Invoked when a user changes an attribute. If the attribute change is invalid, the listener should raise an `AbortProcessingException` and set the severity for the warning message. If the severity is set to FATAL or ERROR (default), the user will be forced to correct the attribute in the property inspector before clicking **Apply** or **OK**. All other severities will display a notification popup but allow the user to save without further action.	`attribute-change`	`AttributeChangeListener`	`processAttributeChange`	`AttributeChangeEvent` Get and set the warning severity using `getMessageSeverity` and `setMessageSeverity`. Define a message for the warning using `setMessageSummary` and `setMessageDetail`. To display a message even if the listener verifies an attribute change with no errors, use `setMessageSummary("")` `setMessageSeverity(FacesMessage.SEVERITY_INFO);` `setShowMessage(true)`

19.6.1.2 Creating a Save Event Handler: Example

To register an event with Composer, you must first create a Java class and implement the appropriate listener for the event handler. This section describes the steps to create a Save event handler. You can perform similar steps to create event handlers for all the supported events listed in Table 19–1.

A Save event handler is called when a user clicks the **Save** button on the Composer toolbar or the **Apply** or **OK** button in the Component Properties or Page Properties dialog. A Save event handler must implement `oracle.adf.view.page.editor.event.SaveListener`. The `isCommit` method of the Save event can be used to differentiate between changes made to the page and to component properties. A value of `true` implies that the user clicked the Save button on the Composer toolbar to save changes made to the page. A value of `false` implies that the user clicked the Apply or OK button in the Component Properties dialog to save changes made to component properties.

To create a Save event handler:

1. In JDeveloper, select the **Portal** project, and from the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.
3. In the Create Java Class dialog, specify a name for the class, for example, `SaveHandler`.
4. Under the Optional Attributes section, add the `oracle.adf.view.page.editor.event.SaveListener` interface.

> **Note:** If you are not able to see the `oracle.adf.view.page.editor` classpath, make sure that Composer is included in the project's libraries and classpath. To do this, right-click the project in the Application Navigator and select **Project Properties**. In the Project Properties dialog, select **Libraries and Classpath**, and add **Composer** to the list.

5. Click **OK**.

   The Java class source looks like the following:

```
package view;

import javax.faces.event.AbortProcessingException;

import oracle.adf.view.page.editor.event.SaveEvent;
import oracle.adf.view.page.editor.event.SaveListener;

public class SaveHandler implements SaveListener {
  public Class1() {
    super();
  }
  public void processSave(SaveEvent saveEvent) throws AbortProcessingException
{
// Your implementation goes here
  }
}
```

   You must declare the `processSave` method as `throws AbortProcessingException` because the method may throw this exception if the event must be canceled. You can include the reason for canceling this event in the Exception object when you create it.

   On throwing this exception, further processing of this event is canceled and the listeners that are in the queue are skipped.

You can create event handlers for all supported events by performing steps similar to these.

19.6.1.3 Registering an Event Handler with Composer

After creating and implementing an event handler, you must register it with Composer. Registration is necessary for ensuring that the handler is called back by Composer when the corresponding event occurs in the UI.

Register event handlers in the Composer extension file, `/META-INF/pe_ext.xml`. For more information about creating this file, see Section 19.2.1.2, "Registering Add-Ons with Composer."

To register an event handler:

1. In the application's `pe_ext.xml` file, add the following entries:

   ```
   <event-handlers>
     <event-handler event="save">view.SaveHandler</event-handler>
   </event-handlers>
   ```

   The values you provide for the `event` attribute and between the `event-handler` tags are unique to the type of event being entered and the name you specified for the event class.

2. Save the file.

19.6.2 What Happens When You Create and Register Event Handlers

At runtime, registered event handlers are called according to the sequence in the extension file and according to the order in which they were found on the class path. Composer's native event handler is called last.

On invocation of an event handler's `process`*`EventName`* method, if an event handler throws `AbortProcessingException`, then the event is canceled and no further event handlers are called, including Composer's native event handlers.

If, however, an error occurs while instantiating an event handler, then Composer continues with the next event handler. A warning message is logged.

19.6.3 Additional Composer Event Handler Configurations

For every UI event triggered on the page in Composer, the corresponding event handler calls back a method from a listener registered with the application. By performing some additional configurations, you can specify the sequence in which event handlers are executed and configure a listener to terminate a process or notify Composer that the event has been handled.

19.6.3.1 Specifying a Sequence Number for an Event Handler

By specifying the sequence for event handlers, you can decide on the order in which the event handlers, and therefore the listeners, are called. You can assign a sequence number to a listener or modify the default value by defining a `sequence` attribute against the registered event handler in the `pe_ext.xml` file.

To specify a sequence number for a listener:

1. In the application's `pe_ext.xml` file, locate the `event-handler` element for the handler that you want to sequence.

2. Add a `sequence` attribute as follows:

   ```
   <event-handlers>
     <event-handler event="save" sequence="101">view.SaveHandler</event-handler>
   </event-handlers>
   ```

The value for the `sequence` attribute must be a positive integer. If you do not define this attribute, the event handler is internally assigned a default sequence number of `100`.

Composer built-in listeners and listeners with no sequence numbers are assigned a default sequence number of `100`. If you want your event handler to be called before other event handlers, you must specify a value lesser than `100`.

3. Save the file.

19.6.3.2 Terminating Event Processing

You can configure an event handler to terminate processing of the current event and all subsequent events by throwing an exception. For this, you must declare the method used while implementing the listener as `throws AbortProcessingException`. In addition, you can configure the handler to notify Composer that the event has been processed by using the `Event.setEventHandled(true)` method.

For example, you can configure a `delete` event handler to terminate the current event and all pending delete events and throw an exception when a user attempts to delete a component in Composer. To enable this, you must implement the `DeletionListener` interface as shown in Example 19–15.

Example 19–15 DeletionListener Implementation

```
public class DeleteHandler implements DeletionListener
{
  ...
  public void processDeletion(DeletionEvent delEvent) throws
AbortProcessingException
  {
    // Get the component that must be deleted
    UIComponent comp = delEvent.getComponent();

    if (comp != null)
    {
      try
      {
        // Assuming that a custom method, handleDelete(comp), handles deletion of
        // a component and returns true on successful deletion and false in case
        // of failure
        boolean deleteSucceeded = handleDelete(comp);

        // If deletion failed, then notify Composer that the delete event
        // has been handled. No further events are processed.
        if (!deleteSucceeded)
          delEvent.setEventHandled(true);
      }

      catch (Exception e)
      {
       // Catch Exception throw by handleDelete(comp) and handle it by throwing
       // AbortProcessingException to stop processing of delete events.
       throw new AbortProcessingException(e)
      }
    }
  }
  ...
}
```

19.7 Configuring Drop Handlers in the Resource Catalog

Drop handlers are Java classes registered with Composer and called when users click an Add link in the resource catalog. A drop handler declares the data flavors it can handle. Each resource in the catalog has a flavor. When a user clicks an Add link next to a resource, Composer queries all the registered drop handlers to check if they can handle the flavor. If only one drop handler can handle that flavor, then control is passed to that drop handler and the resource is added to the page immediately. If more than one drop handler can handle the flavor, then a context menu displays available drop handlers to users. The resource is dropped on the page when a user selects a Java drop handler from the context menu.

An example for a resource with multiple Java drop handlers is the Personal Documents subfolder available within the Documents folder, if you configured the Documents service in your catalog. This subfolder can be added as a Content Presenter, Document List Viewer, or Document Library.

> **Note:** The `AdditionListener` mechanism used to handle an `Add` operation in release 11.1.1.1 is still available, but now Composer calls drop handlers first to handle an `Add` operation in the catalog. It is recommended that you convert existing `AdditionListeners` to drop handlers.

This section describes the procedure to create and register drop handlers in your application. It contains the following subsections:

- Section 19.7.1, "How to Create and Register Java Drop Handlers"
- Section 19.7.2, "What Happens at Runtime"

19.7.1 How to Create and Register Java Drop Handlers

This section describes how to create a sample drop handler for adding XML content from the resource catalog and register the drop handler with Composer. It contains the following subsections:

- Section 19.7.1.1, "Creating a Drop Handler"
- Section 19.7.1.2, "Registering a Drop Handler with Composer"
- Section 19.7.1.3, "Adding an XML Component to the Resource Catalog"

19.7.1.1 Creating a Drop Handler

To create a drop handler with Composer, you must first extend the abstract base class, `DropHandler`, and implement the `getName()`, `getAcceptableFlavors()`, and `handleDrop()` methods. This section describes an example to add an XML component called `Test` to the resource catalog and create a drop handler named `Custom XML` for adding XML content.

To create a drop handler:

1. In JDeveloper, select the **Portal** project, and from the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.
3. In the Create Java Class dialog, specify a name for the class, for example, `TestDropHandler`.

4. In the Extends field, enter or browse to select the `Drophandler` class, `oracle.adf.view.page.editor.drophandler.DropHandler`.

> **Note:** If you are not able to see the `oracle.adf.view.page.editor` classpath, make sure that Composer is included in the project's libraries and classpath. To do this, right-click the project in the Application Navigator and select **Project Properties**. In the Project Properties dialog, select **Libraries and Classpath**, and add **Composer** to the list.

5. Add the required import statements and click **OK**.

   The Java class source must look like the following:

```
package test;

import java.awt.datatransfer.DataFlavor;
import java.awt.datatransfer.Transferable;

import java.io.ByteArrayInputStream;

import javax.faces.component.UIComponent;
import javax.faces.context.FacesContext;

import javax.xml.parsers.DocumentBuilder;
import javax.xml.parsers.DocumentBuilderFactory;

import oracle.adf.rc.component.XmlComponentFactory;
import oracle.adf.view.page.editor.drophandler.DropEvent;
import oracle.adf.view.page.editor.drophandler.DropHandler;

import org.apache.myfaces.trinidad.change.AddChildDocumentChange;
import org.apache.myfaces.trinidad.change.ChangeManager;
import org.apache.myfaces.trinidad.change.DocumentChange;
import org.apache.myfaces.trinidad.context.RequestContext;

import org.w3c.dom.Document;
import org.w3c.dom.DocumentFragment;

public class TestDropHandler extends DropHandler {
    public TestDropHandler() {
        super();
    }

    public String getName() {
        return null;
    }

    public DataFlavor[] getAcceptableFlavors() {
        return new DataFlavor[0];
    }

    public boolean handleDrop(DropEvent dropEvent) {
        return false;
    }
}
```

6. Implement the `getName()` method as follows to return the name of the drop handler:

```
public class TestDrophandler extends DropHandler {
    public TestDrophandler() {
        super();
    }

    public String getName() {
        return "Custom XML";
    }
. . .
```

This value (`Custom XML`) appears in the context menu on the Add link next to the XML component in the resource catalog.

7. Implement the `getAcceptableFlavors()` method as follows to get a list of supported data flavors for the XML component:

```
public class TestDropHandler extends DropHandler
{
  private static final DataFlavor[] ACCEPTABLE_FLAVORS =
  { XmlComponentFactory.XML_STRING_FLAVOR };

    . . .

    public DataFlavor[] getAcceptableFlavors() {
    return ACCEPTABLE_FLAVORS;
    }
    . . .
```

8. Implement the `handleDrop(DropEvent)` method as shown in the following sample file to handle the drop event and add the XML component to the page.

```
public class TestDropHandler extends DropHandler
{
  . . .

  public boolean handleDrop(DropEvent de) {
    Transferable transferable = de.getTransferable();
    UIComponent container = de.getContainer();
    int index = de.getDropIndex();

    try {
        FacesContext context = FacesContext.getCurrentInstance();
        RequestContext rctx = RequestContext.getCurrentInstance();

        String fragMarkup = null;

        // Get the TransferData from the Transferable (expecting a String)
        Object data = getTransferData(transferable);
        if (data instanceof String) {
          fragMarkup = "<?xml version='1.0' encoding='UTF-8'?>" + (String)data;
        } else {
            return false;
        }

        // Get a DocumentBuilder
        DocumentBuilderFactory factory = DocumentBuilderFactory.newInstance();
        factory.setNamespaceAware(true);
        factory.setValidating(false);
        DocumentBuilder builder = factory.newDocumentBuilder();

        // Parse the xml string into a Document object using DocumentBuilder
        byte[] markupBytes = fragMarkup.getBytes();
        Document newDoc =
        builder.parse(new ByteArrayInputStream(markupBytes));

        // Transform the Document into a DocumentFragment
        DocumentFragment docFrag = newDoc.createDocumentFragment();
        docFrag.appendChild(newDoc.getDocumentElement());

        // Create an "add child" document change, that is, insert the fragment
        DocumentChange change = null;
        if (index < container.getChildCount()) {
        // Get the ID of the component we'll be adding just before
           String insertBeforeId = container.getChildren().get(index).getId();
           change = new AddChildDocumentChange(insertBeforeId, docFrag);
        } else {
            change = new AddChildDocumentChange(docFrag);
        }

        // Apply the "add child" DocumentChange using ChangeManager
        ChangeManager changeManager = rctx.getChangeManager();
        changeManager.addDocumentChange(context, container, change);

        // Refresh the target container using PPR
        rctx.addPartialTarget(container);

        // Mark the drop as completed.
        return true;
        } catch (Exception e) {
            return false;
        }
    }
```

In this example, a `DropEvent` parameter is passed to the `handleDrop` method. This parameter has three attributes that can be described as follows:

- `transferable`, like `DataFlavor`, is a standard Java class that contains the data being added.
- `container` is the container into which component must be dropped.
- `index` is the position of the component inside the container. For example, first, second, and so on.

9. Save the `TestDropHandler.java` file.

19.7.1.2 Registering a Drop Handler with Composer

After implementing the drop handler, you must register it with Composer. Registration is necessary for ensuring that the handler is called by Composer when a user clicks an Add link in the catalog. Register drop handlers in the Composer extension file, `/META-INF/pe_ext.xml`. For more information about creating this file, see Section 19.2.1.2, "Registering Add-Ons with Composer."

To register a drop handler:

1. In the `pe_ext.xml` file, add the following entries:

```
<drop-handlers>
  <drop-handler>test.TestDropHandler</drop-handler>
</drop-handlers>
```

where `TestDropHandler` is the name of the drop handler implementation.

2. Save the file.

You can register any number of drop handlers in the extension file by adding that many `<drop-handler>` elements.

19.7.1.3 Adding an XML Component to the Resource Catalog

Since you created a drop handler for XML components generated by the `XmlComponentFactory` class, you can test how the drop handler works at runtime by adding an XML component to the resource catalog and then adding that component to your page at runtime.

To add an XML component to the catalog:

1. Open the default catalog definition file, `default-catalog.xml`.

   For information about the location of this file, see Section 14.4, "Selecting the Default Resource Catalog."

2. Add the following code within the `<contents>` section of the file:

```
<component id="pc" factoryClass="oracle.adf.rc.component.XmlComponentFactory">
  <attributes>
    <attribute attributeId="Title" value="Test"/>
    <attribute attributeId="Description" value="XML content you can add to
application pages"/>
    <attribute attributeId="IconURI" value="/adf/pe/images/elementtext_
qualifier.png"/>
    </attributes>
    <parameters>
      <parameter id="xml">
        <af:outputText value="Hello!"
xmlns:af="http://xmlns.oracle.com/adf/faces/rich"/>
      </parameter>
    </parameters>
</component>
```

3. Save the `default-catalog.xml` file.

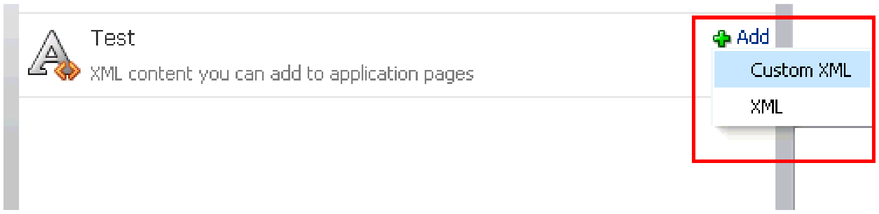
   At runtime, the resource catalog shows the XML component. For more information, see Section 14.3.5, "How to Add a Custom Component to a Resource Catalog."

19.7.2 What Happens at Runtime

When a user clicks the Add link against a component in the catalog, all drop handlers supporting that flavor are displayed as options on the context menu of the Add link. However, if only a single drop handler is available to handle that flavor, then the resource is added to the page immediately.

Figure 19–13 shows the context menu displayed on clicking the Add link of the `Test` XML component with the `Custom XML` option and the default XML option.

Figure 19–13 Drop Handlers on an XML Component in the Catalog



19.8 Defining Property Filters

Some component properties are not displayed in Composer's Component Properties dialog because they are filtered out by default. The default filters are defined in the `<filter-config>` section of the Composer's extension file (/META-INF/pe_ext.xml).

Global filters filter attributes for all components. They are defined using the `<global-attribute-filter>` tag. Tag-level filters filter attributes for a specified component only. They are defined using the `<taglib-filter>` tag.

> **Note:** In an extension file, you can have any number of `<taglib-filter>` tags under `<filter-config>`, but you can have only one `<global-attribute-filter>` tag to define all global attribute filters.

You can define additional filters to hide more properties in the Component Properties dialog. This section describes how. It contains the following subsections:

- Section 19.8.1, "How to Define Property Filters"
- Section 19.8.2, "What Happens at Runtime"
- Section 19.8.3, "How to Remove Property Filters"

19.8.1 How to Define Property Filters

Composer defines a built-in filter configuration. You can use the extension file, `pe_ext.xml`, to define additional property filters and to delete filters. You can define any number of filters, even for a single tag, in different extension files. Composer merges the filtering information from all the extension files.

> **Note:** For information about creating the `pe_ext.xml` file, see Section 19.2.1.2, "Registering Add-Ons with Composer."

To define property filters in an extension file, use the `filter-config` element. The following elements are defined for the contained `attribute` tags.

- The `label` element allows you to override the default label for the element in the UI. You can use EL to retrieve localized strings or display different labels in design and source view.
- The `view` element can be used to filter attributes in specific tags for a specific view (`design` or `source`).
- The `filtered` element can be used to display an attribute even if it is globally filtered. To restore a globally filtered element, use `filtered="false"`.

In the pe_ext.xml file, add the filter-config element as shown in the following example:

```
<filter-config>
   <global-attribute-filter>
    <attribute name="readOnly" filtered="false" label="Read Only"/>
    <attribute name="required" filtered="false" label="Mandatory"/>
    <attribute name="shortDesc" filtered="false" label="#{Bundle.PNL_TB_
SHORTDESC}"/>
  </global-attribute-filter>

  <taglib-filter namespace="http://xmlns.oracle.com/adf/faces/rich">
    <tag name="goLink">
      <attribute name="accessKey" view="design"/>
      <attribute name="targetFrame" filtered="false" view="source"/>
      <attribute name="destination" filtered="false"
label="#{pageEditorPanelBean.layoutView ?  'Where do you want to surf?' :
'Destination'}"/>
    </tag>
    <tag name="inputText">
      <attribute name="all" view="design"/>
      <attribute name="label" label="Field Name" filtered="false" />
      <attribute name="readOnly" filtered="false" />
      <attribute name="required" filtered="false" />
      <attribute name="rendered" filtered="false" />
      <attribute name="wrap" filtered="false" />
    </tag>
  </taglib-filter>
</filter-config>
```

Save the file.

19.8.2 What Happens at Runtime

At runtime, when you edit a component's properties, the properties that were filtered out are not rendered in the Component Properties dialog.

19.8.3 How to Remove Property Filters

You can remove global and tag-level filters so that previously filtered properties are now rendered in the Component Properties dialog. This is useful for displaying properties that are filtered out by Composer's built-in filters or by another extension file defined elsewhere in the application.

> **Note:** After you remove a property filter, it is rendered in the Component Properties dialog even if a filter is defined for that property in another extension file.

To remove a property filter:

1. Edit the Composer extension file, pe_ext.xml, available in the META-INF directory.

   You can remove property filters by editing entries in this file.

2. Search for the attribute from which to remove the filter, and set filtered to false in the <attribute> tag as shown in the following example:

```
<pe-extension xmlns="http://xmlns.oracle.com/adf/pageeditor/extension">
. . .
<filter-config>
```

```
  <global-attribute-filter>
    <attribute name="accessKey" filtered="false" />
    <attribute name="attributeChangeListener" />
    . . .
  </global-attribute-filter>
  <taglib-filter namespace="http://xmlns.oracle.com/adf/faces/rich">
    <tag name="activeCommandToolbarButton">
      . . .
      <attribute name="windowWidth" filtered="false"/>
    </tag>
  </taglib-filter>
</filter-config>
</pe-extension>
```

3. Save the file.

19.9 Enabling Parameter Support on the Customization Manager Task Flow

If you enable parameter passing on the task flow, administrators can customize Customization Manager by setting certain parameters. By default, an administrator cannot pass parameters to the Customization Manager task flow in Composer. Table 19–2 describes the parameters supported by the Customization Manager task flow.

Table 19–2 Customization Manager Task Flow Parameters

Parameter Name	Value	Description
defaultPage	Page URI	Used to specify the default page to be managed. If this value is null, the current page will be used.
dynamicNodeMap	`Map<String,List<CustomizationManagerNode>>`	Used to return a list of pages, XML documents, or task flows on a given page or fragment, using the following format: `Page1.jspx -> List of {CustomizationManagerTaskFlowNode or CustomizationManagerPageNode or CustomizationManagerXMLNode }` Use `CustomizationManagerTaskFlowNode` to pass dynamic taskflows in that page. Use `CustomizationManagerPageNode` to pass page template of the page. Use `CustomizationManagerXMLNode` to pass any XML documents owned by this page.
showBase	true/false Default: false	Used to show or hide the column for the base document.
showCurrentLayers	true/false Default: true	Used to show or hide the column showing details about the currently used layer.

Table 19–2 (Cont.) Customization Manager Task Flow Parameters

Parameter Name	Value	Description
showAllLayers	true/false Default: true	Used to show or hide the column showing details about layers other than the current one.
showLayersforCurrent	`Map<String,List<String>>`	Used to specify a list of layers that must be available in the Current Context column. This parameter takes the layer name and list of layer values and patterns that must be shown in the Current Context column. See Example 19–16 for more information.
showLayersforAll	`Map<String,List<String>>`	Used to specify a list of layers that must be available in the All Layers column. This parameter takes the layer name and list of layer values and patterns that must be shown in the All Layers column. See Example 19–16 for more information.
labelPrefixes	`List<String>`	Used to specify a list of space-separated label prefixes that must be displayed in the Promote dialog. Only those labels created with the specified prefixes are displayed in the Promote dialog. By default, all the labels are displayed.
maxDepth	String	Used to restrict the depth of a task flow hierarchy in the Customization Manager. The default value is `10`. Consequently, if you have a task flow with cyclic dependency, this parameter prevents a stack overflow by limiting the depth to ten nested task flows. You can display a maximum nesting of 10 task flows. Customization Manager displays only a depth of 10 even if you specify a value higher than 10.
showDownload	true/false Default: true	Used to show or hide the Download link.
showUpload	true/false Default: true	Used to show or hide the Upload link.
showDelete	true/false Default: true	Used to show or hide the Delete link.
showPromote	true/false Default: true	Used to show or hide the Promote link.

Note: The implementation of `Map` and `List` must be `Serializable` for Customization Manager to work correctly in a cluster-based environment. Typically, `ArrayList` and `HashMap` are `Serializable`.

This section describes the steps to enable parameter editing on the Customization Manager task flow. It contains the following subsections:

- Section 19.9.1, "How to Set the Customization Manager Task Flow Parameters"
- Section 19.9.2, "What Happens When You Enable Parameter Support"

19.9.1 How to Set the Customization Manager Task Flow Parameters

To pass parameters to the Customization Manager task flow, you must define the `parameters` attribute as part of the Customization Manager add-on panel configuration in your application's `adf-config.xml` file.

To enable parameter editing on the task flow:

1. Open the application's `adf-config.xml` file, located in the `ADF META-INF` folder under `Descriptors` in the Application Resources panel.
2. Add the following namespace within the `adf-config` element in the file:

   ```
   xmlns:pe="http://xmlns.oracle.com/adf/pageeditor/config"
   ```

3. Add a `<pe:page-editor-config>` entry with the namespace and include an `<pe:addon-panels>` entry.

   Within `<pe:addon-panels>`, add an `<pe:addon-panel>` entry for the default Customization Manager panel and define the `parameters` attribute by setting it to `appUtilBean.customizationManagerParams`, as shown in Example 19–16.

Example 19–16 Customization Manager Add-On Referenced in adf-config.xml

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  <pe:addon-panels>
    <pe:addon-panel name="oracle.adf.pageeditor.addonpanels.customization-manager"
parameters="#{AppUtilBean.customizationManagerParams}"/>
    . . .
  </pe:addon-panels>
</pe:page-editor-config>
```

where `AppUtilBean` is a sample implementation of the `AppUtilBean` class, and is as shown in the following example:

```
public Map<String, Object> getCustomizationManagerParams()
{
  Map<String, Object> paramMap = new HashMap<String, Object>();
  Map<String, List<String>> showLayersForCurrent = new HashMap<String,
List<String>>();
  showLayersForCurrent.put("user", Arrays.asList("admin%", "weblogic"));
  paramMap.put("showLayersForCurrent", showLayersForCurrent);

  Map<String, List<String>> showLayersForAll = new HashMap<String,
List<String>>();
  showLayersForAll.put("enterprise", Arrays.asList("Frys"));
  paramMap.put("showLayersForAll", showLayersForAll);

  return paramMap;
```

```
}
```

4. Save the `adf-config.xml` file.

19.9.2 What Happens When You Enable Parameter Support

Customization Manager displays options to users based on the new parameter settings.

19.10 Customizing the Composer Toolbar

You can customize the default Composer toolbar by adding, removing, or rearranging elements and overriding existing elements. To enable toolbar extensibility, the Composer toolbar elements have been grouped into sections. You can work with these sections to customize your toolbar. Each section has a specific name and contains one or more elements inside it.

> **Notes:** The Save button is displayed on the toolbar only if the application is configured to use a sandbox. For more information, see Section 21.2, "Using Composer Sandbox."
>
> The Help icon is displayed on the toolbar only if you have configured a help provider in your application or hooked up help from Composer panels or dialogs.
>
> The Composer toolbar is created using the ADF Faces `Toolbox` tag. Each row in the toolbar is a `Toolbar` tag. Consequently, UI components such as separator bars are inherited from the `Toolbar` component.

Table 19–3 describes the toolbar areas.

Table 19–3 Toolbar Areas

Section or Area	Description
`message`	Area containing the message with the page name.
`statusindicator`	Area containing the status indicator.
`menu`	Area containing the View menu that allows users to switch between Design view and Structure view.
`addonpanels`	Area containing Composer add-ons. The add-ons are all displayed in a sequence within this area. For more information, see Section 19.2, "Creating Composer Add-Ons."
`help`	Area containing the Help icon.
`button`	Area containing the Save and Close buttons.
`stretch`	Wide space between two sections.
`newline`	A line break between sections. All sections after a line break are pushed to a new line on the toolbar.

Using toolbar sections, you can customize the Composer toolbar in the following ways:

- Rearrange and hide built-in elements

- Add new sections with custom elements
- Modify default sections to display custom elements

This section describes the steps to customize the Composer toolbar. It contains the following sections:

- Section 19.10.1, "How to Rearrange or Hide Toolbar Elements"
- Section 19.10.2, "What Happens at Runtime"
- Section 19.10.3, "How to Add New Sections to the Toolbar"
- Section 19.10.4, "How to Override a Toolbar Section to Display Custom Content"

19.10.1 How to Rearrange or Hide Toolbar Elements

Use the `toolbarLayout` attribute on a `Page Customizable` component to control which toolbar sections are displayed and the order in which they appear.

To customize the toolbar for all editable pages in the application, you can create a template, add a `Page Customizable` component to the template, and specify the `toolbarLayout` attribute against the `Page Customizable` component. You can then base all the pages in the application on that template.

If you do not specify a value for `toolbarLayout`, this attribute is internally set to `message addonpanels stretch button help`, which is the default layout for the Composer toolbar sections.

To customize the toolbar on an application page:

1. Open your customizable JSPX page in JDeveloper and select the `Page Customizable` component in the Structure window.
2. In the Property Inspector, specify space-separated values for the `toolbarLayout` attribute under Appearance.

   The section names in Table 19–3 are valid values for this attribute.

   > **Note:** You can add only one `stretch` value per row on the toolbar. If you add more than one `stretch` value, only the first one is displayed; all others are ignored.

   In Source view, the `toolbarLayout` attribute appears as shown in the following example:

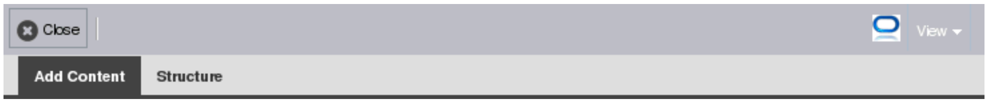
   ```
   <pe:pageCustomizable id="pageCustomizable1"
                        toolbarLayout="button stretch statusindicator menu"
     <cust:panelCustomizable id="panelCustomizable1" layout="scroll"/>
     <f:facet name="editor">
       <pe:pageEditorPanel id="pep1"/>
     </f:facet>
   </pe:pageCustomizable>
   ```

3. Save the JSPX file.

19.10.2 What Happens at Runtime

At runtime, the toolbar displays the sections you specified in the order you specified them (Figure 19–14).

Figure 19–14 Customized Composer Toolbar



19.10.3 How to Add New Sections to the Toolbar

You can add custom sections by creating facets and specifying the facet names in the `toolbarLayout` attribute. Populate the new facets with elements you want to display on the toolbar. The following example shows you how to create a section; specifically, how to add a **Report a Bug** icon that opens a popup that enables users to report a bug.

To add a custom section:

1. Open the JPSX page for which you want to customize the toolbar.
2. Add a `facet` inside the `Page Customizable` and name it `bugreport`.
3. Add a `Command Toolbar Button` component inside the facet and set the `text` attribute to `Report a Bug`.
4. To add an image to the icon, specify the path to the image using the `icon` attribute.
5. Add the `Show Popup Behavior` component to invoke a popup on clicking the `Command Toolbar Button`.

   In Source view, the `Page Customizable` would appear as follows:

```
<pe:pageCustomizable id="pageCustomizable1"
             toolbarLayout="message stretch bugrep newline menu stretch button"
  <f:facet name="bugrep">
    <af:commandToolbarButton id="cmd1" text="Report a bug"
                             icon="/images/bug.png"
                             clientComponent="true">
      <af:showPopupBehavior popupId="p1" triggerType="action"/>
    </af:commandToolbarButton>
  </f:facet>
. . .
  <af:popup id="p1">
    <af:dialog id="dlg1" title="File a Bug"
               affirmativeTextAndAccessKey="File">
      <af:panelFormLayout labelWidth="30%" id="pfl1">
        <af:inputText id="it0" maximumLength="80"
                      label="Product/Component" required="true"/>
        <af:inputText id="it1" maximumLength="80" label="Subject"
                      required="true"/>
        <af:inputText id="it2" rows="3" label="Problem" required="true"/>
        <af:inputText id="it3" rows="3" label="Steps" required="true"/>
      </af:panelFormLayout>
    </af:dialog>
  </af:popup>
  . . .
</pe:pageCustomizable>
```

6. Save the page.

   At runtime, the Composer toolbar will display a Report a Bug icon. Clicking this icon will display the File a Bug dialog to enable users to report a bug.

19.10.4 How to Override a Toolbar Section to Display Custom Content

You can display custom content in a default toolbar section by adding a facet of the same name as the section and populating it with custom content. The facet content overrides the content of the default section. For example, to display a custom message to users in place of the `Editing Page:` *`Page_Name`* message, you can create a custom facet named `message` and include an `Output Text` component with the text you want to display to users. The `Output Text` component then displays in place of the default message. The following example shows a `Page Customizable` component with a custom toolbar message:

```
<pe:pageCustomizable id="pageCustomizable1"
                     toolbarLayout="message newline button stretch statusindicator
menu"
  <cust:panelCustomizable id="panelCustomizable1" layout="scroll"/>
  <f:facet name="message">
    <af:outputText value="Welcome!"/>
  </f:facet>
  <f:facet name="editor">
    <pe:pageEditorPanel id="pep1"/>
  </f:facet>
</pe:pageCustomizable>
```

19.11 Enabling Direct Select in Design or Add Content View

Direct select allows you to extend specific customization capabilities from Composer Structure view to Design or Add Content view, allowing users to modify elements from within the page at runtime. This allows you to put more control in the hands of the business user, while creating a safe environment where no damage can be done to the underlying application.

All direct select functionality is available in Structure view, but business users do not have the knowledge or experience to use Structure view safely and effectively. These users could easily break the page and circumvent application logic.

Using direct select, you can enable a small number of chosen components to be selectable and editable. For example, changing the order of fields in a form, changing the labels on form fields, changing column names in a table, or hiding specific fields in a form.

For more information about direct select functionality, see Section 19.11.2, "What Happens at Runtime."

19.11.1 How to Enable and Configure Direct Select

This section explains how to enable and configure direct select in your application.

1. First you must enable the Select view. In `adf-config.xml`, inside the `<pe:page-editor-config>` tag, add the `<pe:enable-design-views>` tag to define the available views. The possible constant values are:
   - `all`: Makes all views available and displays a toolbar with tabs to switch between views.
   - `design`: Makes the Design view the only view available.
   - `add-content`: Makes the legacy Add Content view the only available view.
   - `select`: Makes the Select view the only available view.

- `source`: Makes the Structure view the only available view.
- `preview`: Makes Preview the only available view.

For example, if you want only Select and Add Content views, you can add the following tag:

```
<pe:enable-design-views> select add content</pe:enable-design-views>
```

You can also use EL to determine the appropriate view, as shown in the example below:

```
<pe:enable-design-views>#{testBean.designViews}</pe:enable-design-views>
```

> **Note:** This setting defines the default for the application. You can override this setting in any `pageCustomizable` tag using the `designViews=""` attribute.

2. In pe-ext.xml, add the `<selection-config>` tag to enable or disable direct select for specific components and define associated operations. To make a component selectable, you must define operations within this tag. (If no operations are defined and selection is enabled for a component, selecting the component will display an empty frame.)

Within the `<selection-config>` tag, you can configure direct select globally using `<global-filter>` and by namespace and tag using `<selection-taglib-filter>`. The `<selection>` tag has two required attributes:

- `view`: Defines the view in which the direct select is enabled.
- `enabled`: Sets whether or not direct select is enabled in the specified view.

Available operations are defined within `<operation>` tags under each specific component. The following elements are used to define operations:

- `name`: Defines the operation (standard or custom) to be executed. The operation name is the same as the property panel ID. For a list of standard operations, see Section B.3.2, "Default Property Panels." For custom operations, the name is the same as the custom panel ID. For details on custom operations, see Section 19.3, "Creating Custom Property Panels."
- `label` (optional): Sets the tab label in the popup window. The default label is the operation name.
- `filtered`: Set to `false` to include the operation in the popup window.

> **Note:** It is a recommended practice to provide selection for a small number of components at first, then add more as functionality is tested and learned. This can be done easily by globally disabling selection in the `<global-filter>` tag and enabling selection for individual components using `<selection-taglib-filter>` as shown in the example that follows.

```
<selection-config>
  <global-filter>
    <selection view="design" enabled="false"/>
  </global-filter>

  <selection-taglib-filter
```

```
   namespace="http://xmlns.oracle.com/adf/faces/customizable">
    <tag name="showDetailFrame">
      <selection view="design" enabled="true"/>
      <operation name="oracle.adf.pageeditor.pane.sdfprop"
                 label="SDF Change Property"
                 filtered="false"/>
    </tag>
  </selection-taglib-filter>

  <selection-taglib-filter namespace="http://xmlns.oracle.com/adf/faces/rich">
    <tag name="goLink">
      <selection view="design" enabled="true"/>
      <operation name="oracle.adf.pageeditor.pane.generic-property-inspector"
                 label="Change Property"
                 filtered="false"/>
      <operation name="oracle.adf.pageeditor.pane.inline-style-editor"
                 label="Inline Style"
                 filtered="false"/>
    </tag>
    <tag name="commandButton">
      <selection view="design" enabled="true"/>
      <operation name="oracle.adf.pageeditor.pane.generic-property-inspector"
                 label="Change Property"
                 filtered="false"/>
    </tag>
  </selection-taglib-filter>
</selection-config>
```

To further simplify the user experience, direct select allows you to filter specific attributes for a tag so that a smaller set is displayed. For details, see Section 19.8.1, "How to Define Property Filters."

3. To enable or disable direct select for a specific component within a .jspx page, add the `<f:attribute name="pe-select" value="true|false">` tag within the component tag as shown in the example that follows. The setting in this tag overrides the setting in `<selection-config>` for the component in the pe_ext.xml file. (As noted above, to enable direct select, operations must be defined for the component in the pe_ext.xml file, or selecting it will open an empty dialog.)

```
<af:panelGroupLayout id="pgl2" layout="vertical">
<f:attribute name="pe-select" value="false"/>
  <af:inputText id="it6" label="Unselectable" value="Enter here..."/>
  <af:goLink id="gl1" destination="http://www.oracle.com" text="Oracle"/>
  <af:inputText id="it7" label="Selectable(override)" value="Enter here...">
    <f:attribute name="pe-select" value="true"/>
  </af:inputText>
</af:panelGroupLayout>
```

4. To disallow the use of Expression Language in form fields and protect existing EL from overwrite, see Section 19.4.2, "How to Protect Expression Language."

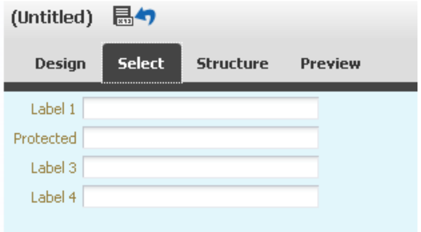
For more information about specific elements, see the following sections in Appendix B, "Composer Component Properties and Files":

- Section B.2.1.8, "selection-config"
- Section B.2.2.5, "enable-design-views"
- Section B.2.2.6, "allow-el and protect-el"

19.11.2 What Happens at Runtime

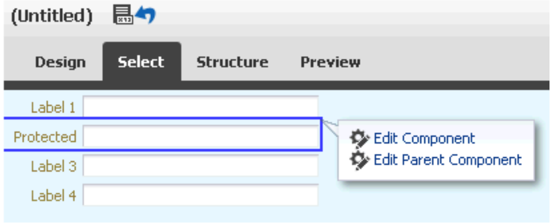
When direct select is enabled, the outward presentation of the page at runtime does not appear any different to the end user (Figure 19–15).

Figure 19–15 Select View



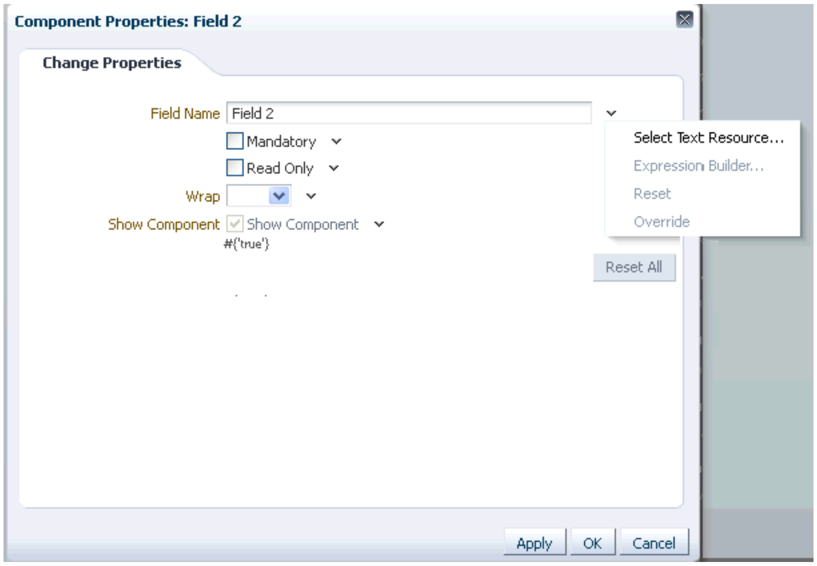
To edit the properties for a component, the user can select an enabled element and click **Edit Component** or **Edit Parent Component**, when applicable (Figure 19–16).

Figure 19–16 Direct Select Enabled for an Element



The **Component Properties** dialog allows the user to edit properties defined for the component and access other operations configured for the component. If the user chose Edit Parent Component, a Manage Children tab is included in the dialog. If EL is not allowed or is protected from overwrite, the Expression Builder and Override options are not available, as shown in Figure 19–17. This image also includes an example of a field that is protected from edit (Show Component).

Figure 19–17 Component Properties Dialog


Component Properties: Field 2

Change Properties

Field Name: Field 2
☐ Mandatory
☐ Read Only
Wrap
Show Component: ☑ Show Component
#{'true'}

Multiple operations are shown in tabs in the dialog. The order of tabs is defined in the panel registration. If an operation references a panel that is not registered for the enclosing component, the tab for that operation will not be displayed. For details on panel registration, see Section 19.3, "Creating Custom Property Panels."

19.12 Troubleshooting Problems with Composer Extensibility Features

This section provides information to assist you in troubleshooting problems you may encounter while using the Composer extensibility features.

For information about configuring logging, see Chapter 18, "Enabling Runtime Editing of Pages Using Composer."

Problem

You created an add-on, but it does not appear on the Composer toolbar.

Solution

Ensure the following:

- The `pe_ext.xml` file is in `/META-INF` folder in a JAR file or the application and is available in the class path.
- The task flow binding ID specified while registering the panel in `pe_ext.xml` is correct.
- An `<pe:addon-panel>` entry exists under the `<pe:page-editor-config>` section in the `adf-config.xml` file.
- If the add-on is in a JAR file, ensure that the JAR file is created as an ADF Library.

For information about add-ons, see Section 19.2, "Creating Composer Add-Ons."

Problem

You have registered a custom property panel. However, it does not appear in the Component Properties dialog when you select a component to display its properties.

Solution

Ensure the following:

- The `pe_ext.xml` file is in `/META-INF` folder in a JAR file or the application and is available in the class path.
- The task flow binding ID specified while registering the panel in `pe_ext.xml` is correct.
- The `property-panel` registration is correct and is specified against the component you want the panel to appear against. Further, the fully qualified class name of the component is correctly specified using the `component` node.
- A duplicate property panel registration is not overriding your panel entry.
- If the panel is configured to use the rendered attribute, ensure that the value or EL evaluates to `true`.
- If the add-on is in a JAR file, ensure that the JAR file is created as an ADF Library.

For information about custom property panels, see Section 19.3, "Creating Custom Property Panels."

Problem

You do not see some properties of a component in the Component Properties dialog.

Solution

Ensure that the component properties are not filtered or restricted. For more information, see Section 19.8.1, "How to Define Property Filters" and Section 22.4, "Applying Attribute-Level Security."

20 Performing Advanced Composer Configurations

This chapter describes how to perform certain advanced Composer configurations to enhance the end user experience.

This chapter contains the following topics:

20.1 Enabling Custom Actions on a Show Detail Frame Component by Using Facets

You can use the `Show Detail Frame` component's facets to define and display custom actions on `Show Detail Frame` components. For example, if your `Show Detail Frame` contains a list of services provided in your application, you can add a custom action, `Show Detailed Information`, which opens up a task flow containing details about the various services.

For information about the facets supported by `Show Detail Frame` components, see Section B.1.5, "Show Detail Frame Component."

Oracle JDeveloper displays all facets available to the `Show Detail Frame` component in the Structure window, however, only those that contain UI components appear activated.

To add a Show Detail Frame facet, perform the following steps:

1. Right-click a `Show Detail Frame` component in the Structure window, and select **Facets - Show Detail Frame**, and click the arrow displayed to the right of this option.
2. From the list of supported facets, select the facet you want to add.

   > **Note:** A check mark next to a facet name means the facet is already inserted in the `Show Detail Frame` component. Selecting that facet name again would result in the facet getting deleted from the page.

   The `f:facet` element for that facet is inserted in the page.
3. Add components in the facet according to your design requirements.

   For an end-to-end example of creating and using `Show Detail Frame` facets, see Section 20.2, "Enabling Custom Actions on a Show Detail Frame Component by Using Facets: Example."

20.2 Enabling Custom Actions on a Show Detail Frame Component by Using Facets: Example

Assume a JSPX page, `Page1`, with a `Panel Customizable` component. Inside the `Panel Customizable` is a `Show Detail Frame` component (`showDetailFrame1`). Inside the `Show Detail Frame` is an ADF task flow. The `Panel Customizable` has two other `Show Detail Frame` components, one above and the other below `showDetailFrame1`. The task flow displays two `Output Text` components on the page.

You can configure an `Additional Actions` facet on the `Show Detail Frame` component to display a **Customize** action on the Actions menu along with the **Move Up** and **Move Down** actions. At runtime, the **Customize** action enables users to customize the text in the `Output Text` components. This section describes the steps you take to achieve this effect. It contains the following subsections:

- Section 20.2.1, "How to Create an ADF Task Flow"
- Section 20.2.2, "How to Include an Additional Actions Facet"
- Section 20.2.3, "How to Create a Redirection Page"
- Section 20.2.4, "How to Create Navigation Rules Between Pages"
- Section 20.2.5, "What Happens at Runtime"

20.2.1 How to Create an ADF Task Flow

To create an ADF task flow:

1. From the **File** menu, select **New**.
2. In the **New** dialog, select **JSF** under Web Tier node, and select **ADF Task Flow** under Items.
3. Click **OK**.

4. In the Create Task Flow dialog, click **OK** to create a task flow definition file by accepting the default values.

5. From the **ADF Task Flow** tag library in the Component Palette, drop two view elements, **view1** and **view2**, onto the task flow definition file.

6. Drop a **Control Flow Case** from view1 to view2.

7. Click the first view element and then click the second view element to draw the control flow line.

   Name this control flow case next.

8. Similarly, drop a **Control Flow Case** from view2 back to view1 and name it prev.

9. Create a backing bean called BackingBean.java to contain values for two variables view1 and view2.

   view1 and view2 are initialized with initialValue1 and initialValue2 respectively. Ensure that the code of the bean is as shown in the following example:

```
package view;

public class BackingBean {
    public BackingBean() {
    }

    private String view2 ="initial Value1";
    private String view1 = "initial Value2";

    public void setView2(String view2) {
        this.view2 = view2;
    }

    public String getView2() {
        return view2;
    }

    public void setView1(String view1) {
        this.view1 = view1;
    }

    public String getView1() {
        return view1;
    }
}
```

10. In the task flow definition file, double-click **view1** to create the page fragment (view1.jsff) for that element.

11. Add a **Panel Group Layout** and two **Output Text** components to view1.jsff.

12. Specify the Value for the first Output Text component to be #{backingBean.view1}, and specify the Value for the second Output Text component to be #{backingBean.view2}.

13. Save view1.jsff, and close it.

14. In the task flow definition file, double-click **view2** to create the page fragment (view2.jsff) for that element.

15. Add just one **Output Text** component to view2.jsff, and specify Value to be #{backingBean.view2}.

16. Save `view2.jsff`, and close it.

20.2.2 How to Include an Additional Actions Facet

To include an Additional Actions facet:

1. Create a JSPX page, `Page1.jspx`, with a `Panel Customizable` component and a nested `Show Detail Frame` component.

2. Add two more `Show Detail Frame` components, above and below the existing `Show Detail Frame` component.

   The purpose of adding three `Show Detail Frame` components is to enable the display of `Move Up` and `Move Down` actions along with the additional action on the first `Show Detail Frame` component, `showDetailFrame1`.

3. Add the task flow definition file that you created in the previous step inside `showDetailFrame1`.

4. Right-click the first `Show Detail Frame` in the Structure window, and select **Facets - Show Detail Frame**.

5. Click the arrow to the right of this option, and from the list of supported facets, select **Additional Actions**.

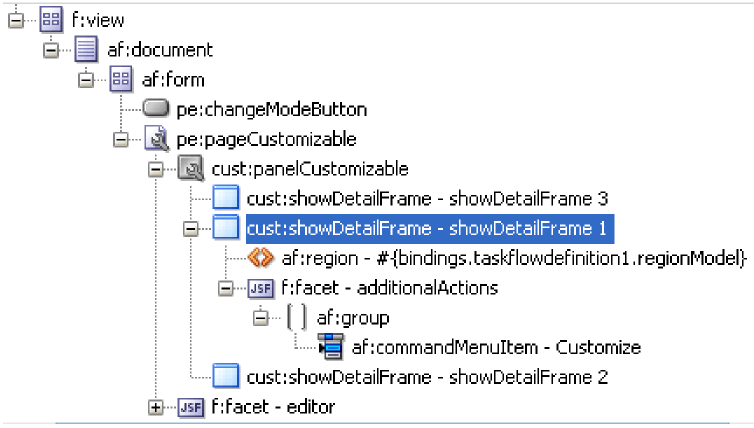
   The `f:facet-additionalActions` element for that facet is inserted in the page.

6. Add a **Panel Group Layout** inside the `Additional Actions` facet, and add a **Button** component inside the `Panel Group Layout` component.

7. Set the `Text` attribute for the `Button` to `Customize`, and specify `customize` as the `Action` value.

   The page in the structure navigator should appear as shown in Figure 20–1.

Figure 20–1 Page1.jspx in Structure Navigator


f:view
af:document
af:form
pe:changeModeButton
pe:pageCustomizable
cust:panelCustomizable
cust:showDetailFrame - showDetailFrame 3
cust:showDetailFrame - showDetailFrame 1
af:region - #{bindings.taskflowdefinition1.regionModel}
f:facet - additionalActions
af:group
af:commandMenuItem - Customize
cust:showDetailFrame - showDetailFrame 2
f:facet - editor

8. Save the page.

20.2.3 How to Create a Redirection Page

To create the redirection page:

1. Create a JSPX page called `Page2.jspx`, and add two **Input Text** components and a **Button** component.

2. Specify the `Value` for the first `Input Text` component to `#{backingBean.view2}`, and set the `Value` attribute for the second `Input Text` component to `#{backingBean.view1}`.

   The purpose of adding `Input Text` components with references to the backing bean is to enable the passing of a user's input to the bean so that it can be reflected in the `Output Text` components on `Page1.jspx`.

3. On the `Button` component, set the `Text` attribute to `OK` and specify `back` as the `Action` value.

4. Save the page.

   You can now enable switching between the two pages by defining navigation rules.

20.2.4 How to Create Navigation Rules Between Pages

To define navigation rules between the pages:

1. In the Application Navigator, under the project's WEB-INF folder, double-click the **faces-config.xml** file to open it.
2. Click the **Overview** tab to view the file in Overview mode.
3. Click the **Add** icon in the Managed Beans section.
4. In the Create Managed Bean dialog, specify `backingBean` as the name.
5. For the Class Name field, click the **Browse** button adjacent to it and browse to the `BackingBean` Java class that you created earlier. Click **OK**.
6. Click **OK**.
7. From the Scope list, select **session** and click **OK**.
8. Select the **Navigation Rules** tab on the page.
9. In the From Views table, select **Page1.jspx**.
10. Under Navigation Cases, select **Page2.jspx** in the To View ID column, **customize** in the From Outcome column, and **true** in the Redirect column.
11. In the From Views table, select **Page2.jspx**.
12. Under Navigation Cases, select **Page1.jspx** in the To View ID column, **back** in the From Outcome column, and **true** in the Redirect column.

    In Source view, these entries appear as follows:

```
<managed-bean>
    <managed-bean-name>backingBean</managed-bean-name>
    <managed-bean-class>view.BackingBean</managed-bean-class>
    <managed-bean-scope>session</managed-bean-scope>
  </managed-bean>
  <navigation-rule>
  <from-view-id>/Page1.jspx</from-view-id>
  <navigation-case>
    <from-outcome>customize</from-outcome>
    <to-view-id>/Page2.jspx</to-view-id>
      <redirect/>
    </navigation-case>
  </navigation-rule>
  <navigation-rule>
    <from-view-id>/Page2.jspx</from-view-id>
  <navigation-case>
```

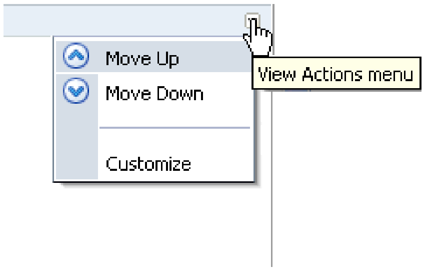
```
            <from-outcome>back</from-outcome>
            <to-view-id>/Page1.jspx</to-view-id>
              <redirect/>
            </navigation-case>
        </navigation-rule>
```

13. Save the file.

20.2.5 What Happens at Runtime

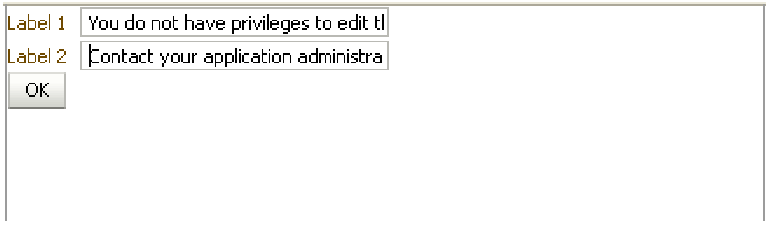
In JDeveloper, run Page1.jspx. The Actions menu on the showDetailFrame1 component displays the Customize action, as shown in Figure 20–2.

Figure 20–2 Customize Action on the Actions Menu



Clicking Customize takes you to Page2.jspx (Figure 20–3), where you can update the values for Label1 and Label2.

Figure 20–3 Page with Option to Edit Text


Label 1
You do not have privileges to edit tl
Label 2
Contact your application administra
OK

Clicking **OK** takes you back to Page1.jspx, which reflects the recent text changes.

20.3 Enabling Custom Actions on a Task Flow

You can customize a task flow by including it in a Show Detail Frame component. The Show Detail Frame component provides certain default actions to rearrange, show, and hide components. Further, you can define custom actions to trigger the desired navigational flow within the task flow at runtime. There are two ways in which you can enable custom actions on a task flow:

- Enable custom actions directly on the task flow so that they are displayed on the Show Detail Frame component's Actions menu.
- Enable custom actions on the Show Detail Frame component enclosing the task flow so that they are displayed on the Show Detail Frame component's Actions menu.

This section describes both approaches. It contains the following subsections:

- Section 20.3.1, "How to Enable Custom Actions Directly on a Task Flow"

- Section 20.3.2, "How to Enable Custom Actions on a Show Detail Frame Enclosing a Task Flow"
- Section 20.3.3, "What Happens at Runtime"
- Section 20.3.4, "How to Enable Custom Actions On a Show Detail Frame Enclosing a Task Flow: Example"

20.3.1 How to Enable Custom Actions Directly on a Task Flow

Perform the steps in this section if you want the task flow to be self-contained, without the need to inherit global custom actions defined at the application level. You can define custom actions on a task flow by configuring a `<customComps-config>` section with a nested `<customActions>` element in the `adf-settings.xml` file. The additional custom actions specified in the `adf-settings.xml` file are displayed on the `Show Detail Frame` component that surrounds this task flow.

Typically, task flows are packaged and deployed as ADF libraries. When you create an `adf-settings.xml` file containing custom actions for a task flow, this file is also packaged in the ADF library.

To enable custom actions on a task flow:

1. If it does not already exist, create the `adf-settings.xml` file in the `META-INF` directory under the project's Web context root (for example, in the *`APPLICATION_ROOT`*`/Portal/src/META-INF` directory):

   a. From the **File** menu, select **New**.

   b. In the New Gallery dialog, expand **General**, select **XML**, then **XML Document**.

   c. Click **OK**.

   Name the file `adf-settings.xml`.

2. Add a `<custComps-config>` section in the file, with a nested `<customActions>` element.

3. Add one `<customAction>` element for each internal task flow action that you want to display as a custom action on the `Show Detail Frame` Actions menu.

   You can add any number of custom actions under the `<customActions>` element.

   Example 20–1 shows the code of the `adf-settings.xml` file with a `<customAction>` entry.

Example 20–1 The custComps-config Section in an adf-settings.xml File

```
<cust:custComps-config
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
  <customActions>
   <customAction action="next" location="chrome"
                 rendered="true"
                 icon="/adf/webcenter/editheader_ena.png"
                 text="Next"

taskFlowId="/WEB-INF/task-flow-definition.xml#task-flow-definition"
                 shortDesc="next"/>
    <customAction action="prev" location="chrome"
                 rendered="true"
                 icon="/adf/webcenter/editheader_ena.png"
                 text="Previous"
```

```
taskFlowId="/WEB-INF/task-flow-definition.xml#task-flow-definition"
                shortDesc="prev"/>
 </customActions>
</cust:custComps-config>
```

Custom action definitions are similar at the task flow-level and application-level, except for the taskFlowId attribute that is used in the task flow-level setting. This attribute is used to identify the task flow on which the custom action must be defined. As an ADF library may have multiple task flows, this attribute helps identify the task flow that must render the custom action.

Notes:

- If you are defining an icon for the custom action, you must ensure that the image you specify is available in the project root folder.
- You can define custom actions for the internal actions defined in all task flows on your page; however, at runtime, the Show Detail Frame displays only those custom actions that correspond to the ADFc outcomes of the current view of the task flow.

4. Save the adf-settings.xml file.

20.3.2 How to Enable Custom Actions on a Show Detail Frame Enclosing a Task Flow

You can define custom actions for a task flow on the enclosing Show Detail Frame component. When these actions are invoked at runtime, they trigger the desired navigational flow in the task flow. For example, you can define a custom action on a Show Detail Frame that specifies that the target task flow fragment opens in a separate browser window rather than inside the Show Detail Frame.

You can specify custom actions on Show Detail Frame components by adding Custom Action components as children of a Show Detail Frame component on the page. Custom actions defined in this way would be available only on the Show Detail Frame instance, which has the custom action as its child. Alternatively, you can specify custom actions in the application's adf-config.xml file. Custom actions defined in this way are available on all Show Detail Frame instances in the application.

This section provides information about defining custom actions on a Show Detail Frame. It contains the following subsections:

- Section 20.3.2.1, "Defining Custom Actions at the Instance Level"
- Section 20.3.2.2, "Defining Custom Actions at the Global Level"
- Section 20.3.2.3, "Configuring Custom Actions that Display Task Flow Views in a Separate Browser Window"

20.3.2.1 Defining Custom Actions at the Instance Level

Define custom actions on a particular Show Detail Frame component instance using the Custom Action component. You can find the Custom Action component in the Composer tag library. Custom actions are stored in the JSPX page definition file of the page that contains the Show Detail Frame.

To define custom actions at the instance level:

1. From the Component Palette, select **Composer**.

2. Drag a **Custom Action** and drop it on the page inside the `Show Detail Frame` component, below the `af:region` element.

   Add one `Custom Action` component for each internal task flow action you want to display as a custom action on the `Show Detail Frame` Actions menu.

   > **Note:** Add `Custom Action` components below the `af:region` element. You may face problems if the region is not the first child component of the `Show Detail Frame`.

3. Define attributes for the `Custom Action` by referring to Table B–9 in Section B.1, "Composer Component Properties."

   Ensure that you populate the `Action` attribute of each `Custom Action` with the correct ADFc outcomes of the associated task flow. The code should be similar to the one shown in Example 20–2.

Example 20–2 Custom Action Code

```
<cust:showDetailFrame text="showDetailFrame 1" id="sdf1">
  <af:region value="#{bindings.taskflowdefinition1.regionModel}"
             id="r1"/>
  <cust:customAction action="navigatefromview1" id="ca1"
                     location="both" icon="/Logo1.JPG"
                     text="View1 Action"
                     shortDesc="Custom View1 Action"/>
  <cust:customAction action="navigatefromview2"
                     location="both" id="ca2"
                     icon="/Logo2.JPG" text="View2 Action"
                     shortDesc="Custom View2 Action"/>
</cust:showDetailFrame>
```

> **Notes:** You can add custom actions for all of the task flow's ADFc outcomes, but depending on the task flow view that is displayed, several or none of the custom actions are available at runtime.
>
> If you define a custom action without a corresponding task flow action, then the custom action is not rendered on the `Show Detail Frame` header at runtime.

> **See Also:** "Creating a Task Flow" in *Fusion Developer's Guide for Oracle Application Development Framework*

4. Save and run the page.

At runtime, when you select an action from the `Show Detail Frame`'s Actions menu, the associated control flow rule is triggered and the target task flow fragment is rendered.

20.3.2.2 Defining Custom Actions at the Global Level

Defining custom actions at the global level means making those custom actions available for all `Show Detail Frame` instances in an application. Though global-level custom actions are available on all `Show Detail Frame` components in an application, at runtime the header of any `Show Detail Frame` displays only those custom actions that correspond to the ADFc outcomes of the current view of the task flow.

Define global-level custom actions in your application's `adf-config.xml` file.

To define custom actions at the global level:

1. Open the application's `adf-config.xml` file, located in the `ADF META-INF` folder under Descriptors in the Application Resources panel.
2. Define custom actions using the `<customActions>` element with nested `<customAction>` tags for each action, as shown in Example 20–3.

   > **Tip:** To render a custom action only in page Edit mode, you can set the `rendered` attribute on the `<customAction>` tag to `#{composerContext.inEditMode}`. This returns a value of `true` if the page is in Edit mode.

Example 20–3 Custom Actions Definitions in the adf-config.xml File

```
<cust:adf-config-child
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
  <enableSecurity value="true" />
  <customActions>
    <cust:customAction action="forward" displayName="Move Forward"
                       location="menu" rendered="true"
                       icon="/move_forward.png"/>
    <cust:customAction action="backward" tooltip="Move Backward"
                       location="chrome" rendered="true"
                       icon="/move_backward.png"/>
  </customActions>
</cust:adf-config-child>
```

> **Notes:**
>
> - If you implemented restrictions on the `Show Detail Frame` component's actions by performing the steps in Section 22.5, "Applying Action-Level Restrictions on Panel Customizable and Show Detail Component Actions," you already have a `cust:customizableComponentsSecurity` section in the `adf-config.xml` file. You can define custom actions in that section itself instead of the `cust:adf-config-child` section shown in Example 20–3.
> - If you are defining an icon for the custom action, you must ensure that the image you specify is available in the project root folder.
> - You can define custom actions for the internal actions defined in all task flows on your page; however, at runtime, the header of any `Show Detail Frame` displays only those custom actions that correspond to the ADFc outcomes of the current view of the task flow.

3. Save the `adf-config.xml` file.

For additional information about defining custom actions, see Section 20.3.4, "How to Enable Custom Actions On a Show Detail Frame Enclosing a Task Flow: Example."

Resolving Conflicts Between Global-Level and Instance-Level Custom Actions

Each custom action is uniquely identified by the value of its action attribute. If you have defined custom actions with the same action attribute value at the global and instance levels, then there may be conflicts in how these custom actions are invoked at runtime, depending on other attribute values. At such times, the inheritGlobalActions attribute of the Show Detail Frame defines the behavior of other custom action attributes (other than the action attribute) as follows:

> **Note:** Regardless of the inheritGlobalActions setting (true or false) on the Show Detail Frame component:
>
> - The rendered attribute is not inherited even if it is not specified at the instance level.
> - The location attribute at the global or instance level should be set to the same value at both the global and instance levels.

- If inheritGlobalActions=true, or you have not specified a value for inheritGlobalActions (defaults to false), the behavior of custom action attributes is as follows:
  - If you defined a custom action attribute at the global and instance levels, then the attribute value specified at the instance level is used.
  - If you defined a custom action attribute only at the instance level, then that attribute value is used.
  - If you defined a custom action attribute only at the global level, then that value is ignored and the default value is used.
- If inheritGlobalActions=true, the behavior of custom action attributes is as follows:
  - If you defined a custom action attribute at the instance level, then its value is used regardless of whether the same attribute is specified at the global level.
  - If you defined a custom action attribute only at the global level, then that value is used.
  - If you have not defined a custom action attribute at the global or instance levels, then the attribute's default value is used.

After you have designed your application pages, you must deploy the application to the production environment. For more information, see Chapter 7, "Deploying and Testing Your Portal Framework Application."

> **Note:** Runtime customizations that you perform on the page in the development environment are not carried over when you deploy the application to a target server.

20.3.2.3 Configuring Custom Actions that Display Task Flow Views in a Separate Browser Window

Custom actions typically display the target task flow views in place, inside the Show Detail Frame component. However, you can define a custom action to display a task flow view in a separate browser window.

To display a task flow view in a separate browser window, the control flow rule to that view must be prefixed with dialog: in the task flow definition file and in the action attribute of the custom action corresponding to that view. The following example shows an `action` attribute definition:

```
<cust:customAction action="dialog:Next" id="ca1"
                   location="both" icon="/move_forward.png"
                   text="Next Action"
                   shortDesc="Next Action"/>
```

Setting Properties on the Popup Window

For a command component inside a task flow region, you can specify the default behavior using the `useWindow`, `windowEmbedStyle`, `windowHeight`, `windowWidth`, and `returnListener` attributes. The command component may have other such attributes that you can use. If you specify a return listener, on closing the dialog a particular action event is called to decide on the next navigation outcome. By default, without this setting, a dummy `Rich Command Link` component is created to trigger the task flow action.

When you define a listener on a command component, you must also configure the custom action to call the action event on this component. The `actionComponent` attribute on a custom action definition (global- and instance-level) enables you to specify the ID of the command component that must be queued for the action event. When the `actionComponent` attribute is specified, the `Show Detail Frame` component queues the action event on this component. Since this command component is inside your task flow, you change its attribute values at any time.

Example

Consider an example where you have included a task flow inside a `Show Detail Frame` component and defined a `Simple Edit` custom action corresponding to the task flow's navigation outcomes. A `Command Button` component inside the task flow is configured to launch a modal inline popup of size `300x200` on clicking the `Simple Edit` custom action. A return listener is configured on the command component so that it is called whenever the popup is closed.

The source code of the Command Button component inside the region is as follows:

```
<af:commandButton text="dialog:simpleEditPoup"
                  id="SDFCustomActionCmd_simpleEditPoup"
                  action="dialog:simpleEditPoup" useWindow="true"
                  windowEmbedStyle="inlineDocument" windowWidth="300"
                  windowHeight="200"
                  windowModalityType="applicationModal"

returnListener="#{pageFlowScope.recentPagesBean.refreshMainView}"
                  visible="false"/>
```

Example 20–4 shows how you can specify a global custom action corresponding to the task flow outcome by defining the custom action in the `adf-config.xml` file. The ID of the `Command Button` component is specified against the `actionComponent` attribute on the custom action.

Example 20–4   Global Custom Action Defined in the adf-config.xml File

```
<customizableComponentsSecurity
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
  <enableSecurity value="true"/>
    <customActions>
     <customAction action="dialog:simpleEditPoup"
                   text="Simple Edit"
                   shortDesc="Simple Edit"
```

```
                    location="menu"
                    rendered="#{!changeModeBean.inEditMode}"
                    icon="/adf/pe/images/editproperties_ena.png"
                    actionComponent="SDFCustomActionCmd_simpleEditPoup"/>
    </customActions>
</customizableComponentsSecurity>
```

Example 20–5 shows how you can specify an instance-level custom action corresponding to the task flow outcome by adding a `Custom Action` component from the Composer tag library to the JSPX page. The ID of the `Command Button` component is specified against the `actionComponent` attribute on the custom action.

Example 20–5 Instance-Level Custom Action Defined in the JSPX Page

```
<cust:showDetailFrame id="sdf_for_RecentPagesTF1"
                      text="Recent Pages" stretchContent="false"
                      showResizer="never">
  <af:region id="RecentPagesTF1"
             value="#{bindings.regionBinding1.regionModel}"/>
  <cust:customAction action="dialog:simpleEditPoup"
                     text="My Simple Edit"
                     shortDesc="Simple Edit"
                     location="menu"
                     rendered="#{!changeModeBean.inEditMode}"
                     icon="/adf/pe/images/editproperties_ena.png"
                     actionComponent="SDFCustomActionCmd_simpleEditPoup"/>
</cust:showDetailFrame>
```

> **Note:** A custom action that is launched in a popup dialog is sent as a new request to the server. If you are using a Composer sandbox and are in Edit mode of a page, ensure that this request is launched in View mode by adding code in your servlet filter so that a new sandbox is not created for this page.

20.3.3 What Happens at Runtime

Custom actions configured in the `adf-settings.xml` file are merged with the custom actions configured in the `adf-config.xml` file and all actions relevant to the current view of the selected task flow are displayed on the parent `Show Detail Frame` component's Actions menu.

If you enabled custom actions at a global level, then the header of any `Show Detail Frame` displays these custom actions if they correspond to the navigation outcomes of the current view of the child task flow.

If you prefixed the `action` attribute value with `dialog:`, then the target view of the task flow opens in a separate browser window.

20.3.4 How to Enable Custom Actions On a Show Detail Frame Enclosing a Task Flow: Example

In this example, assume that your application contains a task flow, `customactions`, residing inside a `Show Detail Frame`. The task flow includes three view elements, `view_gadget`, `edit_settings`, and `about_gadget`, and three associated control flow rules, `ViewGadget`, `EditSettings`, and `AboutGadget`. Your object is to define custom actions so that the control flow rules are available as actions on the Actions menu of the `Show Detail Frame` component.

In this example, the control flow rules are added in such a way that users can navigate back and forth between the three views. Each view element has an associated page fragment of the same name:

- The `view_gadget.jsff` fragment has a `Panel Stretch Layout` component. The center facet of this component is populated with an `Active Output Text` component whose `Value` attribute is set to `View Gadget`.
- The `edit_settings.jsff` fragment has a `Panel Stretch Layout` component. The center facet of this component is populated with an `Active Output Text` component whose `Value` attribute is set to `Edit Gadget Settings`.
- The `about_gadget.jsff` fragment has a `Panel Stretch Layout` component. The center facet of this component is populated with an `Active Output Text` component whose `Value` attribute is set to `About This Gadget`.

To enable custom actions on the task flow:

1. Place the `customactions` task flow inside a `Show Detail Frame` component on a customizable page, `MyPage.jspx`.

   For information about creating a customizable page, see Section 18.1.1, "How to Create a Customizable Page."

2. Add a `Custom Action` component from the Composer tag library as a child of the `Show Detail Frame` component, and set the `Action` and `Text` attributes to `ViewGadget` and `View Gadget` respectively.

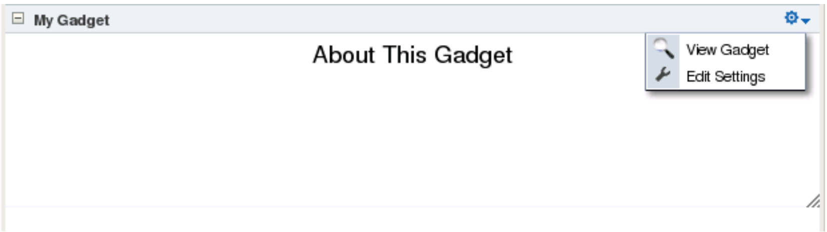
3. Add two more `Custom Action` components to the `Show Detail Frame`:

   - Set the `Action` and `Text` attributes for the first component to `EditSettings` and `Edit Settings` respectively.
   - Set the `Action` and `Text` attributes for the second component to `AboutGadget` and `About Gadget` respectively.

4. Save and run `MyPage.jspx`.

   The `view_gadget` page fragment is rendered in the `Show Detail Frame` component (named **My Gadget**) on the page. The Actions menu displays the **About Gadget** and **Edit Settings** options. Click **About Gadget** to navigate to the `about_gadget` fragment. Note that the Actions menu now displays the navigation rules for the other two fragments (Figure 20–4).

Figure 20–4 Custom Actions on a Show Detail Frame Enclosing a Task Flow

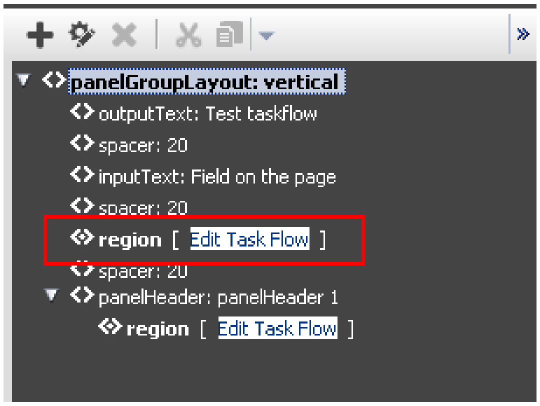


To see this in action, look at the Composer Custom Actions sample application, `ComposerCustomActions.jws`, on the Oracle WebCenter Suite 11*g* Demonstrations and Samples page on Oracle Technology Network (OTN).

20.4 Enabling Custom Actions that Display on Task Flows in the Component Navigator

The component navigator in Composer Structure view provides an option to zoom into a task flow and display the components on its page or fragment, as shown in Figure 20–5.

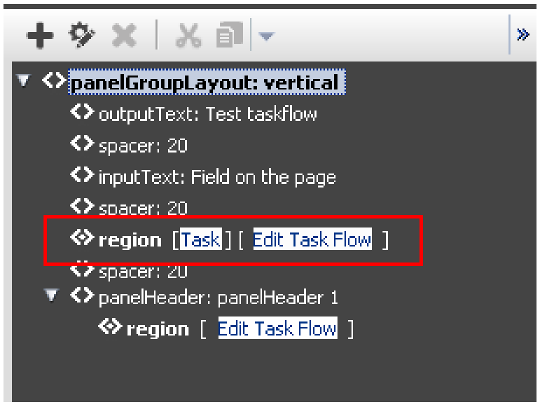
Figure 20–5 Edit Action on a Task Flow Instance



panelGroupLayout: vertical
outputText: Test taskflow
spacer: 20
inputText: Field on the page
spacer: 20
region [Edit Task Flow]
spacer: 20
panelHeader: panelHeader 1
region [Edit Task Flow]

Users can zoom in, edit the page or fragment, and zoom out of the task flow to navigate back to the page containing the task flow. In addition to the Edit Task Flow and Close links displayed next to a task flow name, you can configure your application to also display custom actions next to a task flow name, as shown in Figure 20–6.

Figure 20–6 Custom Action on a Task Flow Instance



panelGroupLayout: vertical
outputText: Test taskflow
spacer: 20
inputText: Field on the page
spacer: 20
region [Task] [Edit Task Flow]
spacer: 20
panelHeader: panelHeader 1
region [Edit Task Flow]

This section describes the procedure to enable custom actions on task flows in the component navigator. It contains the following sections:

- Section 20.4.1, "How to Configure Custom Actions in the Component Navigator"
- Section 20.4.2, "What Happens at Runtime"

20.4.1 How to Configure Custom Actions in the Component Navigator

To display custom actions against a task flow in the component navigator, you must create a Java bean that defines the custom action behavior and call this bean from the application page containing the task flow. This section describes the steps to do so in detail. It contains the following subsections:

- Section 20.4.1.1, "Defining the Logic for the Custom Action"
- Section 20.4.1.2, "Creating a JSPX Page Containing the Custom Action"
- Section 20.4.1.3, "Calling the JSPX Page from the Application Page Containing the Task Flow"

20.4.1.1 Defining the Logic for the Custom Action

To begin with, you must decide on the custom action you want to provide to users and create a Java bean with the logic to be implemented when a user selects the custom action. This section describes the steps to implement simple logic to display a message to users on clicking the custom action. The sample bean also contains the code to display the Close/Edit Task Flow links along with the custom link.

To create a Java bean:

1. From the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.
3. In the Create Java Class dialog, enter `BackingBean` in the **Name** field and click **OK**.

   The `BackingBean.java` file displays in Source view.
4. Import the required libraries as follows:

```
import javax.faces.application.FacesMessage;
import javax.faces.context.FacesContext;
import javax.faces.event.ActionEvent;
import oracle.adf.view.page.editor.sourceview.ComponentInfo;
```

5. Add the following code:

```
public class BackingBean {
  public BackingBean() {
  }

  public void action(ActionEvent actionEvent) {
      FacesContext context = FacesContext.getCurrentInstance();
      context.addMessage(null,
                         new FacesMessage(FacesMessage.SEVERITY_INFO, "Sample
message to test whether the custom action works.",
                                          null));
  }

  public boolean isRendered() {
      return ComponentInfo.isRegion();
  }

  public String getZoomText() {
      return ComponentInfo.isRootNode() ? "Close" : "Edit Task Flow";
  }
}
```

   With this logic, the sample message you defined is displayed when a user clicks the custom action link against a task flow region.

   Use the `isRegion()` API to ensure that the custom action link is displayed only against task flow regions on the page. Use the `isRootNode()` API to ensure that the

Edit Task Flow or Close link is displayed against the root component of the task flow.

6. Save the bean.

20.4.1.2 Creating a JSPX Page Containing the Custom Action

This section describes the procedure to create a JSPX page containing the custom action that you want to display to users in Composer.

To create the JSPX page:

1. In your application project, create a JSPX file called `customList.jspx`:

   a. From the **File** menu, select **New**.

   b. In the New Gallery dialog, expand **Web Tier**, select **JSF**, then **JSF Page**.

   c. Enter a name for the page and click **OK**.

2. Design the custom action UI using components like `Output Text` and `Command Link`, as shown in the following sample page:

```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
  <jsp:directive.page contentType="text/html;charset=UTF-8"/>
  <af:componentDef var="attrs" componentVar="component">
    <af:panelGroupLayout id="dc_pgl1" rendered="#{backingBean.rendered}">
      <af:outputText value="[" id="dc_ot1"/>
      <af:commandLink text="Test" id="dc_cl1"
                      actionListener="#{backingBean.action}"
                      binding="#{backingBean.customLink}"/>
      <af:outputText value="]" id="dc_ot2"/>
      </af:panelGroupLayout>
    </af:componentDef>
</jsp:root>
```

   This sample creates a custom action called `Test`. The `actionListener` and `binding` attributes on this action are bound to `BackingBean`, which you created earlier.

3. To ensure that the default Edit Task Flow/Close options are also displayed next to the task flow, you must define a facet called `zoom`, as shown in the following example:

```
<af:xmlContent>
  <component xmlns="http://xmlns.oracle.com/adf/faces/rich/component">
    <facet>
      <facet-name>zoom</facet-name>
    </facet>
  </component>
</af:xmlContent>
```

4. Include the `zoom` facet in the page content as shown in the following example:

```
<af:outputText value="[" id="dc_ot3"/>
<af:facetRef facetName="zoom"/>
<af:outputText value="]" id="dc_ot4"/>
```

   The source of the `customLink.jspx` page is as follows:

```
<?xml version='1.0' encoding='UTF-8'?>
```

```
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
  <jsp:directive.page contentType="text/html;charset=UTF-8"/>
  <af:componentDef var="attrs" componentVar="component">
    <af:panelGroupLayout id="dc_pgl1" rendered="#{backingBean.rendered}">
      <af:outputText value="[" id="dc_ot1"/>
      <af:commandLink text="Test" id="dc_cl1"
                      actionListener="#{backingBean.action}"
                      binding="#{backingBean.customLink}"/>
      <af:outputText value="]" id="dc_ot2"/>
      <af:outputText value="[" id="dc_ot3"/>
      <af:facetRef facetName="zoom"/>
      <af:outputText value="]" id="dc_ot4"/>
      </af:panelGroupLayout>
      <af:xmlContent>
        <component xmlns="http://xmlns.oracle.com/adf/faces/rich/component">
          <facet>
            <facet-name>zoom</facet-name>
          </facet>
        </component>
      </af:xmlContent>
    </af:componentDef>
</jsp:root>
```

5. Save the JSPX page.

20.4.1.3 Calling the JSPX Page from the Application Page Containing the Task Flow

Let us assume that you have a simple JSPX page, `MyPage.jspx`, containing a task flow. The source of the page is as shown in the following example:

```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
          xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable">
  <jsp:directive.page contentType="text/html;charset=UTF-8"/>
  <f:view>
    <af:document id="d1">
      <af:form id="f1">
        <af:panelStretchLayout topHeight="50px" id="psl1">
          <f:facet name="top">
            <pe:changeModeLink id="cml1"/>
          </f:facet>
          <f:facet name="center">
            <!-- id="af_one_column_header_stretched"  -->
            <pe:pageCustomizable id="pageCustomizable1">
              <cust:panelCustomizable id="panelCustomizable1" layout="scroll">
                <af:region value="#{bindings.taskflowdefinition1.regionModel}"
                           id="r1"/>
              </cust:panelCustomizable>
              <f:facet name="editor">
                <pe:pageEditorPanel id="pep1"/>
              </f:facet>
            </pe:pageCustomizable>
          </f:facet>
        </af:panelStretchLayout>
      </af:form>
    </af:document>
  </f:view>
</jsp:root>
```

The task flow, `taskflowdefinition1`, contains the following `view.jsff` fragment:

```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
  <af:panelGroupLayout layout="scroll" id="pgl1">
    <af:commandButton text="commandButton 1" id="cb1"/>
    <af:commandButton text="commandButton 2" id="cb2"/>
  </af:panelGroupLayout>
</jsp:root>
```

To display the custom action that you created, you must ensure that the `customLink.jspx` page is called from within Composer. Use the `sourceViewNodeAction` attribute on the `Page Customizable` component to reference the JSPX page containing the custom action.

The `Page Customizable` tag appears as follows in the page source:

```
<pe:pageCustomizable id="pageCustomizable1"
                     sourceViewNodeAction="/customLink.jspx">
```

The `sourceViewNodeAction` attribute can take the name of a JSPX file or an EL value that evaluates to a JSPX file name.

20.4.2 What Happens at Runtime

When you run `MyPage.jspx` to the browser and open the page in Composer Structure view, the component navigator displays a Test link and an Edit Task Flow link next to each task flow instance on the page.

20.5 Configuring a Keyboard Shortcut to Access Composer

Typically, users enter page Edit mode by clicking the Edit link or button on the page. You can now configure your application to enable users to enter page Edit mode using keyboard shortcuts. Further, you can configure your application to run some other event on using the shortcut keys. This section explains how to enable a keyboard shortcut to Composer and configure an event handler for the shortcut keys. It contains the following subsections:

- Section 20.5.1, "How to Enable Linkless Entry Into Edit Mode"
- Section 20.5.2, "How to Configure an Event Handler for the Shortcut Key"
- Section 20.5.3, "What Happens at Runtime"

20.5.1 How to Enable Linkless Entry Into Edit Mode

You can configure linkless entry into page Edit mode by adding a `<pe:mode-switch-key>` element to the application's `adf-config.xml` file. The default keyboard shortcut configured when you set the `<pe:mode-switch-key>` element is `ctrl+shift+E`. Users can use this key sequence to toggle between page View and Edit modes. However, you can configure a key of your choice by adding a `<pe:key-sequence>` property.

To add the `<pe:mode-switch-key>` property:

1. Open the application's `adf-config.xml` file, located in the `ADF META-INF` folder under `Descriptors` in the Application Resources panel.
2. Add the `<pe:mode-switch-key>` property and set its value to `true`, as shown in Example 20–6. The example shows the `<pe:key-sequence>` property with the shortcut value `ctrl+E`.

Example 20–6 Enabling Linkless Edit Mode Entry

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  <pe:mode-switch-key>
    <pe:enabled>true</pe:enabled>
    <pe:key-sequence>ctrl E</pe:key-sequence>
  </pe:mode-switch-key>
. . .
</pe:page-editor-config>
```

3. Save the file.

20.5.2 How to Configure an Event Handler for the Shortcut Key

Use the `<pe:mode-switch-handler>` element to specify the event that must be triggered on using the shortcut keys, as shown in the following example:

```
<pe:mode-switch-key>
  <pe:enabled>true</pe:enabled>

<pe:mode-switch-handler>#{PageEditorBean.handleModeSwitch}</pe:mode-switch-handler
>
</pe:mode-switch-key>
```

where `handleModeSwitch` uses the `ModeChangeEvent` method to provide the logic to toggle between two modes, as shown in the following sample:

```
public void handleModeSwitch(ModeChangeEvent editMode)
  {
    // Your implementation to handle mode change goes here
  }
```

20.5.3 What Happens at Runtime

Users can access the application page and enter Edit mode by using the configured shortcut.

20.6 Creating Event-Enabled Task Flows

Composer provides a means of contextually wiring task flow events. You can wire a contextual event to an action handler to enable the passing of values from a producer component to a consumer component when the event is triggered on the producer.

For events to be available at runtime, event capability must be included in the task flow at design time. When you add event-enabled task flows to your customizable page, each task flow's Component Properties dialog includes an Events tab, where much of the wiring activity takes place. For information about including event capabilities, see the "Creating Contextual Events" section in *Fusion Developer's Guide for Oracle Application Development Framework*.

20.7 Configuring an Application Page to Display in Structure View by Default

When a user invokes Composer by clicking the Edit button or link on a page, the page opens in Add Content or Design view by default. If your business so requires, you can configure your application pages to display in Composer Structure view by default.

20.7.1 How to Configure an Application Page to Display in Structure View by Default

The `Edit Mode view` attribute on the `Page Customizable` component enables you to specify the default page view in Edit mode.

To open a page in Structure view by default:

1. Open your JSPX page in JDeveloper.
2. Select the **Page Customizable** component in the Structure Navigator.
3. In the Property Inspector, click the **Edit Mode View** attribute drop-down list and select **source**.

> **Note:** To open the page in Structure view for selected users only, you can specify an EL value for the `Edit Mode View` attribute.

4. Save the page.

Setting the Structure View Position and Size

By default, the component navigator in Structure view is displayed on the right side of the page, and its default width is 200 pixels. You can specify a different position or size for the component navigator using the `sourceViewPosition` and `sourceViewSize` attributes respectively on the `Page Customizable` component. For more information about these attributes, see Section B.1.1, "Page Customizable Component."

20.7.2 What Happens at Runtime

When a user clicks the Edit link or button on the page, Composer opens the page in Structure view.

20.8 Disabling Structure View for the Application

By default, Structure view is enabled in Composer-enabled pages. You can disable Structure view if you want to prevent users from being able to edit any page components other than task flows, portlets, and layout components. This section describes how. It contains the following subsections:

- Section 20.8.1, "How to Disable Structure View"
- Section 20.8.2, "What Happens at Runtime"

> **Note:** For information about the editing capabilities in Structure view, see Section 16.6, "Editing Capabilities in Structure View in Page Edit Mode."

20.8.1 How to Disable Structure View

You can disable Structure view by setting the `<pe:enable-source-view>` entry to `false` in the application's `adf-config.xml` file.

> **Note:** For information about the Composer-specific configurations you can make in `adf-config.xml`, see Section B.2.2, "adf-config.xml."

To disable Structure view:

1. Open the application's `adf-config.xml` file, located in the `ADF META-INF` folder under `Descriptors` in the Application Resources panel.
2. Add the `enable-source-view` property and set its value to `false`, as shown in Example 20–7.

Example 20–7 Disabling Structure View in adf-config.xml

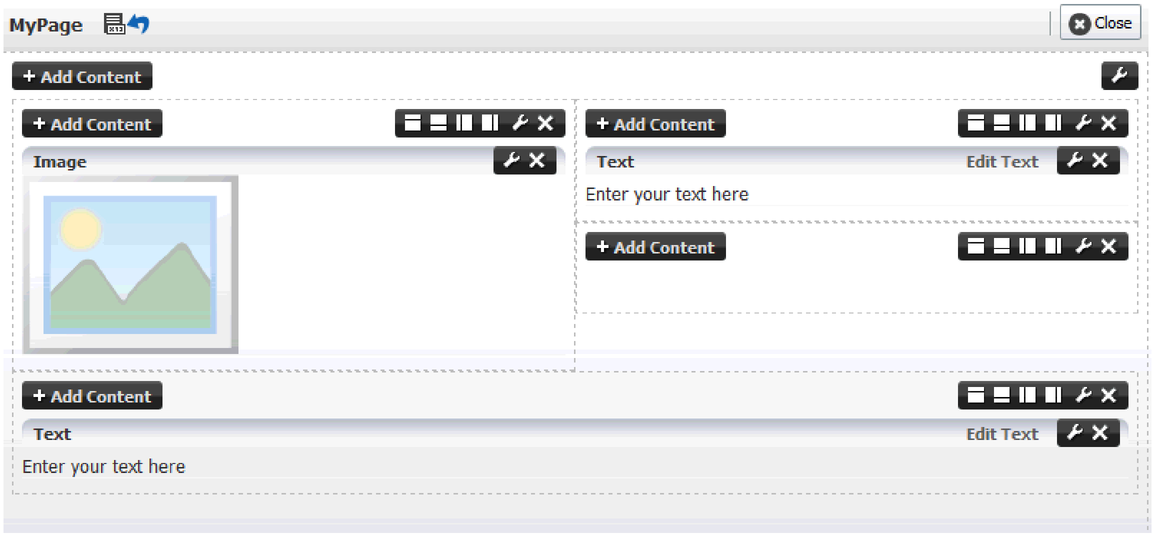
```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  <pe:enable-source-view>false</pe:enable-source-view>
</pe:page-editor-config>
```

3. Save the file.

20.8.2 What Happens at Runtime

When a user switches to page Edit mode, the page is rendered in Add Content or Design view and Structure view is not displayed to the user, as shown in Figure 20–7.

Figure 20–7 Add Content View of a Page without the Structure Tab



20.9 Disabling Task Flow Zoom Capability

You can disable the capability to zoom into task flows in the application by setting the `<pe:enable-zoom>` property to `false` in the application's `adf-config.xml` file.

> **Note:** For information about the Composer-specific configurations you can make in adf-config.xml, see Section B.2.2, "adf-config.xml."

To disable task flow zoom capability:

1. Open the adf-config.xml file, located in the ADF META-INF folder under Descriptors in the Application Resources panel.
2. Add the <pe:enable-zoom> property and set its value to false, as shown in Example 20–8.

Example 20–8 Disabling Task Flow Zoom Capability in adf-config.xml

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  <pe:source-view>
    <pe:enable-zoom>false</pe:enable-zoom>
  </pe:source-view>
</pe:page-editor-config>
```

3. Save the file.

The ability to zoom into task flows is disabled in the entire application.

20.10 Applying Styles to Components

You can change the look and feel of Composer components by applying different styles to the component header and content using one of the following methods:

- Build a skin using style selectors, and apply the skin to a Portal Framework application. For more information about style selectors and skins, see the "Customizing the Appearance Using Styles and Skins" chapter in *Web User Interface Developer's Guide for Oracle Application Development Framework*.
- Use JDeveloper style properties to specify style information through the Property Inspector. For more information, see Understanding contentStyle and inlineStyle Properties.

> **Notes:** Using JDeveloper style properties overrides the style information from the skin CSS. However, when you define a style property using JDeveloper, this style overrides styles for the selected component only—child components continue to use the styles specified in the skin.

You can adjust the look and feel of Page Customizable, Panel Customizable, Layout Customizable, and Show Detail Frame components at design time by changing the style-related properties inlineStyle and styleClass.

Show Detail Frame components have another associated style property, contentStyle, which defines the style for the content inside the component. The styleClass property enables you to select an extra style from the skin, whereas the inlineStyle and contentStyle properties override the comparable styles specified in the application skin for that particular instance of the component.

The inlineStyle property overrides styleClass. Additionally, properties set on a component instance affect only that instance of the component. Other component instances in the application are not affected.

Note: The `background` property is also useful in adjusting the look and feel of `Show Detail Frame` components. It is used to provide a dark, medium, or light color scheme for the component instance. Unlike `inlineStyle`, `contentStyle`, and `styleClass` properties, the `background` property works with skins. Depending on which value is specified for a component instance's `background` property, the skin applies the relevant style.

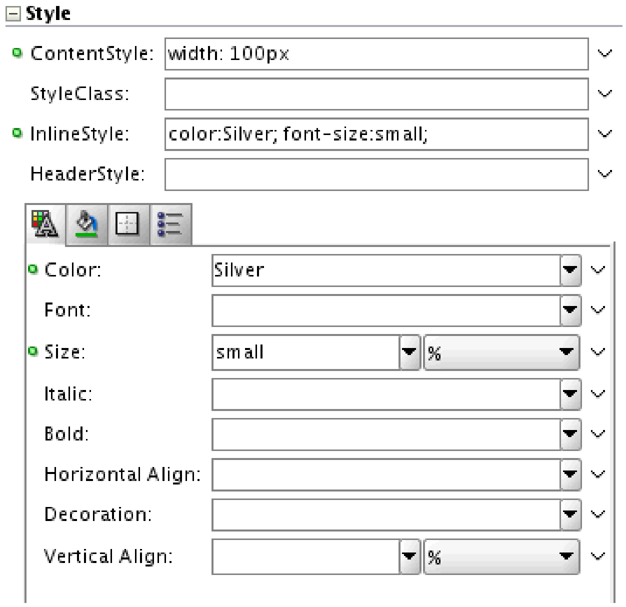
Understanding contentStyle and inlineStyle Properties

The style properties `inlineStyle` and `contentStyle` are alike in the types of attributes they support. They differ in their range of influence. While `inlineStyle` provides style information for the *entire component*, `contentStyle` provides style information only for *component content*. The `contentStyle` property is available to `Show Detail Frame` components but not to `Panel Customizable` components.

The `inlineStyle` property applies CSS to the root of the component, that is, the topmost DOM element. It does not override styles on child elements that are picking up color, font, and so on from a skin. For example, if a component header is skinned, then setting `inlineStyle` does not affect the component header. The `contentStyle` applies CSS to the DOM element that surrounds the *content* part of the component. In a `Show Detail Frame`, content refers to the area below the header.

On component content, the value specified for `contentStyle` takes precedence over the value specified for `inlineStyle`. Additionally, `contentStyle` on a component instance takes precedence over both `inlineStyle` and the `contentStyle` values of a parent component (such as a portlet nested in a `Panel Customizable` component).

Figure 20–8 Defining Styles for contentStyle and inlineStyle in the Property Inspector



Style

ContentStyle: width: 100px

StyleClass:

InlineStyle: color:Silver; font-size:small;

HeaderStyle:

Color: Silver

Font:

Size: small %

Italic:

Bold:

Horizontal Align:

Decoration:

Vertical Align: %

20.11 Configuring the Persistence Change Manager

To persist user and application customizations across sessions, your application must be configured to use the change persistence framework. When you add Composer components to a customizable page, Composer configures the application to use

ComposerChangeManager so that changes made to a page at runtime are persisted appropriately. This section describes the default change manager configuration in new Portal Framework applications containing Composer-enabled pages.

The first time you add a Composer component to your application page, Composer does the following to enable change persistence:

- Adds the CHANGE_PERSISTENCE context parameter to the web.xml file, and sets the value to ComposerChangeManager. This context parameter registers the ChangeManager class to be used to handle persistence, as shown in the following example:

```
<context-param>
  <param-name>org.apache.myfaces.trinidad.CHANGE_PERSISTENCE</param-name>

<param-value>oracle.adf.view.page.editor.change.ComposerChangeManager</param-va
lue>
</context-param>
```

- Sets the persistent-change-manager element in the adf-config.xml file to the MDSDocumentChangeManager. Composer configures MDSDocumentChangeManager within the adf-faces-config section as follows:

```
<adf-faces-config xmlns="http://xmlns.oracle.com/adf/faces/config">
  <persistent-change-manager>
    <persistent-change-manager-class>
      oracle.adf.view.rich.change.MDSDocumentChangeManager
    </persistent-change-manager-class>
  </persistent-change-manager>
  . . .
</adf-faces-config>
```

  The taglib-config section in the file lists component tags and attributes that are persisted by default, as shown in the following example:

```
<adf-faces-config xmlns="http://xmlns.oracle.com/adf/faces/config">
    ...
    <taglib-config>
      <taglib uri="http://xmlns.oracle.com/adf/faces/customizable">
        <tag name="showDetailFrame">
          <persist-operations>all</persist-operations>
          <attribute name="expansionMode">
            <persist-changes>true</persist-changes>
          </attribute>
          <attribute name="contentStyle">
            <persist-changes>true</persist-changes>
          </attribute>
        </tag>
        <tag name="panelCustomizable">
          <persist-operations>all</persist-operations>
        </tag>
      </taglib>
      <taglib uri="http://xmlns.oracle.com/adf/pageeditor">
        <tag name="layoutCustomizable">
          <persist-operations>all</persist-operations>
          <attribute name="type">
            <persist-changes>true</persist-changes>
          </attribute>
        </tag>
      </taglib>
    </taglib-config>
```

```
</adf-faces-config>
```

You can further enable change persistence for other tags and attributes by defining them in this section and setting the `persist-changes` attribute to `true`. For more information, see Section 22.4.1, "How to Define Change Persistence at the Component Level."

If you want to persist changes to operations as well as attributes, include the `persist-operations` attribute and set the value to `all`. When the `persist-operations` attribute is included in a tag, the tag persists changes such as adding, moving, reordering, and removing children, and adding and removing facets.

For a list of ADF Faces components and attributes that are implicitly persisted, see the "Allowing User Customizations at Runtime" chapter in *Fusion Developer's Guide for Oracle Application Development Framework*.

ComposerChangeManager

A `ChangeManager` class is required for persisting application customizations performed by end users. `ComposerChangeManager` handles change persistence both within a session and across sessions (to MDS). It delegates a user's changes to the appropriate change manager as follows:

- View mode changes are routed to `FilteredPersistenceChangeManager` to ensure that implicit customizations, such as column resizing and header collapse, work according to the filter rules configured in the application's `adf-config.xml` file.
- Edit mode changes are routed to `MDSDocumentChangeManager` to ensure that both implicit and explicit customizations are always persisted and available across sessions.

Notes: When you add Composer components to your application page, the option to enable customizations for the duration of the session (in the Project Properties dialog) is disabled. This is because changes in Composer-enabled application pages must be persisted across sessions, to MDS.

20.12 Configuring Runtime Resource String Editing

Component properties edited in Composer are available only in the current language. For example, if you add a task flow to your page, the task flow title you enter in Composer is available only in the current language. As a result, users in different locales do not see the translated values for such properties. To provide language support for component properties edited at runtime, Composer now provides users the option to edit resource strings for component display options that can take String values. This is similar to the resource string editor feature provided by ADF Faces in JDeveloper. Changes made to resource strings in Composer are saved into an override bundle, which gets translated along with other resource bundles in the application. The translated versions are then imported back into the application. This way, users are able to see the property values in their language.

Note: Composer supports creation of around 500 resource strings at runtime. Beyond this number, application performance slows down.

This section describes the steps to enable resource string editing. It contains the following sections:

- Section 20.12.1, "Overview of the Resource String Editor"
- Section 20.12.2, "How to Enable the Resource String Editor in Your Application"
- Section 20.12.3, "How to Configure the Override Bundle"
- Section 20.12.4, "What Happens at Runtime"

20.12.1 Overview of the Resource String Editor

At runtime, for component display options that can take String values, the Edit menu next to the property field provides a Select Text Resource option. Clicking this option opens the resource string editor, which provides options to search existing resources, edit or delete resource keys, and add new resource key/value pairs. For information about editing resource strings at runtime, see Section 16.5.5, "Edit Resource Strings."

Changes made to resource strings in Composer are saved into an application override bundle. This bundle is sent for translation and the translated versions are imported back into the application. This way, users are able to see the property values in their language.

The `ComposerOverrideBundle.xlf` is an empty XLIFF file that is packaged with Composer libraries. This bundle becomes available to the application when you add Composer components to the page at design time. At runtime, Composer uses this bundle internally to read from and write to the application override bundle while editing resource strings.

New and updated property values are saved into the override bundle. A user must specify a key, value, and description for each string being created or modified. All resource string changes made in an application are saved in a single override bundle. To distinguish runtime changes made in different layers, the key value is prefixed with the MDS layer name and value and must be in the format, `RT_<`*`MDS Layer Name`*`><`*`MDS Layer Value`*`>_`*`Key Name`*. For example, `RT_sitewebcenter_WELCOME_MESSAGE`. For a selected property, users can search and use resource strings created in any MDS layer. However, they can edit only those resource strings that were created in the same MDS layer. In addition to searching the override bundle, users can also search for strings created and used in the JSPX page at design time. Internally, Composer searches for all resource bundles defined using `c:set` tags in the JSPX file.

Runtime resource string changes in English are saved to the default application override bundle. Users can change the language and create or edit a resource string in that language. A separate override bundle is created for each language in which a user writes a resource string and the file name is suffixed with the initials for that language. For example, resource strings edited in French in `Application1` are saved in a bundle named `Application1OverrideBundle_fr.xlf`.

Current Limitations of the Resource String Editor

- Composer supports creation of around 500 resource strings at runtime. Beyond this number, application performance slows down
- The search criteria in the resource string editor is case-sensitive.
- To search for the description of a resource string, the user must provide the complete string value in the search criteria.
- The resource string editor does not display string descriptions for entries created in Properties bundle or List Resource bundle formats in JDeveloper.

- The option to edit resource strings is disabled for properties on the Parameters and Events tabs.

  If the EL value for an ADF resource is referenced in a page definition parameter, such as page parameter, task flow parameter, or portlet parameter, then the binding EL returns an empty value. Users must avoid referencing ADF resource EL values in page definition parameters.

20.12.2 How to Enable the Resource String Editor in Your Application

To enable resource string editing in your application, you must add a `<pe:resource-string-editor>` element in the `<pe:page-editor-config>` section of your application's `adf-config.xml` file, as follows:

```
<pe:page-editor-config>
  <pe:resource-string-editor>
    <pe:enabled>true</pe:enabled>
  </pe:resource-string-editor>
</pe:page-editor-config>
```

If you want to enable resource string selectively, based on specific criteria, such as the page being edited or the user or role, you can use an EL value for the `enabled` attribute.

20.12.3 How to Configure the Override Bundle

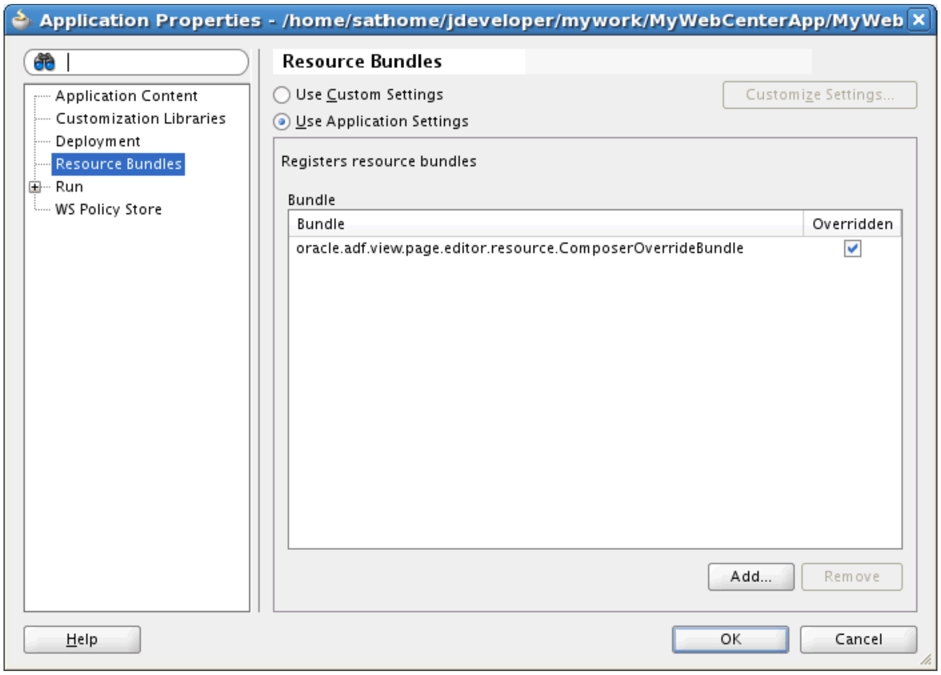
If you enable resource string editing in your application, you must configure your application to use the override bundle, `oracle.adf.view.page.editor.resource.ComposerOverrideBundle.xlf`, if it is not already being used. This override bundle is available in the `pageeditor.jar` file, and is used for reading and writing to the application override bundle when users create or edit resource strings at runtime.

To configure the override bundle:

1. Open your application in JDeveloper.
2. From the **Application** menu, select **Application Properties**.
3. Select Resource Bundles in the left panel of the Application Properties dialog.
4. If the Bundle section does not display `oracle.adf.view.page.editor.resource.ComposerOverrideBundle.xlf`, click the **Add** button to add the bundle.
5. In the File Name field in the Select Resource bundle dialog, enter `oracle.adf.view.page.editor.resource.ComposerOverrideBundle.xlf`, and click **Open**.
6. In the Application Properties dialog, select the **Overridden** check box (Figure 20–9).

   This ensures that the file is available to users at runtime.

Figure 20–9 Application Properties Dialog



○ Use Custom Settings

● Use Application Settings

Registers resource bundles

Bundle

Bundle	Overridden
oracle.adf.view.page.editor.resource.ComposerOverrideBundle	☑

7. Click **OK**.

Repeat the steps in this section to expose any of the resource bundles in your application to users at runtime.

> **Note:** To make a resource bundle accessible for runtime read and write operations, you must ensure that the Override option is selected for that bundle in the Application Properties dialog.
>
> You can make properties bundles, list resource bundles, and XLIFF resource bundles accessible at runtime.

20.12.4 What Happens at Runtime

When a user clicks the **Edit** icon next to a property that takes a String value, the Select Text Resource option is available. Clicking this option opens the resource string editor in which the user can create, modify, or delete resource strings. For more information, see Section 16.5.5, "Edit Resource Strings."

20.13 Troubleshooting Problems with Advanced Composer Configurations

This section provides information to assist you in troubleshooting problems you may encounter on performing advanced Composer configurations.

For information about configuring logging, see "Configuring ADF Logging for Composer".

Problem

You added a global- or instance-level `Custom Action`. However, it neither displays on the chrome nor in the **Action** menu on the `Show Detail Frame`.

Solution

Ensure the following:

- The first child of the `Show Detail Frame` must be `af:region`.
- The view currently displayed on the task flow must have an outcome in its task flow definition file that matches the action of `Custom Action`.
- If the action has the prefix `dialog:`, the outcome in the task flow definition must also have the same prefix.

For information, see Section 20.3.2, "How to Enable Custom Actions on a Show Detail Frame Enclosing a Task Flow."

Problem

Composer is not working on ADF application pages. Errors are reported in the logs when using Oracle WebCenter Portal's resource catalog or Component Properties dialog. None of the customizations are saved. Objects are not getting added from the catalog.

Solution

Composer is compatible with the `MDSDocumentChangeManager` and `ComposerChangeManager`. You must set the `CHANGE_PERSISTENCE` context parameter in the `web.xml` file to either of these. The following example shows how to set CHANGE_PERSISTENCE to `MDSDocumentChangeManager`:

```
<context-param>
 <param-name>org.apache.myfaces.trinidad.CHANGE_PERSISTENCE</param-name>
 <param-value>oracle.adf.view.rich.change.MDSDocumentChangeManager</param-value>
</context-param>
```

When you configure Composer, the value of `CHANGE_PERSISTENCE` is changed to `oracle.adf.view.page.editor.change.ComposerChangeManager`.

21

Performing Composer-Specific MDS Configurations

This chapter describes how to create customization layers for saving changes made to a page at runtime. It also describes how to enable Composer sandbox creation to provide users the option to preview their changes before saving them to the back end.

This chapter contains the following topics:

- Section 21.1, "Introduction to MDS"
- Section 21.2, "Using Composer Sandbox"
- Section 21.3, "Adding Customization Layers to View and Edit Modes: Example"
- Section 21.4, "Troubleshooting MDS-Related Problems with Composer"

21.1 Introduction to MDS

Most industries customize their enterprise applications to serve different audiences and domains. Problems can arise when an application is modified at the site level. For example, upgrading an application with application-level customizations may lead to data loss or data-merge errors. Consequently, a new version of the application cannot be deployed until all merge conflicts are reconciled.

In the metadata domain, MDS provides the customization feature to address such problems. The customization feature allows for the creation of nonintrusive customization layers that are applied on top of the base application definitions. Customization layers, or layered changes, are described in their own documents and are stored separately from the base application definition. At runtime, applicable customizations are loaded from the metadata store and layered over the base metadata definition to produce the desired effect. Product upgrades and patches affect only the base metadata definition, so customizations continue to function properly.

Customization Layers

MDS enables clients to specify multiple customization types. For example, you can add customizations to runtime modes, application or user roles, application states, or any client specified criteria. Each such customization type is called a *customization layer* and is depicted using a `CustomizationClass`. A `CustomizationClass` is the interface MDS uses to identify the customization layer to be overlaid on the base definition. For example, you can configure your application to save customizations based on the departments to which users belong. You can create a customization layer called `DepartmentCC` in which application customizations made by users in different departments are stored in different folders within the layer. Another example would be to configure MDS to save View mode changes as user customizations in one layer and Edit mode changes as application customizations in another layer or vice versa.

Customization layers are applied in order of precedence, that is, if the same change is made in two different layers that apply to the given user and session, the change defined in the higher precedence layer is applied first.

When you implement a `CustomizationClass`, you must register it with the MDS. The MDS provides a means of associating a list of `CustomizationClass` types with a single `MetadataObject`. This is called the *fine-grained* association. The MDS also provides the means of associating a list of `CustomizationClass` types with a set of `MetadataObjects`. This is called the *coarse-grained* association. For information about the `CustomizationClass` and about creating a customization layer, see Section 21.3, "Adding Customization Layers to View and Edit Modes: Example."

Composer Sandbox

Typically, in a Portal Framework application, runtime customizations are saved immediately in the `*JDEV_HOME*/jdev/*system_directory*/o.mds.dt/adrs/*application_name*/AutoGeneratedMar/mds_adrs_writedir` directory. Changes made in both View and Edit modes are saved in this way. However, in certain circumstances, users might first want to apply customizations in their own view and evaluate whether to keep or cancel the changes before actually saving them to the back end. You can configure Composer to create a *sandbox* if you are using a database repository to store customizations. For information about creating a sandbox, see Section 21.2, "Using Composer Sandbox."

21.2 Using Composer Sandbox

A sandbox is a temporary storage layer for saving runtime page customizations until they are committed to the back end. If you configure a sandbox, a Save button is displayed on the Composer toolbar to enable users to save their changes. In a sandbox-enabled application, if a user clicks Close without first saving changes, a Close Confirm dialog prompts the user to save or cancel changes before closing Composer.

User customizations made in View mode are saved immediately. As such changes are available only to the user modifying the page, there is no particular value in reviewing such changes before saving.

Since Edit mode customizations are available to all users who access the page, you can enable a sandbox so that a user can experiment with page customizations and assess them before committing them. If you enable a sandbox for the application, a Save button is displayed on the Composer toolbar in page Edit mode.

This section discusses the steps you can take to enable sandbox creation and describes runtime behavior of a sandbox-enabled application. It contains the following subsections:

- Section 21.2.1, "How to Enable Composer Sandbox Creation"
- Section 21.2.2, "What Happens at Runtime"
- Section 21.2.3, "How to Disable Sandbox for an Application"
- Section 21.2.4, "How to Destroy Stale Sandboxes"

21.2.1 How to Enable Composer Sandbox Creation

You can enable a sandbox only if your application uses a database store. Therefore, you must ensure that you have configured a database store before performing the steps in this section. For information about setting up a database store, see *Configuring and Managing JDBC Data Sources for Oracle WebLogic Server*.

This section describes how to enable the creation of a Composer sandbox. It contains the following subsections:

- Section 21.2.1.1, "Updating Your Application's adf-config.xml File"
- Section 21.2.1.2, "Updating Your Application's web.xml File"
- Section 21.2.1.3, "Selecting a Database Store for Your Application"
- Section 21.2.1.4, "Enabling a Full Page Refresh at Runtime"

21.2.1.1 Updating Your Application's adf-config.xml File

By default, sandbox creation is enabled for all namespaces that are mapped to the default customization store (defined in the `<mds-config>` section of the `adf-config.xml` file). You can, however, enable sandbox for a selected number of namespaces only. To do this, you must add a `<pe:sandbox-namespaces>` element to the `adf-config.xml` file, and then define the namespaces for which you want to support sandbox creation.

> **Note:** For information about the Composer-specific configurations you can make in `adf-config.xml`, see Section B.2.2, "adf-config.xml."

To configure sandbox creation in `adf-config.xml`:

1. Open the `adf-config.xml` file located in the `ADF META-INF` folder under `Descriptors` in the Application Resources panel.

2. Under the `<metadata-namespaces>` element, ensure that `<namespace>` elements are defined for all metadata for which you want to enable sandbox creation, as shown in Example 21–1.

Example 21–1 Namespace Definitions in the adf-config.xml File

```
<!-- Your jspx customizations alone go here -->
   <namespace path="/pages" metadata-store-usage="WebCenterFileMetadataStore">
     <namespace-restriction type="CUSTOMIZATIONS"/>
   </namespace>
<!-- Your pagedef customizations alone go here -->
   <namespace path="/pageDefs" metadata-store-usage="WebCenterFileMetadataStore">
     <namespace-restriction type="CUSTOMIZATIONS"/>
     </namespace>
```

3. Add the `<pe:sandbox-namespaces>` element within the `<pe:page-editor-config>` section and add individual `<pe:namespace>` tags for all namespaces for which you want to enable sandbox creation, as show in Example 21–2.

Example 21–2 Configuring Namespaces for Sandbox Creation

```
<pe:sandbox-namespaces>
  <pe:namespace path="/pages"/>
  <pe:namespace path="/pageDefs"/>
</pe:sandbox-namespaces>
```

4. Save the adf-config.xml file.

21.2.1.2 Updating Your Application's web.xml File

To ensure that a sandbox is configured when you are in Edit mode of a page, you must create a filter in your application's web.xml file and set the appropriate filter mappings. All requests are then routed through this filter, and a sandbox is created for all Edit mode customizations. If you are using a file system metadata store, then there is no action performed on a filtered request.

> **Note:** For information about the Composer-specific configurations you can make in web.xml, see Section B.2.4, "web.xml."

This section provides the example of defining a Composer-specific filter and its relevant filter mappings in your application's web.xml file. It describes how to add the filter, WebCenterComposerFilter.

To define a Composer-specific filter and the filter mappings:

1. Open the *application_root*/Portal/public_html/WEB-INF/web.xml file.
2. Add WebCenterComposerFilter before the adfBindings filter:

```
<filter>
  <filter-name>composerFilter</filter-name>

<filter-class>oracle.adf.view.page.editor.webapp.WebCenterComposerFilter</filte
r-class>
</filter>
```

3. Add corresponding <filter-mapping> elements before the filter mapping for AdfBindingFilter as shown in Example 21–3.

Example 21–3 Filter Mappings for Composer-Specific Filter

```
<filter-mapping>
  <filter-name>composerFilter</filter-name>
  <servlet-name>Faces Servlet</servlet-name>
  <dispatcher>FORWARD</dispatcher>
  <dispatcher>REQUEST</dispatcher>
</filter-mapping>
```

The <url-pattern> tag is used to specify the pages that must pass through the WebCenterComposerFilter so that sandbox creation can be enabled when a page goes into Edit mode.

> **Note:** The order in which you define filters is important. Requests pass through these filters sequentially and if they are not defined in the correct order, the application will not run as designed. Your web.xml file must have the WebCenterComposerFilter implementation first, followed by the AdfBindingFilter implementation.

4. Save the web.xml file.

21.2.1.3 Selecting a Database Store for Your Application

To enable sandbox creation, your application must be configured to use a database store. Therefore, while deploying your application to a WebLogic Managed Server, ensure that you select a database repository and specify a partition name for the application.

For information about deploying your application from JDeveloper to a WebLogic Managed Server, see Section 7.3.4.1, "Deploying to a Managed Server Using Local Data Sources."

21.2.1.4 Enabling a Full Page Refresh at Runtime

When you enable sandbox creation in your application, you must ensure that a full page refresh is performed on entering and exiting page Edit mode. For the detailed steps to be performed, see Section 21.3.7, "How to Redirect the Servlet to Enable Switch Between MDS Customization Layers."

21.2.2 What Happens at Runtime

When a user switches to page Edit mode, the presence of a **Save** button on the Composer toolbar indicates that sandbox creation is enabled for the application. Changes made to the page or shared components on the page are not saved until the user clicks Save. Once saved, the customizations are available to all application users. If the **Save** button is not rendered, then sandbox is not available and each change is committed immediately.

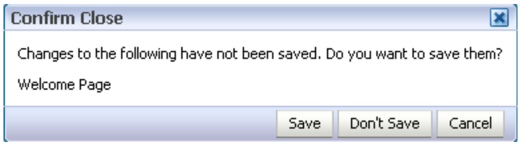
When editing component properties in the Component Properties dialog, clicking **Apply** results in the following:

- If the sandbox is not available, then the page is refreshed to display the changes made to component properties and changes are saved to the back end.
- If the sandbox is available, then the page is refreshed to display the changes made to component properties. To save changes, user must click **Save**.

Clicking **Save** or **Close** on the page results in the following events:

- On clicking **Save**, the sandbox is committed and a new sandbox is created. The page remains in Edit mode.
- On clicking **Close**, either of the following two events can occur:
  - If there are no changes since the last Save operation, then the sandbox is destroyed and Composer is closed, taking the user back to View mode.
  - If there are unsaved changes, then a Close Confirmation dialog lists the page name and unsaved task flow names, as shown in Figure 21–1.

Figure 21–1 Confirm Close Dialog in Composer



Changes to the following have not been saved. Do you want to save them?

Welcome Page

Users can select from the following options:

* Click **Save** to commit the sandbox and close Composer.
* Click **Don't Save** to destroy the sandbox and close Composer.

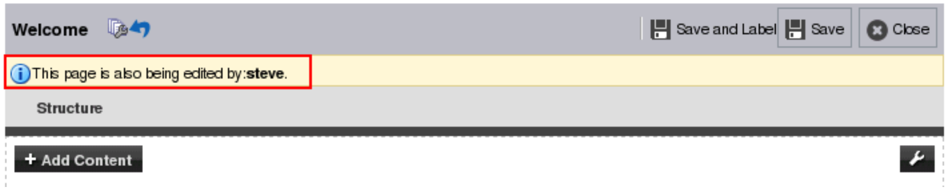
- * Click **Cancel** to close the dialog and return to Composer without saving the changes.

Notes: If a user navigates away from a page while editing it and then returns to the page, any unsaved changes are lost.

What Happens During Concurrent Edits

If two or more users are editing the same page or task flow using the same customization layer, then the page displays a message to each user that another user is editing the page or task flow, as shown in Figure 21–2.

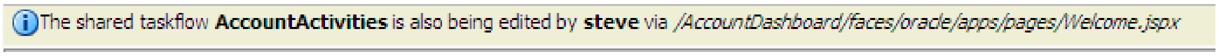
Figure 21–2 Page Concurrency Message



This page is also being edited by:**steve**.

If two or more users have zoomed into a task flow at the same time in the same customization layer and are editing it, then a concurrency message appears, as shown in Figure 21–3.

Figure 21–3 Task Flow Concurrency Message



The shared taskflow **AccountActivities** is also being edited by **steve** via */AccountDashboard/faces/oracle/apps/pages/Welcome.jspx*

Note: If a user zoomed into a task flow, made some customizations, and zoomed out of the task flow, then the task flow concurrency message continues to display to other users until that user saves the customizations.

Changes that are saved last overwrite prior changes. For example, if users A and B are editing a page or task flow simultaneously, then concurrency issues are handled as follows:

- If A saves the page or task flow first, then A's changes are committed to MDS. Later, when B saves the page or task flow, A's changes are overwritten with B's changes.
- If A deletes a component while B is trying to personalize (say move) that same component in View mode, a WebCenter error page is displayed to B. B has to simply navigate back to the original page. The deleted component does not appear, and B can continue working on other components.

21.2.3 How to Disable Sandbox for an Application

To ensure that changes are committed to the back end immediately, you can disable the sandbox.

To disable sandbox:

1. Open the `adf-config.xml` file located in the `ADF META-INF` folder under `Descriptors` in the Application Resources panel.
2. Under the `<pe:page-editor-config>` element, add the `<pe:disable-sandbox>` attribute and set it to `true`.
3. Save `adf-config.xml`.

21.2.4 How to Destroy Stale Sandboxes

When users edit a page at runtime, if the browser closes unexpectedly or the user navigates away from the page, the sandbox used in that session is still available. Any other user accessing the same page continues to see a concurrency message that another user is editing the same page. You can destroy such stale sandboxes to free some space in the database store and enhance performance.

You can ensure that a stale sandbox is destroyed when:

- A session times out.

  The `<session-timeout>` element in the application's `web.xml` file defines the time duration after which the sandbox is destroyed. To ensure this happens, you must configure `WebCenterComposerSessionListener` in your application's `web.xml` file. This listener is called when a session times out. It creates a new sandbox when the same user enters page Edit mode.

- The user logs in to Edit mode of the page again, with the same user name.

  In this case, a new sandbox is created when the same user switches to Edit mode.

To configure `WebCenterComposerSessionListener`:

1. Open the *`application_root`*`/Portal/public_html/WEB-INF/web.xml` file.
2. Define a new listener, `WebCenterComposerSessionListener`, as shown in the following example:

```
<listener>
  <description>Composer Http Session Listener</description>
  <display-name>Composer Http Session Listener</display-name>
  <listener-class>
    oracle.adf.view.page.editor.webapp.WebCenterComposerSessionListener
  </listener-class>
</listener>
```

3. Save the `web.xml` file.

For information about the Composer-specific configurations you can make in `web.xml`, see Section B.2.4, "web.xml."

21.3 Adding Customization Layers to View and Edit Modes: Example

You can apply customizations to a metadata object based on client-defined criteria. For example, you can customize an application and the metadata objects that it uses based on an end user's permissions, an application's deployment location (also called *localization*), or a specific industry domain. Each such category—permissions, localization, and domain—denotes a customization layer, and each is depicted using a `CustomizationClass`. A `CustomizationClass` is the interface MDS uses to identify the customization layer to be overlaid on the base definition. See Section 21.3.3, "How to Create a Custom UserCC Tip Layer" for an example.

When you implement a CustomizationClass, you must also register it with the MDS. The MDS provides the ability to associate a list of CustomizationClass types with a single MetadataObject. This is called *fine-grained* association. The MDS also provides the ability to associate a list of CustomizationClass types with a set of MetadataObjects. This is called the *coarse-grained* association.

A customizable application can have multiple customization layers. You can select the layer to which you want to apply customizations. The layer you choose to customize is called the tip layer. When you drop Composer components onto a JSF page, the ADF configures a default SiteCC (site) tip layer in the application. Consequently, the adf-config.xml file is updated to include the SiteCC customization class. This tip layer stores all customizations made to the page.

This section explains through example how adding customization tip layers to View and Edit runtime modes provides user customization capabilities to all users and application customization capabilities to selected users. To enable application customizations in the Edit mode, the site tip layer is added. To enable user customization in View mode, the user tip layer is added. By default, the user tip layer is applied on top of the site tip layer. The user tip layer stores all user customizations made in View mode in a specific location created for the user who made them. Such changes are visible only to that user. The site tip layer stores all application customizations made in the Edit mode and are visible to all users.

To enable tip layers at runtime, Composer provides the WebCenterComposerFilter filter and supplies a means of defining an abstract factory for creating the MDS SessionOptions object. This object provides applicable customization layers at runtime and enables users to perform user customizations (View mode) or application customizations (Edit mode) based on their role. When creating a new MDS session, the MDSSession.createSession method of this object is used to specify the session options.

This section provides an example exercise for creating, implementing, and registering customization layers, configuring WebCenterComposerFilter, and switching between MDS customization layers. It contains the following subsections:

- Section 21.3.1, "How to Add Composer to a JSF Page"
- Section 21.3.2, "How to Create a Custom SiteCC Tip Layer"
- Section 21.3.3, "How to Create a Custom UserCC Tip Layer"
- Section 21.3.4, "How to Implement the ComposerSessionOptionsFactory Class"
- Section 21.3.5, "How to Register the Implementation with Composer"
- Section 21.3.6, "How to Configure WebCenterComposerFilter"
- Section 21.3.7, "How to Redirect the Servlet to Enable Switch Between MDS Customization Layers"
- Section 21.3.8, "What Happens at Runtime"

21.3.1 How to Add Composer to a JSF Page

This section describes how to add the Page Customizable component to a JSF page. The purpose of this exercise is to provide Composer in the Edit mode at runtime so that the admin user can perform customizations at the site level. This section includes the addition of a Change Mode Link to enable switching from View mode to Edit mode at runtime.

To add Composer to a JSF Page:

1. Open the JSPX page and select **Composer** from the Component Palette.
2. Select **Change Mode Link** and drop it onto the page.
3. Select **Page Customizable** and drop it onto the page.

   The Source view should like this:

   ```
   <af:form id="f1">
     <pe:changeModeLink id="cml1"/>
     <pe:pageCustomizable id="pageCustomizable1">
       <cust:panelCustomizable id="panelCustomizable1" layout="scroll"/>
         <f:facet name="editor">
           <pe:pageEditor id="pep1"/>
         </f:facet>
     </pe:pageCustomizable>
   </af:form>
   ```

   When you drop these components onto the page, the default `SiteCC` tip layer is extended by the ADF. Consequently, the `adf-config.xml` file is updated with this customization class:

   ```
   <cust-config>
     <match>
       <customization-class name="oracle.adf.share.config.SiteCC" />
     </match>
   </cust-config>
   ```

   > **Note:** If you want your application to use `UserCC` as the default tip layer, you can simply replace `oracle.adf.share.config.SiteCC` with `oracle.adf.share.config.UserCC` in the `cust-config` section of the `adf-config.xml` file. However, to use `UserCC` as the default tip layer, you must have secured your application. You cannot implement a `UserCC` tip layer without provisioning users and roles in your application.

21.3.2 How to Create a Custom SiteCC Tip Layer

This section describes how to create a custom `SiteCC` tip layer, `site`, in which all application-level customizations performed in Edit mode are stored. In this sample application, application-level customizations are stored in the `/mds/mdssys/cust/site/webcenter/`*`pagename`*`.jspx.xml`directory.

To create the `site` tip layer:

1. From the File menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.

   The Create Java Class dialog opens.

3. In the **Name** field, enter `SiteCC`.
4. In the **Extends** field, enter `CustomizationClass`.

   This imports `oracle.mds.cust.CustomizationClass`.

   Ensure the **Implement Abstract Methods** check box is selected.

5. Click **OK.**

   The `SiteCC.java` file is rendered in the Source view.

6. In the Source view, press `Enter` after `public class SiteCC extends CustomizationClass`, and add the following `string`:

   ```
   {
     private static final String DEFAULT_LAYER_NAME = "site";
     private String mLayerName = DEFAULT_LAYER_NAME;
     private String mLayerValue = "webcenter";
   ```

   The following libraries are imported:

   ```
   import oracle.mds.core.MetadataObject;
   import oracle.mds.core.RestrictedSession;
   import oracle.mds.cust.CacheHint;
   ```

7. Update the code as shown in **bold** here:

   ```
   public class SiteCC extends CustomizationClass
   {
     private static final String DEFAULT_LAYER_NAME = "site";
     private String mLayerName = DEFAULT_LAYER_NAME;
     private String mLayerValue = "webcenter";
     //Note: You can provide any site name.

     public CacheHint getCacheHint()
     {
       return CacheHint.ALL_USERS;
     }

     public String getName()
     {
       return mLayerName;
     }

     public String[] getValue(RestrictedSession mdsSession, MetadataObject mo)
     {
       return new String[] { mLayerValue };
     }
   }
   ```

8. Save the `SiteCC.java` file.

21.3.3 How to Create a Custom UserCC Tip Layer

This section describes an example showing how to create a custom `user` tip layer for a user, `scott`. This layer is applied on top of the `site` layer. The user customizations that a user performs in View mode are saved in this `user` tip layer in a folder created specifically for the logged-in user. In this example, the user customizations performed in View mode are saved in the `/mds/mdssys/cust/user/scott/`*`pagename`*`.jspx.xml` directory.

> **Note:** For illustration purpose, this example describes a simple scenario where a `UserCC` tip layer is created for just one user, `scott`. In a real life application, you can configure the `UserCC` layer to return the name of the user who requested the page.

To create the user tip layer:

1. From the **File** menu, choose **New**.

2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.

   The Create Java Class dialog opens.

3. In the **Name** field, enter `UserCC`.
4. In the **Extends** field, enter `CustomizationClass`.

   This imports the `oracle.mds.cust.CustomizationClass`.

   Ensure the **Implement Abstract Methods** check box is selected.

5. Click **OK.**

   The `UserCC.java` file displays in the Source view.

6. In the Source view, press `Enter` after `public class UserCC extends CustomizationClass`, and add the following `string`:

```
{
  private static final String DEFAULT_LAYER_NAME = "user";
  private String mLayerName = DEFAULT_LAYER_NAME;
  private String mLayerValue = "scott"; //The name of the logged-in user
in this example. The logged-in user name can be acquired dynamically.
```

   The following libraries are imported:

```
import oracle.mds.core.MetadataObject;
import oracle.mds.core.RestrictedSession;
import oracle.mds.cust.CacheHint;
```

7. Update the code as shown in **bold** here:

```
public class UserCC extends CustomizationClass
{
  private static final String DEFAULT_LAYER_NAME = "user";
  private String mLayerName = DEFAULT_LAYER_NAME;
  private String mLayerValue = "scott";

  public CacheHint getCacheHint()
  {
    return CacheHint.USER;
  }

  public String getName()
  {
    return mLayerName;
  }

  public String[] getValue(RestrictedSession mdsSession, MetadataObject mo)
  {
    return new String[]{mLayerValue};
  }
}
```

8. Save the `UserCC.java` file.

21.3.4 How to Implement the ComposerSessionOptionsFactory Class

In this section, the `ComposerSessionOptionsFactory` class provided by the ADF is implemented to supply MDS `SessionOptions` for each HTTP request.

To implement the `ComposerSessionOptionsFactory` class:

1. From the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.

   The Create Java Class dialog opens.
3. In the **Name** field, enter `AppsSessionOptionsFactoryImpl`.
4. Click **OK.**

   The `AppsSessionOptionsFactoryImpl.java` file is rendered in the Source view.
5. Import the following libraries:

```
import oracle.adf.view.page.editor.mds.ComposerSessionOptionsFactory;
import oracle.adf.view.page.editor.mode.ModeContext;
import oracle.mds.config.CustClassListMapping;
import oracle.mds.config.CustConfig;
import oracle.mds.core.SessionOptions;
import oracle.mds.cust.CustClassList;
import oracle.mds.cust.CustomizationClass;
```

6. Add the following code to implement the `ComposerSessionOptionsFactory` class and provide `SessionOptions`:

```
public class AppsSessionOptionsFactoryImpl
  implements ComposerSessionOptionsFactory
{

  public SessionOptions createSessionOptions(SessionOptions
defaultSessionOptions, String mode)
  {
    CustomizationClass[] custLayer;
    CustConfig custConfig = null;

    if (ModeContext.EDIT_MODE.equals(mode))
    {
      //Mode is Edit, change to SiteCC
      custLayer = EDIT_LAYER;
    }
    else
    {
      //Mode is View, change to UserCC + SiteCC
      custLayer = VIEW_LAYER;
    }

    try
    {
      CustClassList custClassList = new CustClassList(custLayer);
      CustClassListMapping custClassListMapping =
        new CustClassListMapping("/", null, null, custClassList);
      custConfig = new CustConfig(new CustClassListMapping[]
        { custClassListMapping });
    }
    catch (Exception e)
    {
      e.printStackTrace();

    }
if(defaultSessionOptions.getServletContextAsObject() != null)
{
    return new SessionOptions(defaultSessionOptions.getIsolationLevel(),
                              defaultSessionOptions.getLocale(), custConfig,
                              defaultSessionOptions.getVersionContext(),
                              defaultSessionOptions.getVersionCreatorName(),
                              defaultSessionOptions.getCustomizationPolicy(),

defaultSessionOptions.getServletContextAsObject());
  }
    else
    {
      return new SessionOptions(defaultSessionOptions.getIsolationLevel(),
                              defaultSessionOptions.getLocale(), custConfig,
                              defaultSessionOptions.getVersionContext(),
                              defaultSessionOptions.getVersionCreatorName(),
                              defaultSessionOptions.getCustomizationPolicy());
    }
  }

  //Edit mode SiteCC
  private static final CustomizationClass[] EDIT_LAYER =
    new CustomizationClass[]
    { new SiteCC() };

  //View mode SiteCC + USerCC
  private static final CustomizationClass[] VIEW_LAYER =
    new CustomizationClass[]
    { new SiteCC(), new UserCC() };

}
```

7. Save the `AppsSessionOptionsFactoryImpl.java` file.

21.3.5 How to Register the Implementation with Composer

For the `site` and `user` customization layers to function, you must register the `ComposerSessionOptionsFactory` class with Composer. For example, if the concrete class is `view.AppsSessionOptionsFactoryImpl`, the following snippet must be added to the `adf-config.xml` file located in the `/.adf/META-INF` folder in your application directory:

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">

<pe:session-options-factory>view.AppsSessionOptionsFactoryImpl</pe:session-options
-factory>
</pe:page-editor-config>
```

21.3.6 How to Configure WebCenterComposerFilter

You must configure the `WebCenterComposerFilter` filter in the `web.xml` file located in the `Portal/public_html/WEB-INF` folder in your application directory. This filter registers Composer's concrete `SessionOptionsFactory` with the ADF for every HTTP request. When the filter receives a call from the ADF, it forwards the request to the application and gets the `SessionOptions` with the new customized layer. If you have not set the `Sandbox` or `VersionContext` in the `SessionOptions`, then Composer sets its own Sandbox and returns it to the ADF. For more information on Sandbox, see Section 21.2.1, "How to Enable Composer Sandbox Creation."

The `composerFilter` and its filter mapping must be configured before `ADFBindingFilter`. For example, see the following `web.xml` file:

```
....

  <!-- WebCenterComposerFilter goes here -->
  <filter>
    <filter-name>composerFilter</filter-name>

<filter-class>oracle.adf.view.page.editor.webapp.WebCenterComposerFilter</filter-c
lass>
  </filter>
  <filter>
    <filter-name>adfBindings</filter-name>
    <filter-class>oracle.adf.model.servlet.ADFBindingFilter</filter-class>
  </filter>
.....
  <!-- WebCenterComposerFilter mapping goes here -->
  <filter-mapping>
    <filter-name>composerFilter</filter-name>
    <servlet-name>Faces Servlet</servlet-name>
    <dispatcher>FORWARD</dispatcher>
    <dispatcher>REQUEST</dispatcher>
  </filter-mapping>
  <filter-mapping>
    <filter-name>adfBindings</filter-name>
    <servlet-name>Faces Servlet</servlet-name>
    <dispatcher>FORWARD</dispatcher>
    <dispatcher>REQUEST</dispatcher>
  </filter-mapping>
....
```

Note: The order in which you define filters is important. Requests pass through these filters sequentially and if they are not defined in the correct order, the application will not run as designed. Your `web.xml` file must have the `WebCenterComposerFilter` implementation first, followed by the `AdfBindingFilter` implementation.

For information about the Composer-specific configurations you can make in `web.xml`, see Section B.2.4, "web.xml."

21.3.7 How to Redirect the Servlet to Enable Switch Between MDS Customization Layers

To redirect the servlet, that is, to refresh the full page at runtime, you must create:

- The `AppNavigationUtils` class, which calls the `AppNavigationUtils.redirectToSamePage()` method
- The `AppCloseHandler` CloseListener, which uses the `AppNavigationUtils` class
- The `AppModeBean`, which displays Edit mode

This section describes how to create these objects. It contains the following subsections:

- Section 21.3.7.1, "How to Create the AppNavigationUtils Class (start here)"
- Section 21.3.7.2, "How to Create AppCloseHandler"
- Section 21.3.7.3, "How to Register the AppCloseHandler"

- Section 21.3.7.4, "How to Create AppModeBean"

21.3.7.1 How to Create the AppNavigationUtils Class (start here)

To create the `AppNavigationUtils` class:

1. From the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.

   The Create Java Class dialog opens.
3. In the **Name** field, enter `AppNavigationUtils` and click **OK**.

   The `AppNavigationUtils.java` file is rendered in the Source view.
4. Import the following libraries:

```
import javax.faces.context.FacesContext;
import javax.servlet.http.HttpServletRequest;
```

5. Add the following code:

```
public class AppNavigationUtils
{

  public static void redirectToSamePage()
  {
    HttpServletRequest request =
(HttpServletRequest)FacesContext.getCurrentInstance().getExternalContext().getR
equest();
    String url = request.getRequestURL().toString();
    String _adfCtrlState = request.getParameter("_adf.ctrl-state");
    url = url + "?_adf.ctrl-state="+ _adfCtrlState;
    System.out.println(url);
    try
    {
      FacesContext.getCurrentInstance().getExternalContext().redirect(url);
      FacesContext.getCurrentInstance().responseComplete();
    }
    catch(Exception e)
    {
      e.printStackTrace();
    }
  }
}
```

6. Save the `AppNavigationUtils.java` file.

21.3.7.2 How to Create AppCloseHandler

To create `AppCloseHandler`:

1. From the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.

   The Create Java Class dialog opens.
3. In the **Name** field, enter `AppCloseHandler` and click **OK**.

   The `AppCloseHandler.java` file displays in the Source view.

4. Import the following libraries:

```
import oracle.adf.view.page.editor.event.CloseEvent;
import oracle.adf.view.page.editor.event.CloseListener;
```

5. Add the following code:

```
public class AppCloseHandler
  implements CloseListener
{

  public void processClose(CloseEvent closeEvent)
  {
    AppNavigationUtils.redirectToSamePage();
  }
}
```

6. Save the `AppCloseHandler.java` file.

21.3.7.3 How to Register the AppCloseHandler

After creating `AppCloseHandler`, you must register it in the Composer extension file, `pe_ext.xml`.

To register the event handler:

1. In the `pe_ext.xml` file, add the following entries:

```
<event-handlers>
  <event-handler event="close">view.AppCloseHandler</event-handler>
</event-handlers>
```

2. Save the file.

For more information about event handlers, see Section 19.6, "Configuring Event Handlers for Composer UI Events."

21.3.7.4 How to Create AppModeBean

To create `AppModeBean`:

1. From the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.

   The Create Java Class dialog opens.
3. In the **Name** field, enter `AppModeBean` and click **OK**.

   The `AppModeBean.java` file displays in the Source view.
4. Import the following libraries:

```
import javax.faces.event.ActionEvent;
import oracle.adf.view.page.editor.mode.ModeContext;
```

5. Add the following code:

```
public class AppModeBean
{

  public void edit(ActionEvent actionEvent)
  {
    ModeContext.getCurrent().setEditMode();
```

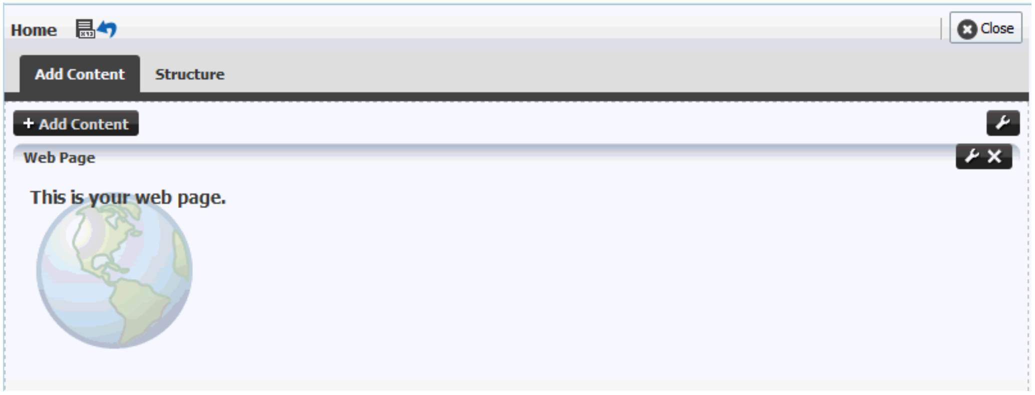
```
            AppNavigationUtils.redirectToSamePage();
          }
        }
```

6. Save the file.

21.3.8 What Happens at Runtime

To see how the `site` customization layer functions, first run the JSF page in a browser. Then log in to the page as `admin`, and click the **Edit** link to switch to Edit mode. At runtime, customize the page. For example, drop a Web page, movable box, or an image onto the page. The page should look like Figure 21–4.

Figure 21–4 Customized Page



Go to `/mds/mdssys/cust/site/webcenter` in your application directory, and open the *`pagename`*`.jspx.xml` file. This is where the application-level customizations that you made to the page are stored.

To use the `user` customization layer, log in to the page as `scott` and personalize the page in View mode. Then go to `/mds/mdssys/cust/user/scott` in your application directory, and open the *`pagename`*`.jspx.xml` file. This is where the user-level customizations that you made to the page are stored.

21.4 Troubleshooting MDS-Related Problems with Composer

This section provides information to assist you in troubleshooting MDS-related problems you may encounter while using Composer.

For information about configuring logging, see "Configuring ADF Logging for Composer".

Problem

Your application is configured to use MDS sandbox. When you run the application, the sandbox either does not work or generates exceptions.

Solution

Ensure the following:

- A database repository is used. Sandbox works only with a database-based repository, and not with a file-based repository.

- Ensure that the order of filters in `web.xml` is correct. The `<filter>` entries must be in the correct order for sandbox to work correctly.

For information, see Section 21.2, "Using Composer Sandbox."

22

Modifying Default Security Behavior of Composer Components

This chapter describes how to override the default security behavior of Composer components.

This chapter contains the following topics:

22.1 Applying Component-Level Restrictions by Defining Customization Policies

By default, the MDS restricts application customization of page components, that is, users cannot customize components or their attributes at runtime. To enable application customization, you must lift the default restrictions on components and their attributes. When you add a `Page Customizable` component to the page and populate it with content, the default customization restrictions on the `Page Customizable` and all its child components are lifted. However, in some instances, such as when the `Page Customizable` component is part of the template used for the page, you may need to explicitly allow application customization of components and their attributes. This section describes how to apply MDS type-level restrictions or instance-level restrictions on components and their attributes.

This section contains the following subsections:

Note: For information about creating customizable pages using page templates, see Section 18.1.7, "How to Create a Page Template for Creating Customizable Pages."

22.1.1 How to Define Type-Level Customization Policies

When you apply type-level restrictions on a component, all instances of the component are restricted. This is useful if you want to allow only a specific set of users to edit a particular component or its attributes while restricting all other users from editing it. For example, if you want to allow only a page creator or application administrator to change the page layout at runtime, you can define type-level restrictions on the `Layout Customizable` component and enable only users with `admin` role to edit this component.

You can enable type-level restrictions on components and their attributes in a standalone XML file and then register this file in the `mds-config` section of the `adf-config.xml` file or in an `mds-config.xml` file. The standalone XML file contains annotations that match the types for which customization restrictions must be specified.

You can create an `mds-config.xml` file in your application's `META-INF` directory and register the standalone file in the `mds-config.xml` file.

To enable application customization of selected components or attributes at the type level:

1. Create an XML document, for example `standalone.xml`, add the following code, and replace the text in bold with appropriate values:

   ```
   <?xml version="1.0" encoding="UTF-8" ?>
   <grammarMetadata xmlns="http://xmlns.oracle.com/bali/xml/metadata"
                    xmlns:mds="http://xmlns.oracle.com/mds"
                    namespace="tag_namespace">
     <elementMetadata elementName="component_name">
       <mds:customizationAllowed>true</mds:customizationAllowed>
         <attributeMetadata attributeName="attribute_name">
           <mds:customizationAllowedBy>security_roles</mds:customizationAllowedBy>
         </attributeMetadata>
     </elementMetadata>
   </grammarMetadata>
   ```

   The `<customizationAllowedBy>` tag can appear only once. Multiple values can be specified as a space-separated list of allowed policies as part of the declaration. To enable or disable application customization for specific users or roles, the users or roles must be included in the customization policy of the MDS session. For more information, see Section 22.2.3, "How to Customize the SessionOptions Object to Include Customization Policy."

   The `<customizationAllowed>` tag takes a Boolean as its value. A value of `true` for this tag means that anyone can customize the specified component, so long as other inherited customization polices allow it.

   The `<customizationAllowedBy>` tags do not serve any purpose if the same object has been tagged with `<customizationAllowed>false</ customizationAllowed>`. Additionally, the customization must be allowed at the top level of the object tree. Otherwise the default behavior dictates that no customization can be permitted at a lower level.

2. Register this XML file in either of the following ways:

To register the XML file in the adf-config.xml file, add the type-config element inside the mds-config section using the following format:

```
<mds-config xmlns="http://xmlns.oracle.com/mds/config">
  <type-config>
    <standalone-definitions>
      <classpath>File_Path/standalone.xml</classpath>
    </standalone-definitions>
  </type-config>
</mds-config>
```

Create an mds-config.xml file in your application's META-INF folder and add a type-config element inside the mds-component-config section of the file in the following format:

```
<?xml version="1.0" encoding="UTF-8" ?>
<mds-component-config version="11.1.1.000"
xmlns="http://xmlns.oracle.com/mds/config">
  <type-config>
    <standalone-definitions>
      <classpath>File_Path/standalone.xml</classpath>
    </standalone-definitions>
  </type-config>
</mds-component-config>
```

3. Make the standalone files and associated XSDs available in a shared library JAR file; otherwise MDS cannot load them.

   At runtime, MDS searches all mds-config instances in the META-INF directories and loads all the customization restrictions specified in standalone files.

22.1.2 How to Define Instance-Level Customization Policies

Instance-level restrictions are useful if you want to allow or restrict customization of a particular instance of a component. The code for instance-level customization policies is similar to that used in the type-level policy definitions. However, instance-level policies override type-level policies. That is, instance-level restrictions hold true irrespective of the restrictions from the type. For example, if you have used a form with some UI elements in your login page and in other pages such as a user preferences page, you may want to allow users to customize all instances of the form except on the login page. For this, you can allow customization of the form at the type level and restrict customization only on the instance in the login page.

You can enable customization on a component or any of its attributes at the instance level. To apply customization restriction at the component level, you can set the customizationAllowed and customizationAllowedBy attributes on the component in JDeveloper (see Section 22.1.1, "How to Define Type-Level Customization Policies"). To apply restrictions on a component's attributes, perform the steps described in this section.

Instance-level policies for component attributes are defined in an RDF file. The RDF file is picked up by MDS, and the policies are implemented.

To define instance-level customization policies:

1. Create an RDF file with the same name as the JSPX file, but using the RDF extension, for example main.jspx.rdf.

   Create this file in the *application_home*/*project*/public_html/mdssys/mdx folder. Creating the RDF file in this folder structure ensures that the file is picked up by MDS and the policies defined here are implemented.

2. Include tags in the following format to apply restrictions on a component's attribute:

   ```
   tag_id(xmlns(tag_prefix=tag_namespace))/@tag_prefix:attribute_name
   ```

   The following example shows how to apply a restriction on a `Go Image Link` component and the `text` attribute of a `Command Button` component:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
   xmlns:dc="http://purl.org/dc/elements/1.1/">
   <rdf:Description rdf:about="/"/>
   <!-- Opens the customization on a tag with ID 'gil1'.  -->
   <rdf:Description rdf:about="gil1">
     <customizationAllowed
   xmlns="http://xmlns.oracle.com/mds">false</customizationAllowed>
   </rdf:Description>

   <!-- Restricts customizations on a commandButton component's 'text' attribute.
   -->
   <rdf:Description rdf:about="cb1/@text">
     <customizationAllowed
   xmlns="http://xmlns.oracle.com/mds">false</customizationAllowed>
   </rdf:Description>
   ```

At runtime, these policies are read and the artifacts are enabled for customization accordingly.

22.2 Applying a Component Instance-Level Customization Restriction By Using Security Roles: Example

This section explains how you can use component-level restrictions to limit access to certain component functions, based on different user roles and responsibilities. Specifically, it describes how to apply an instance-level customization restriction to a `Panel Customizable` component to provide customization access to only users with `admin` role. That is, when a user with `admin` role logs into the system at runtime, the user can customize the `Panel Customizable` on which the instance-level customization is applied.

In Composer's Property Inspector, the properties of the `Panel Customizable` are not displayed to users who do not have `admin` privileges. The Edit icon or menu item is disabled on restricted components. These users cannot drop any `Movable Box` into the `Panel Customizable` because of the applied restriction. Moreover, they cannot rearrange the `Show Detail Frames` inside this `Panel Customizable`.

To restrict a functionality based on user roles is one way to apply customization restrictions. You can also use expression language expressions (ELs), which provide roles-based results, to enable or restrict access to a component function.

> **Note:** MDS customization restrictions are natively honored only by `Panel Customizable`, `Show Detail Frame`, and `Layout Customizable` components, and not ADF Faces components, such as `Splitter` and `showDetailItem`.

This section contains the following subsections:

- Section 22.2.1, "How to Configure ADF Security"

- Section 22.2.2, "How to Define Roles and Grant Privileges in the jazn-data.xml File"
- Section 22.2.3, "How to Customize the SessionOptions Object to Include Customization Policy"
- Section 22.2.4, "How to Register the Implementation with Composer"
- Section 22.2.5, "How to Configure WebCenterComposerFilter"
- Section 22.2.6, "How to Apply an Instance-Level Customization Restriction"
- Section 22.2.7, "What Happens at Runtime"

22.2.1 How to Configure ADF Security

Before applying an instance-level customization restriction, you must secure your application using ADF security. For information, see Section 74.3, "Configuring ADF Security."

22.2.2 How to Define Roles and Grant Privileges in the jazn-data.xml File

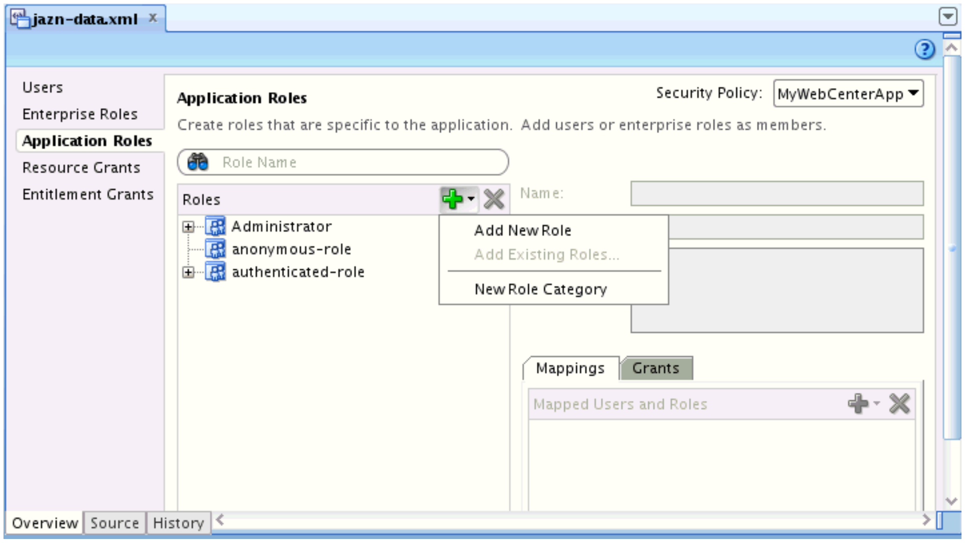
In a previous section, a customization restriction is applied to a `Panel Customizable` component so that, at runtime, only the user with `admin` role can access all the features of `Panel Customizable`, and therefore, can customize its attributes.

In this section, two roles, `admin` and `customer`, are created and page permissions are granted to both users. Users with `admin` role can customize the `Panel Customizable` (`panelCustomizable1`) component. However, because of the customization restriction you applied in an earlier section, users with `customer` role do not have the rights to customize `panelCustomizable1`, and these users cannot use all the features of `panelCustomizable1`.

To create roles in the `jazn-data.xml` file:

1. In the Application Resources panel, right-click the **jazn-data.xml** file and select **Open**.
2. Click the **Application Roles** tab.
3. In the Application Roles page, click the **Add** icon in the Roles section, and select **Add New Role**, shown in Figure 22–1.

Figure 22–1 Application Roles in the jazn-data.xml File



Security Policy: MyWebCenterApp

4. In the **Name** field, specify the role name, `admin`.

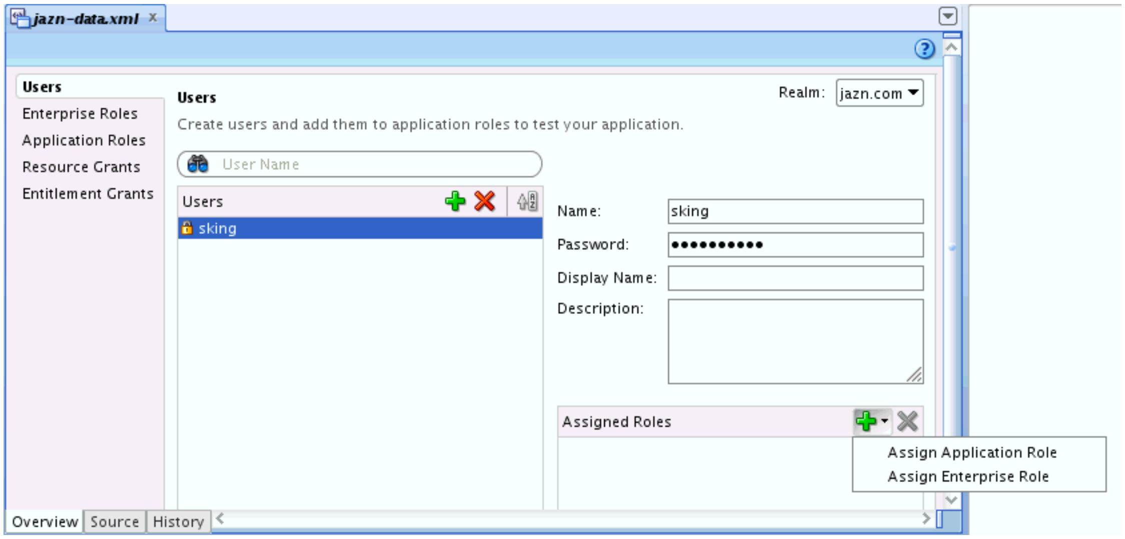
5. Optionally, in the Display Name and Description fields, specify a display name and description for the new role.

6. Repeat steps 3 through 6 to add another role, `customer`.

7. Click the **Users** tab.

8. In the Users page, create new users by clicking the **New User** icon and specifying credentials. Assign roles to these users by clicking the **Assign Roles** icon in the Assigned Roles section and selecting **Assign Application Role**, as shown in Figure 22–2.

Figure 22–2 Users Section in the jazn-data.xml File



Realm: jazn.com

Name: sking

Password: ••••••••••

Display Name:

Description:

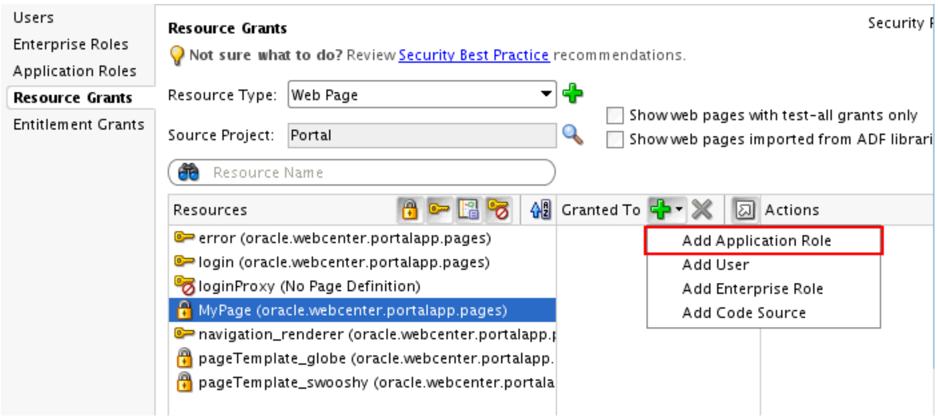
9. Click the **Resource Grants** tab on the left on the page.

10. From Resource Type, select **Web Page**.

11. From the list of page definitions, select the page on which you want to grant privileges.

12. In the Granted To column, click the **Add Grantee** icon, and select **Add Application Role** from the list, as shown in Figure 22–3.

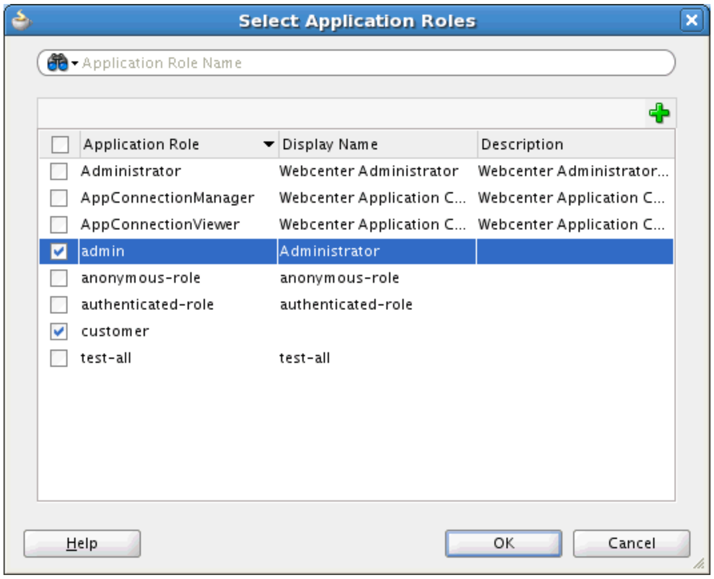
Figure 22–3 Resources in the jazn-data.xml File



error (oracle.webcenter.portalapp.pages)
login (oracle.webcenter.portalapp.pages)
loginProxy (No Page Definition)
MyPage (oracle.webcenter.portalapp.pages)
navigation_renderer (oracle.webcenter.portalapp.p
pageTemplate_globe (oracle.webcenter.portalapp.
pageTemplate_swooshy (oracle.webcenter.portala

13. In the Select Roles dialog (Figure 22–4), select the `admin` and `customer` roles and click **OK**.

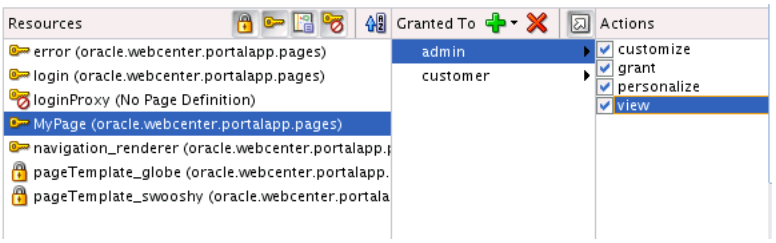
Figure 22–4 Select Roles Dialog



☐	Application Role	Display Name	Description
☐	Administrator	Webcenter Administrator	Webcenter Administrator...
☐	AppConnectionManager	Webcenter Application C...	Webcenter Application C...
☐	AppConnectionViewer	Webcenter Application C...	Webcenter Application C...
☑	admin	Administrator	
☐	anonymous-role	anonymous-role	
☐	authenticated-role	authenticated-role	
☑	customer		
☐	test-all	test-all	

14. Select each role and grant all the permissions (customize, grant, personalize, and view), as shown in Figure 22–5.

Figure 22–5 Permissions List in the jazn-data.xml File


Resources
error (oracle.webcenter.portalapp.pages)
login (oracle.webcenter.portalapp.pages)
loginProxy (No Page Definition)
MyPage (oracle.webcenter.portalapp.pages)
navigation_renderer (oracle.webcenter.portalapp.p
pageTemplate_globe (oracle.webcenter.portalapp.
pageTemplate_swooshy (oracle.webcenter.portala
Granted To
admin
customer
Actions
☑ customize
☑ grant
☑ personalize
☑ view

For more information about creating users and roles, see the "Enabling ADF Security in a Fusion Web Application" chapter in *Fusion Developer's Guide for Oracle Application Development Framework*.

22.2.3 How to Customize the SessionOptions Object to Include Customization Policy

To enable the expected runtime behavior of the `Panel Customizable` component, where only the user with `admin` role has access to all capabilities of the `Panel Customizable`, including the ability to customize it, the MDS session for this request must include the user roles in its customization policy. To achieve this, the following customization policy is included in the `SessionOptions` object:

```
SecurityContext stx = ADFContext.getCurrent().getSecurityContext();
  cPol = new CustomizationPolicy(stx.getUserRoles());
```

Then the MDS session is created with this customization policy.

To implement the `ComposerSessionOptionsFactory` class:

1. From the **File** menu, choose **New**.
2. In the New Gallery dialog, expand **General**, select **Java**, then **Java Class**, and click **OK**.
3. In the **Name** field in the Create Java Class dialog, enter `AppsSessionOptionsFactoryImpl`.
4. Click **OK.**

   The `AppsSessionOptionsFactoryImpl.java` file is rendered in the Source view.
5. Import the following libraries:

```
import oracle.adf.share.ADFContext;
import oracle.adf.share.security.SecurityContext;
import oracle.adf.view.page.editor.mds.ComposerSessionOptionsFactory;
import oracle.adf.view.page.editor.mode.ModeContext;
import oracle.mds.config.CustClassListMapping;
import oracle.mds.config.CustConfig;
import oracle.mds.core.SessionOptions;
import oracle.mds.cust.CustClassList;
import oracle.mds.cust.CustomizationClass;
import oracle.mds.cust.CustomizationPolicy;
```

6. Add the following code to implement the `ComposerSessionOptionsFactory` class and provide `SessionOptions`:

```
public class AppsSessionOptionsFactoryImpl
implements ComposerSessionOptionsFactory
{
  public AppsSessionOptionsFactoryImpl()
  {
  }
  public SessionOptions createSessionOptions(SessionOptions sessionOptions,
                                             String mode)
  {
    CustomizationClass[] custLayer;
    CustConfig custConfig = null;
    CustomizationPolicy cPol = null;

    if (ModeContext.EDIT_MODE.equals(mode))
    {
      //Mode is Edit, change to SiteCC
      custLayer = EDIT_LAYER;
    }
    else
    {
      //Mode is View, change to UserCC + SiteCC
      custLayer = VIEW_LAYER;
    }
    try
    {
      CustClassList custClassList = new CustClassList(custLayer);
      CustClassListMapping custClassListMapping =
        new CustClassListMapping("/", null, null, custClassList);
      custConfig = new CustConfig(new CustClassListMapping[]
            { custClassListMapping });
      SecurityContext stx = ADFContext.getCurrent().getSecurityContext();
      cPol = new CustomizationPolicy(stx.getUserRoles());
    }
    catch (Exception e)
    {
      e.printStackTrace();
    }
    if(sessionOptions.getServletContextAsObject() != null)
    {
      return new SessionOptions(sessionOptions.getIsolationLevel(),
                              sessionOptions.getLocale(), custConfig,
                              sessionOptions.getVersionContext(),
                              sessionOptions.getVersionCreatorName(),
                              cPol == null ?
sessionOptions.getCustomizationPolicy() : cPol,
                              sessionOptions.getServletContextAsObject());
    }
    else
    {
      return new SessionOptions(sessionOptions.getIsolationLevel(),
                              sessionOptions.getLocale(), custConfig,
                              sessionOptions.getVersionContext(),
                              sessionOptions.getVersionCreatorName(),
                              cPol == null ?
sessionOptions.getCustomizationPolicy() : cPol);
    }
  }
  //Edit mode SiteCC
  private static final CustomizationClass[] EDIT_LAYER =
    new CustomizationClass[]
    { new SiteCC() };
  //View mode SiteCC + USerCC
  private static final CustomizationClass[] VIEW_LAYER =
    new CustomizationClass[]
    { new SiteCC(), new UserCC() };
```

```
        }
```

22.2.4 How to Register the Implementation with Composer

Perform the steps described in Section 21.3.5, "How to Register the Implementation with Composer" to register the ComposerSessionOptionsFactory class implementation, where user roles were included in the MDS session's customization policy.

22.2.5 How to Configure WebCenterComposerFilter

To configure WebCenterComposerFilter, perform the steps described in Section 21.3.6, "How to Configure WebCenterComposerFilter."

22.2.6 How to Apply an Instance-Level Customization Restriction

In this section, you enable application customization for particular role on a Panel Customizable component. At runtime, only the specified role, for example admin, can access all the features of the Panel Customizable, including customizing its attributes. Users with any other roles can use only a limited set of component features.

To apply an instance-level customization restriction:

1. In the JSPX page, add a **Change Mode Link** component from the Composer tag library.
2. Add a **Page Customizable** component below the Change Mode Link component.
3. Apply an instance-level customization restriction on the component Panel Customizable in the Page Customizable.

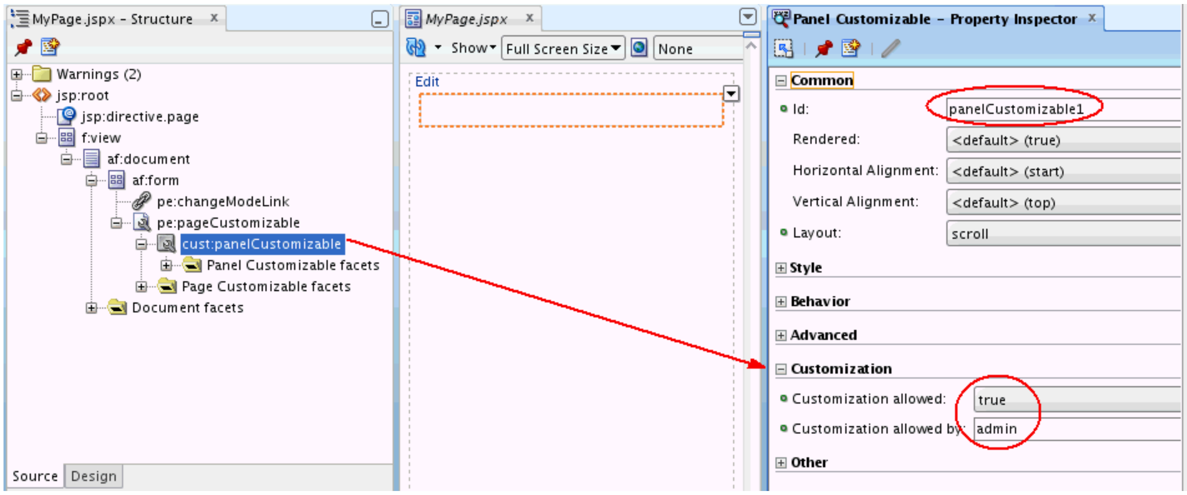
   This restriction is stored in the following directory: public_html/mdssys/mdx/<pagename>.jspx.rdf.

   The Source view should look like this:

   ```
   <pe:changeModeLink id="cml1"/>
   <pe:pageCustomizable id="pageCustomizable1">
     <cust:panelCustomizable id="panelCustomizable1" layout="scroll"/>
       <f:facet name="editor">
         <pe:pageEditorPanel id="pep1"/>
       </f:facet>
   </pe:pageCustomizable>
   ```

   The design view should look like Figure 22–6.

Figure 22–6 Design View: Customization Allowed



Id: panelCustomizable1
Rendered: <default> (true)
Horizontal Alignment: <default> (start)
Vertical Alignment: <default> (top)
Layout: scroll
Customization allowed: true
Customization allowed by: admin

4. Add a `Show Detail Frame` component within the `Panel Customizable` and include another `Panel Customizable` component as a child of the `Show Detail Frame` component.

> **Note:** This step is for illustration purpose only as it is easier to explain runtime behavior by showing multiple components. For detailed information on how to add Composer components, see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."

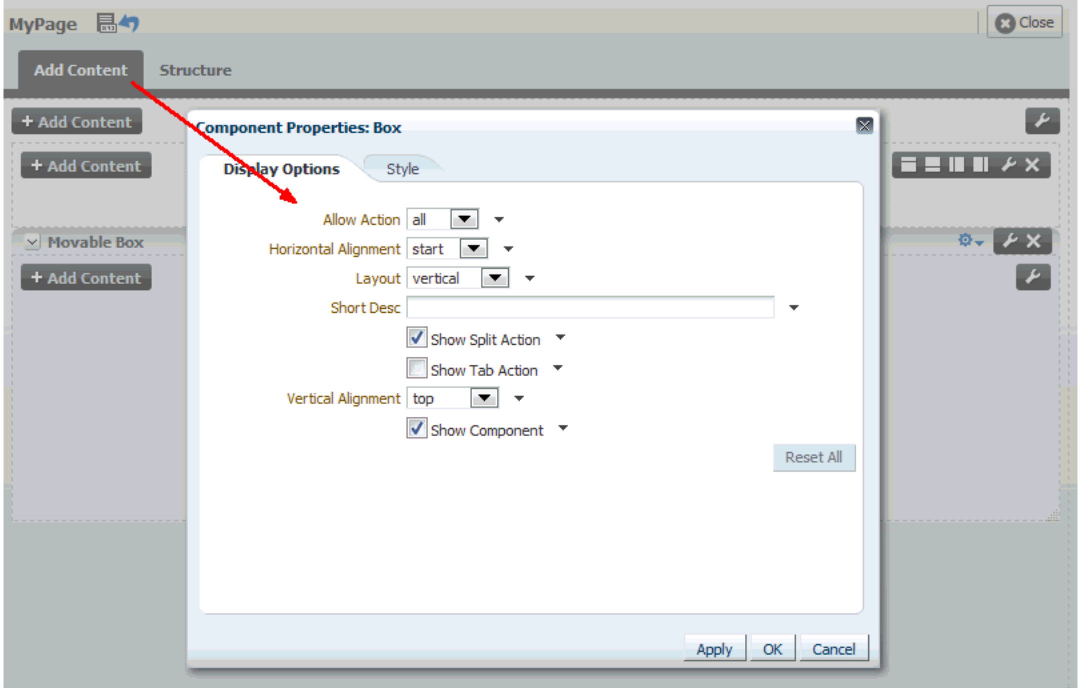
22.2.7 What Happens at Runtime

What happens at runtime is influenced by which user is logged on. To see the difference, log in as one user and then the other. For example:

In the Application Navigator, right-click the JSPX page and select **Run**.

Log in to the page as a user with `admin` role, and switch to Edit mode. The **Add Content** button and the **Edit** icon are displayed on the outer and inner `Panel Customizable` components. As a user with `admin` role, you can access the properties of the outer `Panel Customizable`, as shown in Figure 22–7. That is, users with `admin` role can edit this component.

Figure 22–7 Edit Mode for admin



Component Properties: Box

Allow Action: all

Horizontal Alignment: start

Layout: vertical

Short Desc:

☑ Show Split Action

☐ Show Tab Action

Vertical Alignment: top

☑ Show Component

Log in to the page as a user with `customer` role, and switch to Edit mode. The **Add Content** button and the **Edit** icon are not available on the outer `Panel Customizable`. That is, this component is not editable for users with `customer` role. In Structure view, the Add Content and Edit icons are grayed out for the component.

22.3 Applying Tag-Level Security Using the customizationAllowed Attribute

By default, a `Page Customizable` component enables application customization on all components under it. You may want to change this to restrict customization on some components. The `Page Customizable` component does not enable customization on components that are on a nested page or fragment. You must enable customization on such components manually. To address such requirements, MDS provides the `customizationAllowed` and `customizationAllowedBy` attributes. These attributes can be used to enable or restrict customization on specific component instances on a page.

The `customizationAllowed` attribute controls whether the component can be customized at runtime. If you set this attribute to `false`, then the component cannot be customized at runtime. That is, in the Component Properties dialog the properties are grayed out and do not allow editing.

The `customizationAllowedBy` attribute specifies the roles for which customization is enabled.

This section provides examples of enabling and restricting customization on a component. It contains the following subsections:

- Section 22.3.1, "How to Enable Application Customization on an Image Component"
- Section 22.3.2, "How to Restrict Customization on an Image Component"

For more information, see the "Extended Metadata Properties" section in *Fusion Developer's Guide for Oracle Application Development Framework*.

22.3.1 How to Enable Application Customization on an Image Component

To enable application customization on an Image component:

1. In the `MyPage.jspx` page that you created in Section 18.2, "Designing Editable Pages Using Composer Components: Example," add an ADF Faces Image component, for example, `brandingImage.gif`, inside the `Panel Customizable` called `panelCustomizable1`.

   Application customization is enabled automatically on the `Image` component since it is nested inside a `Page Customizable` component.

2. Run `MyPage.jspx`.
3. Switch to Edit mode of the page.
4. Select **Structure** to switch to Structure view of the page.
5. Select the image in the component hierarchy in the Structure View panel and click the **Show the properties of** icon.

   The Component Properties dialog displays the image properties. You can edit any available property in this dialog. Edit a property and click **OK**. The property's editable value demonstrates that application customization is enabled on the component.

22.3.2 How to Restrict Customization on an Image Component

You can restrict customization of an image on the page by setting the `customizationAllowed` attribute to `false` on the image component.

To restrict customization on the Image component:

1. In Oracle JDeveloper, select the `Image` component that you added in the previous section, and in the Property Inspector set the value for **customizationAllowed** to `false`.
2. Run `MyPage.jspx`.
3. Switch to page Edit mode.
4. Select **Structure** to switch to Structure view of the page.
5. Select the image in the component hierarchy in the Structure view panel, and click the **Show the properties of** icon.

   In the Component Properties dialog, the properties are grayed out and cannot be edited.

22.4 Applying Attribute-Level Security

You can choose whether specific component attributes can be customized at runtime. Additionally, you can specify whether the changes made to an attribute must be persisted to a persistence store, such as MDS. You can apply attribute-level security in the following ways:

- By defining property filters
- By persisting changes at the component level

For information about applying property filters, see Section 19.8.1, "How to Define Property Filters."

This section describes how to persist changes at the component level. It contains the following subsections:

- Section 22.4.1, "How to Define Change Persistence at the Component Level"
- Section 22.4.2, "What Happens at Runtime"

22.4.1 How to Define Change Persistence at the Component Level

If your application is configured to use `FilteredPersistenceChangeManager` to persist changes, you can use the `persist-changes` attribute in the `adf-config.xml` file to specify whether changes to a specific attribute must be persisted.

> **Note:** For information about change persistence, see Section 20.11, "Configuring the Persistence Change Manager."
>
> For information about the Composer-specific configurations you can make in `adf-config.xml`, see Section B.2.2, "adf-config.xml."

Example 22–1 shows a sample `adf-config.xml` file with `persist-changes` attributes defined for some attributes.

Example 22–1 Using the persist-changes Attribute in the adf-config.xml File

```
<adf-config xmlns="http://xmlns.oracle.com/adf/config">
  <adf-faces-config xmlns="http://xmlns.oracle.com/adf/faces/config">
    <persistent-change-manager>
      <persistent-change-manager-class>
       oracle.adf.view.rich.change.MDSDocumentChangeManager
      </persistent-change-manager-class>
    </persistent-change-manager>
    <taglib-config>
      <taglib uri="http://xmlns.oracle.com/adf/pageeditor">
        <tag name="imageLink">
          <attribute name="destination">
            <persist-changes>true</persist-changes>
          </attribute>
        </tag>
        <tag name="customAction">
          <attribute name="text">
            <persist-changes>true</persist-changes>
          </attribute>
          <attribute name="icon">
            <persist-changes>true</persist-changes>
          </attribute>
        </tag>
      </taglib>
    </taglib-config>
  </adf-faces-config>
</adf-config>
```

22.4.2 What Happens at Runtime

If you include the `persist-changes` attribute and set the value to `true`, then a change made to the component attribute is persisted in any instance of that component.

Note: The persist-changes attribute applies only to implicit customization made in View mode.

22.5 Applying Action-Level Restrictions on Panel Customizable and Show Detail Component Actions

The ability of a user to perform actions on Panel Customizable and Show Detail Frame components is inherited from page security. Inheritance is based on the value of the application-wide switch, enableSecurity, in the adf-config.xml file. If you select the WebCenter Portal Framework Application template when you create your application, then the adf-config.xml file is located in the ADF META-INF folder under Descriptors in the Application Resources panel.

This section describes how to apply action-level restrictions on Panel Customizable and Show Detail Frame component actions. It contains the following subsections:

- Section 22.5.1, "How to Add an enableSecurity Section to adf-config.xml"
- Section 22.5.2, "Defining Security at the Actions Category Level"
- Section 22.5.3, "Defining Security at the Actions Level"

22.5.1 How to Add an enableSecurity Section to adf-config.xml

The enableSecurity element is not available by default in adf-config.xml. To override or extend the page-level security inheritance for Panel Customizable and Show Detail Frame components, you must add the customizableComponentsSecurity section in the adf-config.xml file, as shown in Example 22–2, and set the enableSecurity element in that section to true.

Example 22–2 enableSecurity Element in the Customizable Components Security Section in adf-config.xml

```
<cust:customizableComponentsSecurity
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
  <cust:enableSecurity value="true"/>
    <cust:actionsCategory>
       .........................................
</cust:customizableComponentsSecurity>
```

Restrictions on actions can be implemented at the following levels:

- **Page level**: You can define security for Oracle WebCenter Portal Customizable Components so that page-level privileges are inherited by these components. This is the default behavior.

  By default, customizable components inherit allowable actions from the defined page-level permissions, such as edit, personalize, or customize. That is, a user who has edit, personalize, or customize privileges on a page can perform View mode user customizations on that page. The enableSecurity element enables you to override the security inheritance behavior. It can take either of the following values:

  – true: If set to true (the default when not specified), then the ability of a user to modify a component is first determined from the page permissions and then adjusted according to the current set of actions defined for that type of permission. For example, if a user has customize permission, then the actions that constitute the customize category (move, customize, and so on) are available to the user, but they are overridden by the actions that are defined in the adf-config.xml file.

- false: If set to false, then all actions are available to users. A user's page permissions and actions configured in adf-config.xml are ignored.

- **Actions category level**: You can define security on all actions for Panel Customizable and Show Detail Frame components.

  You can add an actionsCategory element in the adf-config.xml file to define security on multiple actions simultaneously. Depending on the actionCategory attributes that you enable, appropriate privileges are provided on the components.

- **Actions level**: You can define security on individual actions for Panel Customizable and Show Detail Frame components.

  You can use the actions element in the adf-config.xml file to enable or disable individual actions. Depending on the actions attributes that you enable, appropriate privileges are provided on the components.

Notes:

- If you set enableSecurity to true in the adf-config.xml file and define restrictions on actions or action categories, then for these restrictions to take effect you must grant Personalize or Customize privilege on the page, in addition to View privilege.

  If you are not using the enableSecurity element or it is set to false, then page-level permissions are honored. In such a case, having View privilege on the page is sufficient as all customizable components actions are rendered by default on the page.

- Privileges can be inherited from the parent only. Inheritance from a component in any other position in the hierarchy is not supported.

- Restrictions defined at the actions category level or actions level are applicable to all instances of the Panel Customizable or Show Detail Frame component across the application. You cannot apply restrictions on a single instance of the component.

You can define security for component actions at the application level if enableSecurity is set to true in the adf-config.xml file. A value of true implies that permission checks are made in addition to the actionsCategory and actions values specified in the adf-config.xml.

22.5.2 Defining Security at the Actions Category Level

You can add an actionsCategory element in the customizable components actions security section in the adf-config.xml file to define security on multiple Panel Customizable and Show Detail Frame components actions. Depending on the actionsCategory attributes that you enable, appropriate privileges are provided on the components.

The actions and actionsCategory elements in the adf-config.xml file have certain default mappings. Table 22–1 describes the different actionsCategory attributes and the actions they support by default.

For information about the Composer-specific configurations you can make in `adf-config.xml`, see Section B.2.2, "adf-config.xml."

Table 22–1 Actions Categories and Actions Mapping

actionsCategory	Actions Supported
`personalizeActionsCategory`	showMoveAction showRemoveAction showMinimizeAction showResizer allowAction
`customizeActionsCategory`	showEditAction showAddContentAction showSplitAction

The behavior of components based on a combination of `personalizeActionsCategory` and `customizeActionsCategory` settings is as follows:

- If both `personalizeActionsCategory` and `customizeActionsCategory` are set to `false`, then users cannot move, expand, collapse, delete, resize, or edit `Show Detail Frame` components and they also cannot edit or delete `Panel Customizable` components or add content inside them.
- If `personalizeActionsCategory` is set to `true` and `customizeActionsCategory` is set to `false`, then users can move, expand, collapse, delete, or resize `Show Detail Frame` components but not edit them. Additionally, they can delete `Panel Customizable` components and rearrange components inside them but not edit them or add components to the page.

> **Note:** The `allowAction` setting, along with other actions settings, controls the ability to add content to the page and move or rearrange content on the page. For more information, see Section 22.5.3, "Defining Security at the Actions Level."

- If both `personalizeActionsCategory` and `customizeActionsCategory` are set to `true`, then users can move, expand, collapse, delete, resize, and edit `Show Detail Frame` components and they can also edit and delete `Panel Customizable` components and add content inside them. Users can add content from the resource catalog using the **Add Content** button, add Box components using the Add Box icons, and move components from other `Panel Customizable` components by dragging and dropping them.

> **Note:** It is not recommended that you set `personalizeActionsCategory` to `false` and `customizeActionsCategory` to `true` as privileges cascade from Grant to Customize to Personalize to View. That is, when you enable Customization, the user must already have Personalize privilege on the page.

Example 22–3 shows the `actionsCategory` entry that you can add to the customizable components actions security section in the `adf-config.xml` file.

Example 22–3   actionsCategory Element in the Customizable Components Security Section

```
<cust:customizableComponentsSecurity
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
  <cust:enableSecurity value="true"/>

  <cust:actionsCategory>
    <cust:actionCategory name="personalizeActionsCategory" value="true"/>
    <cust:actionCategory name="customizeActionsCategory" value="false"/>
  </cust:actionsCategory>

  <cust:actions>
  ..........................................
  </cust:actions>

</cust:customizableComponentsSecurity>
```

You can also use EL for these element values, as shown in Example 22–4.

Example 22–4   EL Used in Customizable Components an actionCategory Entry

```
<cust:actionsCategory>
  <cust:actionCategory name="personalizeActionsCategory"
value="#{appBusinessRules.InsideCorpNetwork}"/>
</cust:actionsCategory>
```

For reference, the managed bean, `appBusinessRules`, is defined as shown in Example 74–7 in Section 74.15, "Overriding Inherited Security on Portlets and Customizable Components."

22.5.3 Defining Security at the Actions Level

You can use the `actions` element in the customizable components actions security section of the `adf-config.xml` file to show or hide individual `Show Detail Frame` actions. Depending on the `actions` attributes that you enable, appropriate privileges are provided on the `Show Detail Frame` components.

For information about Composer-specific configurations you can make in `adf-config.xml`, see Section B.2.2, "adf-config.xml."

The `allowAction` setting, along with other actions settings, controls the ability to add content to the page and move or rearrange page content.

In Composer, users can add and arrange content in the following ways:

- Add `Box` components using the **Add Box** icons.
- Add content inside a `Box` component, from the resource catalog, using the **Add Content** button.
- Move `Show Detail Frame` components within a `Panel Customizable` component by using the Move Up and Move Down actions on the `Show Detail Frame` component's Actions menu.
- Drag and drop `Show Detail Frame` components across `Panel Customizable` components.

Table 22–2 explains the ability to add content depending on the `allowAction` and `showAddContentAction` settings.

Table 22–2 Actions Settings for Adding Content to a Page

allowAction Setting	showAddContentAction Setting	Add Content Button Displayed?
`true`	`true`	Yes
`true`	`false`	No
`false`	true	No
`false`	`false`	No

Table 22–3 explains the ability to add content using the Add Box icons depending on the `allowAction` and `showSplitAction` settings.

Table 22–3 Actions Settings for Rearranging Content on a Page

allowAction Setting	showSplitAction Setting	Add Box Icons Displayed?
`true`	`true`	Yes
`true`	`false`	No
`false`	`true`	No
`false`	`false`	No

Table 22–4 explains the ability to move content on the page depending on the `allowAction` and `showMoveAction` settings.

Table 22–4 Actions Settings for Moving Content on a Page

allowAction Setting	showMoveAction Setting	Move Content on the Page?
`true`	`true`	Yes
`true`	`false`	No
`false`	`true`	No
`false`	`false`	No

Note:

- If you define security both at the actions category level and actions level and the values for some actions contradict, then a value of `false` takes precedence over `true`. For example, if you set `personalizeActionsCategory` to `true` and `allowAction` to `false`, then users cannot add content to their application pages at runtime. Similarly, if you set `personalizeActionsCategory` to `false` but set `allowAction` to `true`, then too users cannot add content to their application pages at runtime.
- Restrictions using actions settings are applicable only in Add Content or Design view of a page. That is, if you set an action, such as `showEditAction` or `showRemoveAction`, on `Show Detail Frame` components to `false`, then users cannot edit or delete such components in Add Content or Design view of the page. However, users can still select such components in Structure view and edit or delete them.

Example 22–5 shows the `actions` entry that you can add to the customizable components actions section of the `adf-config.xml` file. You can use EL for element values.

Example 22–5 action Elements in the Customizable Components Security Section

```
<cust:customizableComponentsSecurity
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
  <cust:enableSecurity value="true"/>

  <cust:actionsCategory>
    .........................................
  </cust:actionsCategory>

  <cust:actions>
    <cust:action name="showMinimizeAction" value="true"/>
    <cust:action name="showMoveAction" value="false"/>
  </cust:actions>

</cust:customizableComponentsSecurity>
```

22.6 Implementing Task Flow Security

Since editing task flow permissions has a far reaching impact on the task flow editing experience, the Edit permission on task flows is disabled by default. In fact, no permissions are provisioned on task flows by default. To ensure that only users with appropriate permissions can edit a task flow, you can implement task flow security by performing the following two tasks in the Composer context:

- Explicitly grant Edit, Customize, or Grant permission on the task flow.
- Enable Composer to check for a task flow's permissions and allow only users with appropriate permissions to edit or customize the task flow.

This section explains how to apply restrictions and enable permission checks on task flows. It contains the following subsections:

- Section 22.6.1, "Granting Permissions on Task Flows"
- Section 22.6.2, "Enabling Task Flow Permission Check"

22.6.1 Granting Permissions on Task Flows

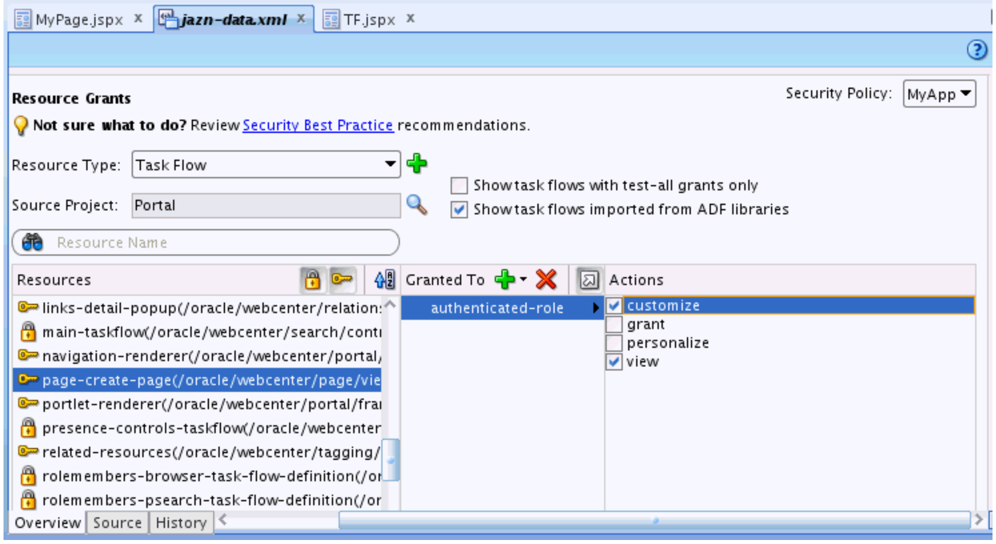
You can define the access policy for a task flow by creating permission grants in the Resource Grants page of the `jazn-data.xml` file overview editor. The grants you create will appear as metadata in the policy store section of the file. These grants, or permissions, control the ability to zoom into and edit the task flow in Composer.

To grant or revoke permissions on a task flow in the `jazn-data.xml` file:

1. From the Application menu, select **Secure**, and then **Resource Grants**.
2. In the `jazn-data.xml` file, from **Resource Type**, select **Task Flow**.
3. From Resources list, select the task flow and click the **Add Grantee** icon in the Granted To column, then select the required role category, such as **Add Application Role**.
4. Select the roles to which you want to grant permissions or create a new role by clicking the **Add** icon.
5. Click **OK**.

6. Select one or more permissions in the Actions column (Figure 22–8).

Figure 22–8 Task Flow Security Region in the jazn-data.xml File



Resource Grants

Not sure what to do? Review Security Best Practice recommendations.

Security Policy: MyApp

Resource Type: Task Flow

Source Project: Portal

☐ Show task flows with test-all grants only

☑ Show task flows imported from ADF libraries

Resource Name

Resources

- links-detail-popup(/oracle/webcenter/relation:
- main-taskflow(/oracle/webcenter/search/conti
- navigation-renderer(/oracle/webcenter/portal/
- page-create-page(/oracle/webcenter/page/vie
- portlet-renderer(/oracle/webcenter/portal/frai
- presence-controls-taskflow(/oracle/webcenter
- related-resources(/oracle/webcenter/tagging/
- rolemembers-browser-task-flow-definition(/or
- rolemembers-psearch-task-flow-definition(/or

Granted To

- authenticated-role

Actions

☑ customize
☐ grant
☐ personalize
☑ view

7. Save the jazn-data.xml file.

Note: The permission grant would appear as follows in the source view of the file if `customize` and `view` permissions are granted:

```
<permissions>
  <permission>

<class>oracle.adf.controller.security.TaskFlowPermission</class>

<name>/WEB-INF/task-flow-definition.xml#task-flow-definition</name>
    <actions>customize,view</actions>
  </permission>
</permissions>
```

The `TaskFlowPermission` class defines task flow-specific actions that it maps to the task flow's operations.

For more information about Composer's behavior based on task flow permissions, see Section 16.8.1, "Page and Task Flow Security."

For more information about defining permission grants on task flows, see the "How to Define Security Policies for ADF Bounded Task Flows" section in *Fusion Developer's Guide for Oracle Application Development Framework*.

22.6.2 Enabling Task Flow Permission Check

When a user tries to edit a task flow, Composer does not check the task flow's permissions by default. To enhance task flow security, you must configure Composer to check for a task flow's permissions and allow only users with the required privileges to edit it. You can do so by setting the `check-permission` property on the `<pe:task-flow-security>` element in the application's `adf-config.xml` file, as shown in the following example:

```
<pe:page-editor-config>
  <pe:security-config>
    <pe:task-flow-security check-permission="true" />
  </pe:security-config>
</pe:page-editor-config>
```

For more information about `adf-config.xml` settings, see Section B.2.2, "adf-config.xml."

Note: In earlier releases, you could enable permission checks on task flows by running the server with the following JVM parameter:

`-Doracle.composer.enableTaskflowPermissionCheck=true`

However, this method is now deprecated. For backward compatibility, Composer checks for the `enableTaskflowPermissionCheck` flag first, and then the setting in the `adf-config.xml` file.

22.7 Overriding Composer's Default Security Policies

Composer performs the following security checks to enable customization:

- Regions on the page have been granted edit or customize privilege.
- Task flows have been granted edit or customize privilege.

Note: This is an optional security setting, which is not enabled by default.

- A component is not nested in an iterator.
- MDS customization restrictions have been applied on components and attributes.

Users can customize pages and task flows only if all the above criteria are met. By default, Composer uses `pagePolicy` to perform page-level security checks.

There may be situations where you want to perform different security checks; probably add a few application-level checks to what Composer already provides. You can do so by overriding Composer's default security policy with a custom policy. This section explains how to do this. It contains the following sections:

- Section 22.7.1, "How to Create a Custom Security Policy"
- Section 22.7.2, "How to Register a Custom Policy with Composer"
- Section 22.7.3, "What Happens at Runtime"

22.7.1 How to Create a Custom Security Policy

You can create custom policies by extending Composer's base security classes. Depending on whether you want to check pages or task flows, you can extend the following base security classes:

- Page Policy: `oracle.adf.view.page.editor.security.BasePageSecurityPolicy`
- Task Flow Policy: `oracle.adf.view.page.editor.security.TaskflowPermissionPolicy`

To take you one step further, you can configure your policy in such a way that Composer's default checks are performed in case the custom checks are not applicable or do not provide the desired results. For this, you must extend the `DefaultPageSecurityPolicy` class and call the `super.isCustomizable()` method, as shown in Example 22–6.

Example 22–6 Custom Policy Extending DefaultPageSecurityPolicy

```
public class CustomPageSecurityPolicy extends DefaultPageSecurityPolicy
{
  . . .

  public boolean isCustomizable()
  {
    // Security checks that this custom page policy must perform should go here
    . . .
    // If we cannot determine the security policy, chain it to Composer's default 
implementation
    return super.isCustomizable();
  }
}
```

22.7.2 How to Register a Custom Policy with Composer

To configure a custom policy to override the Composer security policy, you must include the `<pe:security-config>` section in the application's `adf-config.xml` file and register the custom security policy.

To register a custom security policy:

1. Open the application's `adf-config.xml` file from the `ADF META-INF` folder under `Descriptors` in the Application Resources panel.
2. Add a `<pe:page-editor-config>` section if it does not already exist, and add the following code inside it:

```
<pe:security-config>
  <pe:security-policies>
    <pe:security-policy name="optional_unique_name" override="composer_
security_policy_name">
      <pe:policy-class>fully_qualified_custom_policy_class_
name</pe:policy-class>
    </pe:security-policy>
  </pe:security-policies>
</pe:security-config>
```

   where,

   `override` specifies the default policy to be overridden. Options are `pagePolicy` and `taskflowPolicy`.

   For information about task flow policies, see Section 22.6, "Implementing Task Flow Security."

   > **Note:** Out-of-the-box policies that are not mentioned here will continue to be checked by default.

   `<pe:policy-class>` specifies the name of the custom policy class.

3. Save the `adf-config.xml` file.

22.7.3 What Happens at Runtime

Composer performs the security checks defined in your custom policy and enables customization on components accordingly.

22.8 Troubleshooting Problems with Composer Components Security

This section provides information to assist you in troubleshooting security-related problems you may encounter while using Composer components.

For information about configuring logging, see "Configuring ADF Logging for Composer".

Problem

The `Show Detail Frame` and `Panel Customizable` do not show the **Edit** icon, or the `Panel Customizable` does not show the **Add Content** button. Also, you are not able to move the `Show Detail Frame` out of a `Panel Customizable` component or drop it into another `Panel Customizable` component.

Solution

Ensure that the `Panel Customizable` is not restricted by using MDS and the component actions are not secured by using entries in `adf-config.xml`.

Problem

You are not able to grant permissions on task flows in the `jazn-data.xml` file.

Solution

Ensure that you run the server with the Java startup parameter, as mentioned in Section 22.6, "Implementing Task Flow Security."

23

Customizing WebCenter Portal Tools and Services Task Flows

This chapter describes how to extend or alter the look and feel or functionality of Oracle WebCenter Portal tools and services task flows using the Oracle JDeveloper Customization Developer role.

This chapter includes the following topics:

23.1 Introduction to Task Flow Customization

When you apply task flow customizations to WebCenter Portal or a deployed Portal Framework application, the customizations apply to all instances of that task flow in the application. You do not need to deploy customizations for individual task flow instances.

In JDeveloper, task flow customizations are deployed at application-level, so any customizations that you make will apply to all portals. To customize a task flow for a specific portal only, you must use WebCenter Portal's administration tools for task flow customization as explained in the "Customizing Task Flows for a Portal" chapter in *Using Oracle WebCenter Portal*. If your customization involves minor modifications like adding text, hiding existing content or rearranging existing content, you can also use runtime administration tools. If your customization requires complex layout changes to be applied to all instances of a portal, use the development-based customization approach explained in this chapter.

Note: While you can perform view-level customizations to Portal Framework applications, such as task flow customization, ADF model and Controller customizations are not supported in this release. To learn more about the different customization types, see the *Java EE Developer's Guide for Oracle Application Development Framework*.

23.2 Preparing for Task Flow Customization

This section includes the following topics:

- Section 23.2.1, "WebCenter Portal: Install the WebCenter Portal Customization JDeveloper Extension"
- Section 23.2.2, "WebCenter Portal: Create a Task Flow Customization Application"
- Section 23.2.3, "WebCenter Portal Framework Applications: Enable Customization"

23.2.1 WebCenter Portal: Install the WebCenter Portal Customization JDeveloper Extension

To customize task flows for WebCenter Portal, you must first install the WebCenter Portal Customization JDeveloper extension.

The WebCenter Portal Customization JDeveloper extension includes the WebCenter Portal Task Flow Customization Application template and some Portal Server specific task flows that are not included in the Oracle WebCenter Portal Framework and Services Design Time JDeveloper extension bundle.

Note: If you have not already installed the latest version of the Oracle WebCenter Portal Framework and Services Design Time extension, you must install it before the customization extension.

To install the WebCenter Portal Customization JDeveloper extension:

1. In JDeveloper, choose **Help** then **Check for Updates**.
2. In the Check for Updates wizard, if the Welcome page displays, click **Next**.
3. On the Source page, from the **Search Update Centers** list, select **Oracle Fusion Middleware Products**, and click **Next**.
4. On the Updates page, select the **Oracle WebCenter Portal Customization Framework Design Time** extension and click **Finish**.
5. Exit and restart JDeveloper.

23.2.2 WebCenter Portal: Create a Task Flow Customization Application

If you are customizing task flows for WebCenter Portal, you must also create a WebCenter Portal Task Flow Customization application.

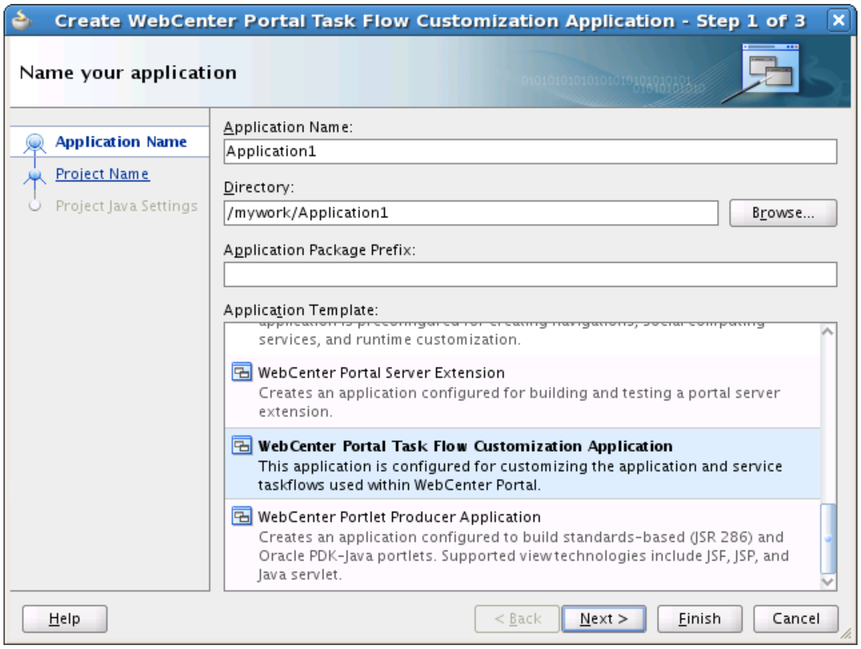
To create a task flow customization application:

1. Access the Create WebCenter Portal Task Flow Customization Application wizard in any of the following ways:

- From the **File** menu, choose **New**. In the New Gallery dialog, expand **General**, select **Applications** then **WebCenter Portal Task Flow Customization Application**, and then click **OK**.
- From the **Application** menu, choose **New**. In the Create Generic Application wizard, in the **Application Template** list select **WebCenter Portal Task Flow Customization Application**.
- If you have an existing application open, in the Application Navigator, click the application name and choose **New Application**. In the Create Generic Application wizard, in the **Application Template** list select **WebCenter Portal Task Flow Customization Application**.
- If you have an existing application open, then in the Application Navigator, right-click the application name and choose **New**. In the New Gallery dialog, expand **General**, select **Applications** then **WebCenter Portal Task Flow Customization Application**, and then click **OK**.

2. In the Name your application page of the application creation wizard (Figure 23–1), in the **Application Name** field, enter a name for the application.

Figure 23–1 The Create WebCenter Portal Task Flow Customization Application Wizard



Create WebCenter Portal Task Flow Customization Application - Step 1 of 3

Name your application

Application Name: Application1

Directory: /mywork/Application1

Application Package Prefix:

Application Template:

services, and runtime customization.

WebCenter Portal Server Extension
Creates an application configured for building and testing a portal server extension.

WebCenter Portal Task Flow Customization Application
This application is configured for customizing the application and service taskflows used within WebCenter Portal.

WebCenter Portlet Producer Application
Creates an application configured to build standards-based (JSR 286) and Oracle PDK-Java portlets. Supported view technologies include JSF, JSP, and Java servlet.

3. In the **Directory** field, accept the default path or enter a path to the directory where the application should be stored.

   For example:

   ```
   C:\JDeveloper\mywork\myCustomizationApplication
   ```

   Optionally, click the **Browse** button to navigate to the desired directory.

4. If required, in the **Application Package Prefix** field, enter a prefix to use for packages to be created within the application.
5. Click **Finish** to create the task flow customization application with default project configurations.

23.2.3 WebCenter Portal Framework Applications: Enable Customization

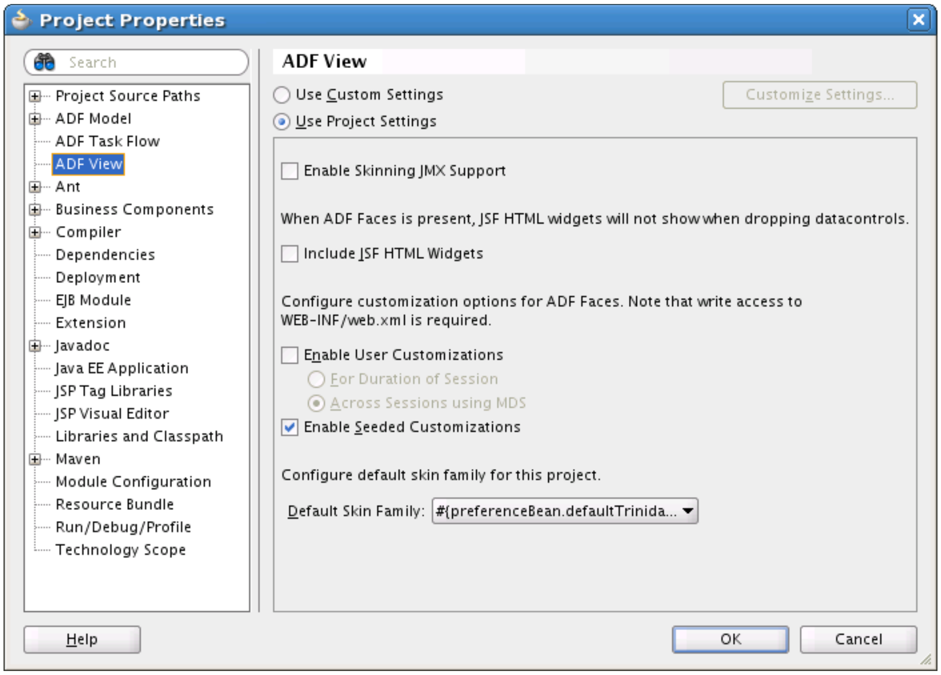
To enable task flow customization in a Portal Framework application, first ensure that you have created your application using the WebCenter Portal Framework Application template (see Section 6.1, "Creating a New WebCenter Portal Framework Application"). Then follow the steps below.

To enable customization in a Portal Framework application:

1. In the Application Navigator, right-click the **Portal** project, and choose **Project Properties**.

2. In the Project Properties dialog, select **ADF View**, then select the **Enable Seeded Customizations** check box (Figure 23–2).

Figure 23–2 Enable Seeded Customizations Option



ADF View

○ Use Custom Settings

● Use Project Settings

□ Enable Skinning JMX Support

When ADF Faces is present, JSF HTML widgets will not show when dropping datacontrols.

□ Include JSF HTML Widgets

Configure customization options for ADF Faces. Note that write access to WEB-INF/web.xml is required.

□ Enable User Customizations

○ For Duration of Session

● Across Sessions using MDS

☑ Enable Seeded Customizations

Configure default skin family for this project.

Default Skin Family: #{preferenceBean.defaultTrinida...

3. Click **OK** and save your files.

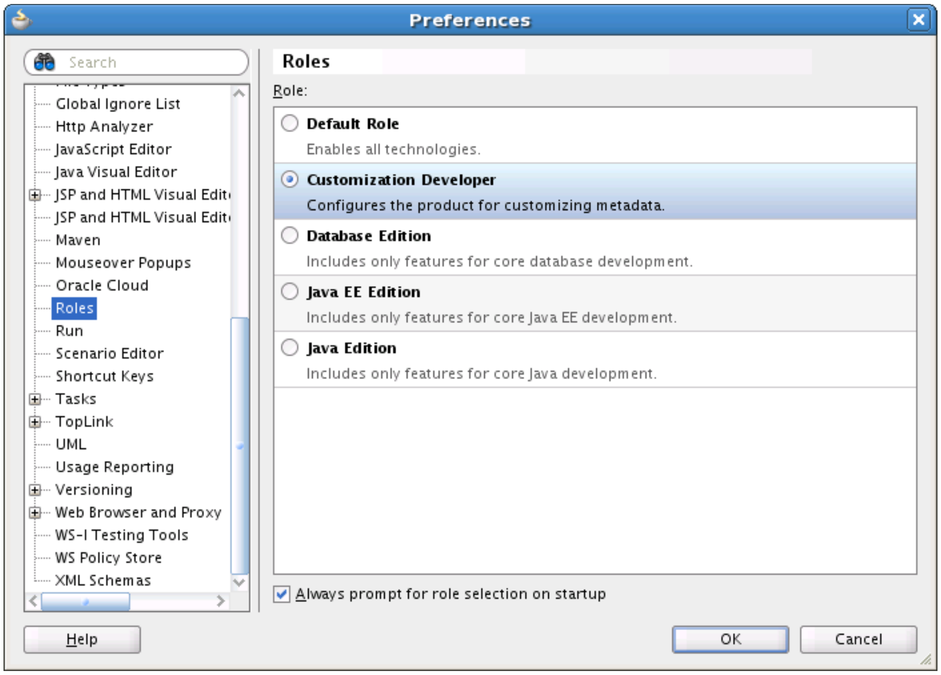
23.3 Configuring the JDeveloper Customization Developer Role

After you have created your customization application, or enabled customization for your application as described in Section 23.2, "Preparing for Task Flow Customization," you must configure the customization layer values to use the JDeveloper Customization Developer role.

1. In JDeveloper, choose **Tools** and then **Preferences**.

2. In the Preferences dialog, select **Roles** and then select the **Customization Developer** option (Figure 23–3).

Figure 23–3 Customization Developer Option



Preferences

Search

- Global Ignore List
- Http Analyzer
- JavaScript Editor
- Java Visual Editor
- JSP and HTML Visual Edit
- JSP and HTML Visual Edit
- Maven
- Mouseover Popups
- Oracle Cloud
- Roles
- Run
- Scenario Editor
- Shortcut Keys
- Tasks
- TopLink
- UML
- Usage Reporting
- Versioning
- Web Browser and Proxy
- WS-I Testing Tools
- WS Policy Store
- XML Schemas

Roles

Role:

○ **Default Role**
Enables all technologies.

● **Customization Developer**
Configures the product for customizing metadata.

○ **Database Edition**
Includes only features for core database development.

○ **Java EE Edition**
Includes only features for core Java EE development.

○ **Java Edition**
Includes only features for core Java development.

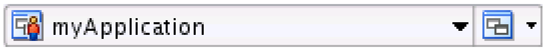
☑ Always prompt for role selection on startup

3. Click **OK**.

   JDeveloper prompts you to exit. Click **Yes** and then when you restart JDeveloper it will be using the Customization Developer role.

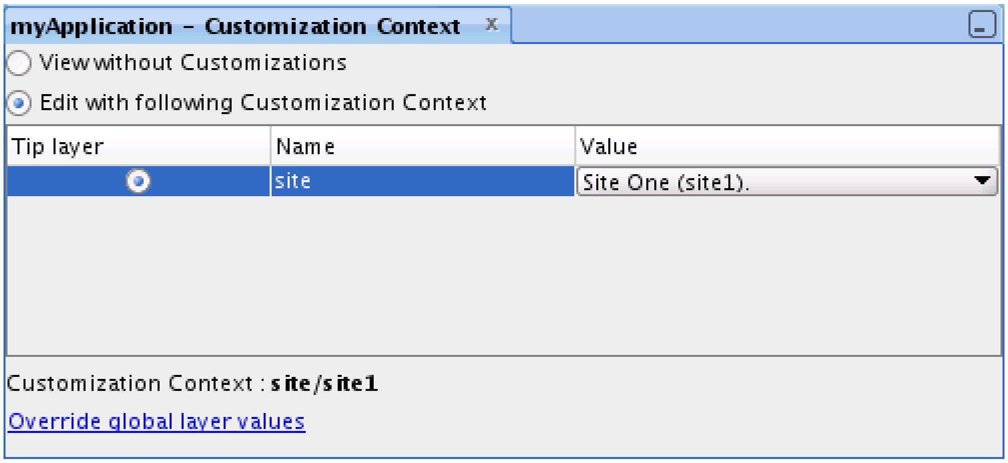
   When started using the Customization Developer role, JDeveloper displays an icon that includes a small figure next to your application name in the Application Navigator (Figure 23–4).

Figure 23–4 Icon Indicating Customization Developer Role



You will also see a Customization Context window (Figure 23–5).

Figure 23–5 Customization Context Window



myApplication – Customization Context

○ View without Customizations

● Edit with following Customization Context

Tip layer	Name	Value
●	site	Site One (site1).

Customization Context : **site/site1**

4. For Portal Framework applications, in the Customization Context window, click **Override global layer values**.

5. In the Confirm Override dialog, click **Yes**.

6. In the `CustomizationLayerValues.xml` file, enter the configuration for your application's customization class. For applications using the default ADF site customization class, use the following code:

```
<cust-layers xmlns="http://xmlns.oracle.com/mds/dt">
  <cust-layer name="site" id-prefix="s">
    <cust-layer-value value="site" display-name="Site" id-prefix="s"/>
  </cust-layer>
</cust-layers>
```

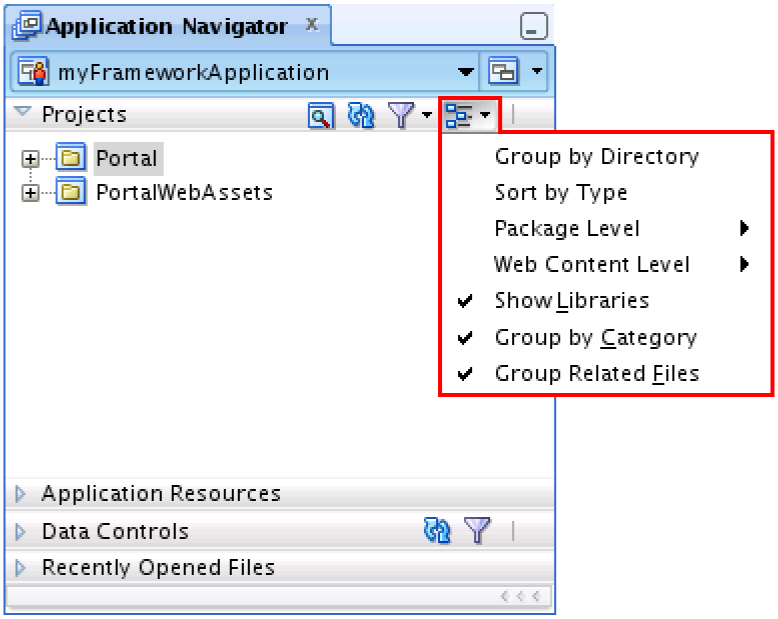
7. Save your files.

   The layer value in the Customization Context window is now set to the value that you defined in `CustomizationLayerValues.xml`. This indicates that you have successfully configured your application to enable customization of Oracle WebCenter Portal tools and services task flows

8. In the Application Navigator, ensure that **Show Libraries** is enabled in the Navigator Display Options drop-down menu (Figure 23–6).

   Tip: The **Navigator Display Options** icon is on the far right of the Projects toolbar.

Figure 23–6 Navigator Display Options - Show Libraries



23.4 Customizing Oracle WebCenter Portal Tools and Services Task Flows

JDeveloper's Customization Developer role is a powerful mechanism that allows you to customize the ADF Library without changing the code in the base library JAR. Since both Oracle WebCenter Portal and Oracle ADF leverage MDS, you can use the Customization Developer role to extend WebCenter Portal tools and services task flows. All WebCenter Portal tools and services task flows are packaged in the ADF

Library so task flow customization is possible in JDeveloper design time. For instructions on configuring the Customization Developer role, see Section 23.3, "Configuring the JDeveloper Customization Developer Role"

The use cases that can be achieved by task flow customization include:

- Change labels including column names for task flows.
- Change icons used in task flows, for example replacing the Edit and Refresh icons with new icons on the Discussions Forums task flow.
- Change the order of table columns in a task flow.
- Remove an entire region or component, such as the Search box from primary tab.
- Show additional attributes using Expression Language, for example customizing the People Picker task flow to show an additional user profile attribute.

After you have prepared your application for customization as described in the previous sections, open the application and make any necessary customizations.

- For examples of task flow customization, see Section 23.4.1, "Examples: Customizing Task Flows for WebCenter Portal" and Section 23.4.2, "Examples: Customizing Task Flows for WebCenter Portal Framework Applications."
- For a list of customizable task flows, see Section 23.7, "Catalog of Customizable Oracle WebCenter Portal Tools and Services Task Flows."
- After you have completed your customizations, deploy them as described in Section 23.5, "Applying Task Flow Customizations to WebCenter Portal or Deployed WebCenter Portal Applications."

23.4.1 Examples: Customizing Task Flows for WebCenter Portal

To customize task flows for WebCenter Portal, open the customization application you created in Section 23.2.2, "WebCenter Portal: Create a Task Flow Customization Application" and make your customizations.

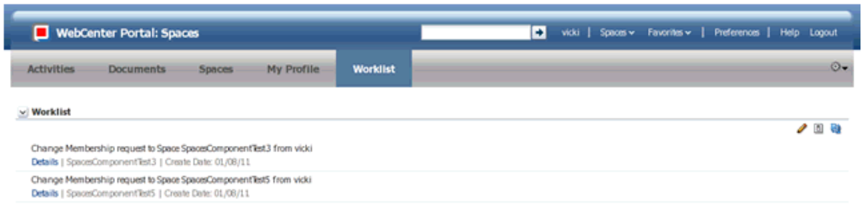
This section provides examples that explain two common customizations. It includes the following topics:

- Section 23.4.1.1, "Example: Customizing the Worklist Task Flow"
- Section 23.4.1.2, "Example: Customizing the Discussion Forums Task Flow"
- Section 23.4.1.3, "Example: Customizing the Document Explorer Task Flow"

23.4.1.1 Example: Customizing the Worklist Task Flow

This example shows how to customize the Worklist task flow by replacing the two-row entry for each worklist item with a single row that provides a link to the worklist item details with a popup that displays the details that were previously shown on the second row. Figure 23–7 shows a sample Worklist with the default two-row entry configuration.

Figure 23–7 Worklist - Before Customization



Worklist

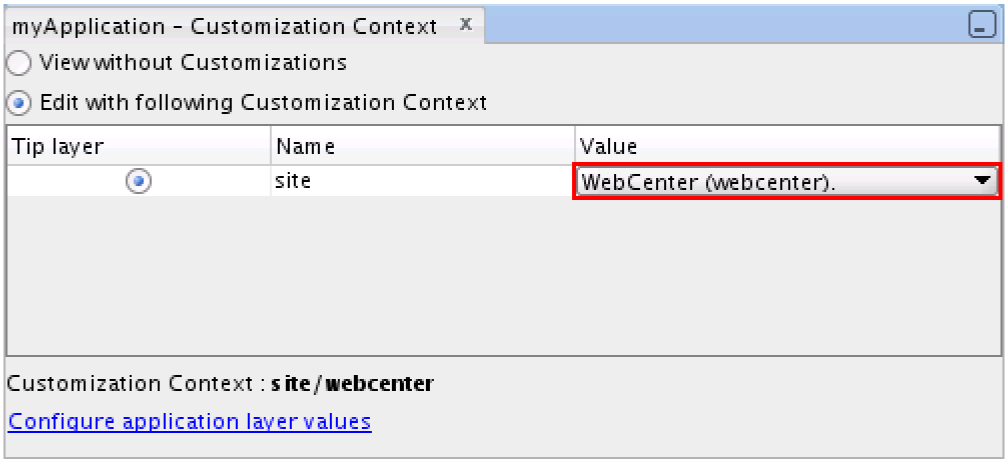
Change Membership request to Space SpacesComponentTest3 from vicki
Details | SpacesComponentTest3 | Create Date: 01/08/11

Change Membership request to Space SpacesComponentTest5 from vicki
Details | SpacesComponentTest5 | Create Date: 01/08/11

To customize the Worklist task flow:

1. If you are not already using the Customization Developer role, switch to this role as described at the beginning of Section 23.3, "Configuring the JDeveloper Customization Developer Role."
2. Open your WebCenter Portal Task Flow Customization Application.
3. In the Customization Context window, ensure that **Edit with following Customization Context** is selected and that **WebCenter (webcenter)** is selected as the customization layer (Figure 23–8).

Figure 23–8 Customization Context for WebCenter Portal



○ View without Customizations

● Edit with following Customization Context

Tip layer	Name	Value
●	site	WebCenter (webcenter)

Customization Context : **site/webcenter**

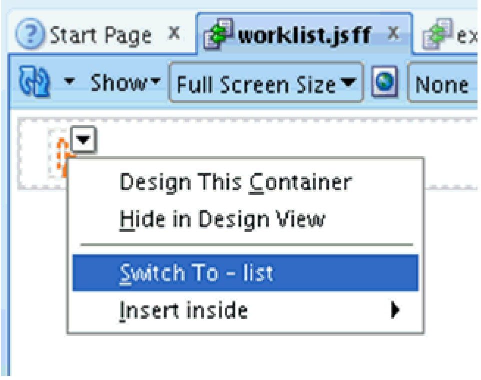
Configure application layer values

4. In the Application Navigator, expand the **ViewController** project to view all the libraries available in the project.

> **Tip:** If you cannot see the libraries, click the **Navigator Display Options** icon in the Projects bar, and choose **Show Libraries**.

5. Expand the **WebCenter Worklist Service View** library and then **worklist-service-ui-component-view.jar**, **oracle.webcenter.worklist**, **view**, **jsf**, and **fragments**.
6. Right-click **worklist.jsff** and choose **Open**.
7. Switch to the list view facet of the view. Click the empty facet on the page and choose **Switch To - list** (Figure 23–9).

Figure 23–9 Switch To List View

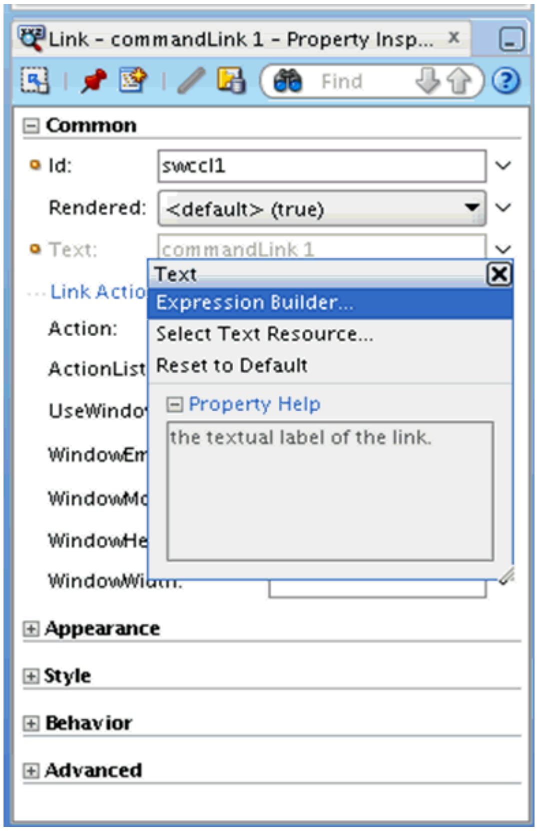


8. In the Structure window, expand the structure tree to locate the `af:outputText - #{row.title}` component. Right-click the component and choose **Insert Before af:outputText - #{row.title}** > **Link**.

9. In the Structure window, click on the newly created `af:commandLink` to open the Property Inspector dialog.

10. In the Property Inspector, click the down arrow next to the **Text** field and choose **Expression Builder** (Figure 23–10). Enter `#{row.title}` as the expression.

Figure 23–10 Property Inspector


Link - commandLink 1 - Property Insp...

Common

Id: swccl1

Rendered: <default> (true)

Text: commandLink 1

11. Expand the Appearance section of the Property Inspector. Click the down arrow next to the **ShortDesc** field and choose **Expression Builder**. Enter `#{row.dateInfoSummary}` as the expression.

12. In the **ActionListener** field, enter `openTaskDetailsApp()`
13. Find the newly added `commandLink` and delete the following components:
    `af:outputText - #{row.title}`
    `af:panelGroupLayout`
14. The `worklist.jsff.xml` file that is generated (under the ADF Library Customizations node in the Application Navigator) should include code similar to that shown in Example 23–1.

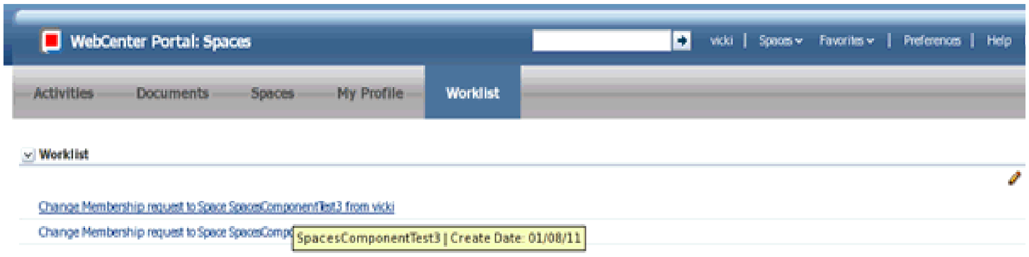
Example 23–1 Updated worklist.jsff file

```
<mds:customization version="11.1.1.61.15"
                   xmlns:mds="http://xmlns.oracle.com/mds">
  <mds:insert parent="pg13" position="first
              xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
    <af:commandLink xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
                  text="#{row.title}" id="swccl1"
                  shortDesc="#{row.dateInfoSummary}"
                  actionListener="#{backingBeanScope.wlbbean.openTaskDetailsApp}"/>
  </mds:insert>
  <mds:replace node="ot2"/>
  <mds:replace node="pg14"/>
</mds:customization>
```

15. Deploy the metadata deployment profile to WebCenter Portal as explained in Section 23.5, "Applying Task Flow Customizations to WebCenter Portal or Deployed WebCenter Portal Applications."

Figure 23–11 shows a sample Worklist after customization, with a single row and a popup.

Figure 23–11 Worklist - After Customization



Change Membership request to Space SpacesComponentTest3 from vicki

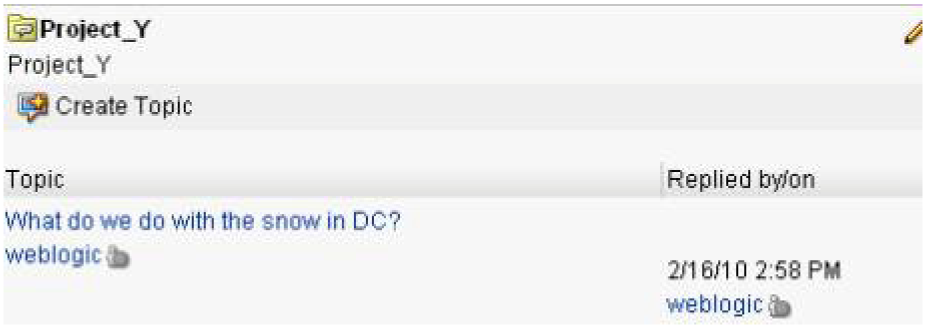
Change Membership request to Space SpacesCompo

SpacesComponentTest3 | Create Date: 01/08/11

23.4.1.2 Example: Customizing the Discussion Forums Task Flow

This example shows how you can customize the Discussion Forums task flow to display a profile image for the user who initiated the discussion. Figure 23–12 shows a sample Discussion Forum without the profile image.

Figure 23–12 Discussion Forum - Before Customization



Project_Y

Project_Y

Create Topic

Topic	Replied by/on
What do we do with the snow in DC? weblogic	2/16/10 2:58 PM weblogic

To customize the Discussion Forums task flow:

1. If you are not already using the Customization Developer role, switch to this role as described at the beginning of Section 23.3, "Configuring the JDeveloper Customization Developer Role."
2. Open your WebCenter Portal Task Flow Customization Application.
3. In the Application Navigator, expand the **ViewController** project to view all the libraries available in the project.

   > **Tip:** If you cannot see the libraries, click the **Navigator Display Options** icon in the Projects bar, and choose **Show Libraries**.

4. Expand the **WebCenter Discussion Services View** library and then **forum-view.jar**, **oracle.webcenter.collab**, **view**, **forum**, **jsf**, and **fragments**.
5. Right-click **ListTopics.jsff** and choose **Open**.
6. In the Structure window, search for the `<rtc:presence>` tag on the page. This tag renders the user name.
7. Right-click the `rtc.:presence` tag, then choose **Insert After** > **ADF Faces** and select **Panel Group Layout** from the dialog.
8. In the Structure window, right-click the new **Panel Group Layout** and choose **Insert** > **Image Component**.
9. In the Property Inspector for the new Image component, set the Source property to `#{webCenterProfile[row.createdBy].photoURI['SMALL']}`. This EL will return the location of the image that the current user has set as their profile photo.
10. Save your files and rebuild the project.

    The `ListTopics.jsff.xml` file that is generated will contain the following code:

Example 23–2 Updated ListTopics.jsff.xml File

```
<mds:customization version="11.1.1.60.46" xmlns:mds="http://xmlns.oracle.com/mds">
 <mds:insert after="p1" parent="frmltpgl11"
             xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
    <af:panelGroupLayout xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
                    id="swcpgl1">
      <af:image xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
        source="#{webCenterProfile[row.createdBy].photoURI['SMALL']}" id="swci1"/>
    </af:panelGroupLayout>
  </mds:insert>
</mds:customization>
```

11. Deploy the metadata deployment profile to the WebCenter Portal application as explained in Section 23.5, "Applying Task Flow Customizations to WebCenter Portal or Deployed WebCenter Portal Applications."

Figure 23–13 shows a sample Discussion Forum after customization, with a profile image.

Figure 23–13 Discussion Forum - After Customization (With User Profile Image)

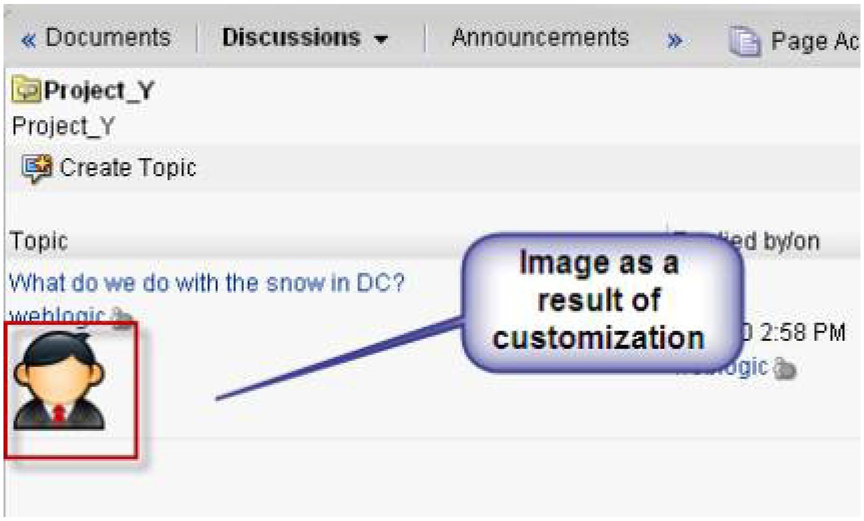
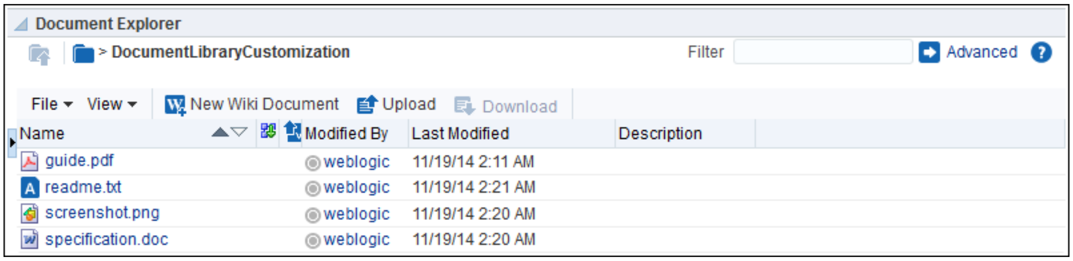


Image as a result of customization

23.4.1.3 Example: Customizing the Document Explorer Task Flow

The example that follows shows how to customize the Document Explorer task flow to display additional metadata for content items. Figure 23–14 shows the Document Explorer task flow, with its default set of fields.

Figure 23–14 Document Explorer Task Flow - Before Customization



Name	Modified By	Last Modified	Description
guide.pdf	weblogic	11/19/14 2:11 AM	
readme.txt	weblogic	11/19/14 2:21 AM	
screenshot.png	weblogic	11/19/14 2:20 AM	
specification.doc	weblogic	11/19/14 2:20 AM	

To customize the Document Explorer task flow:

1. Configure the Documents service to expose additional custom metadata fields:

   a. Log in to the WebLogic Server Administration Console.

   b. Navigate to **Environment > Servers > WC_Spaces**.

   c. Open the **Configuration > Server Start** tab and in the **Arguments** field enter the server startup argument `oracle.webcenter.doclib.attributenames` and specify the metadata field that you want to add to the Document Explorer (this is the name as defined in Oracle WebCenter Content). For example:

   ```
   -Doracle.webcenter.doclib.attributenames=xState
   ```

Tip: If you want to add more than one field, separate the names with commas.

d. Restart the `WC_Spaces` managed server.

2. In JDeveloper, if you are not already using the Customization Developer role, switch to this role as described at the beginning of Section 23.3, "Configuring the JDeveloper Customization Developer Role."

3. Open your WebCenter Portal Task Flow Customization Application.

4. In the Application Navigator, expand the **ViewController** project to view all the libraries available in the project.

   Tip: If you cannot see the libraries, click the **Navigator Display Options** icon in the Projects bar, and choose **Show Libraries**.

5. Expand the **WebCenter Portal Document Library Service View** library and then **oracle.webcenter.doclib**, **view**, **jsf**, **taskflows**, and **folderViewer**.

6. Right-click **folderViewer.jsff** and choose **Open**.

7. In the **Source** view, locate the table that lists the content items and add a column for the new attribute, for example:

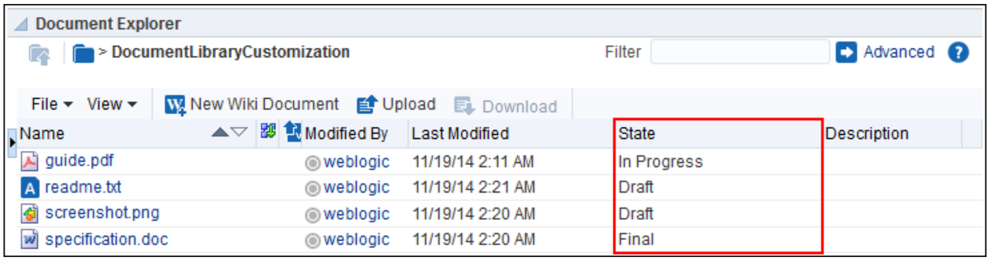
```
<af:column id="stateColumn"
           headerText="State"
           noWrap="false"
           width="250"
           align="start"
           sortable="true"
           sortProperty="attrs.xState">
  <af:outputText id="state" value="#{item.attrs.xState}" />
</af:column>
```

8. Save your files and rebuild the project.

9. Deploy the metadata deployment profile to the WebCenter Portal application as explained in Section 23.5, "Applying Task Flow Customizations to WebCenter Portal or Deployed WebCenter Portal Applications."

   Figure 23–15 shows a sample Document Explorer task flow after customization, with an additional State column.

Figure 23–15 Document Explorer Task Flow - After Customization



Name	Modified By	Last Modified	State	Description
guide.pdf	weblogic	11/19/14 2:11 AM	In Progress	
readme.txt	weblogic	11/19/14 2:21 AM	Draft	
screenshot.png	weblogic	11/19/14 2:20 AM	Draft	
specification.doc	weblogic	11/19/14 2:20 AM	Final	

23.4.2 Examples: Customizing Task Flows for WebCenter Portal Framework Applications

To customize task flows in a Portal Framework application, first follow the instructions in Section 23.2.3, "WebCenter Portal Framework Applications: Enable Customization."

This section provides examples for two possible customizations. It includes the following topics:

- Section 23.4.2.1, "Example: Customizing the Document Library - List View Task Flow"
- Section 23.4.2.2, "Example: Customizing the Content Presenter Task Flow"

23.4.2.1 Example: Customizing the Document Library - List View Task Flow

The example that follows shows how to customize the Document Library – List View task flow to add a new column called HTML Rendition. Before you perform these steps, ensure that you have prepared a customizable Portal Framework application application as described in Section 23.2.3, "WebCenter Portal Framework Applications: Enable Customization."

To customize the Document Library - List View task flow:

1. Open your Portal Framework application in JDeveloper and confirm that you are using the **Customization Developer** role.
2. In the Resource Palette, under My Catalogs, expand the WebCenter Portal Services Catalog and open the Task Flows folder.
3. Right-click **Document Library – List View** and choose **Add to project**. If a confirmation dialog displays, click **Add Library**.
4. In the Application Navigator, expand the **Portal** project to view all the libraries available in the project.

   > **Tip:** If you cannot see the libraries, click the **Navigator Display Options** icon in the Projects bar, and choose **Show Libraries**.

5. Expand the **WebCenter Document Library Service View** library and then **doclib-service-view.jar**, **oracle.webcenter.doclib**, **view**, **jsf**, and **fragments**.
6. Right-click **docListViewerTableTemplate.jsff** and choose **Open**.
7. Add a new column after `ITEM_NAME_COLUMN_HEADER`.
   a. In the Structure window, right-click the column with title `#{dlBndl.ITEM_NAME_COLUMN-HEADER}` and choose Copy and Paste to create a new ADF column component.
   b. In the Property Inspector for the new ADF column component, change the `headerText` property to `HTML Rendition`.
   c. In the Structure window, expand the new column and delete the `af:image` component.
   d. Right click the `af:goLink` component inside `af:switcher -> f:facet - false` and choose **Go to property**.
   e. Change the values of the Text and Destination. For example:

```
Text=" Get Conversion (HTML)"
Destination="http://host:port/idcplg?IdcService=GET_DYNAMIC_CONVERSION
```

```
&amp;dID=#{item.dID}&amp;coreContentOnly=1#{item.portletLinkPostfix}"
```

8. Save your files.

23.4.2.2 Example: Customizing the Content Presenter Task Flow

This example shows how to customize the Content Presenter task flow to control the display of the border and toolbar in Composer Edit mode according to the permission of the current user. Before you perform these steps, ensure that you have prepared a customizable Portal Framework application application as described in Section 23.2.3, "WebCenter Portal Framework Applications: Enable Customization."

To customize the Content Presenter task flow:

1. Open your Portal Framework application in JDeveloper and confirm that you are using the **Customization Developer** role.
2. In the Resource Palette, under **My Catalogs**, expand the **WebCenter Portal Services Catalog** and open the **Task Flows** folder.
3. Right-click **Documents - Content Presenter** and choose **Add to project**. If a confirmation dialog displays, click **Add Library**.
4. In the Application Navigator, expand the **Portal** project to view all the libraries available in the project.

   Tip: If you cannot see the libraries, click the **Navigator Display Options** icon in the Projects bar, and choose **Show Libraries**.

5. Expand the **WebCenter Document Library Service View** library and then **doclib-service-view.jar**, **oracle.webcenter.doclib**, **view**, **jsf**, **taskflows**, and **presenter**.
6. Right-click **presenterSingleView.jsff** and choose **Open**.
7. In Source view, edit the code for the main `af:panelGroupLayout` component as follows:

```
<af:panelGroupLayout id="psvPgl1"
  partialTriggers="psvCtb3 psvPopup2 psvPopup3 psvPopup4 psvCbNp1 psvCbNp0"
  layout="vertical"
  inlineStyle="#{composerContext.subView == 'contentContribution'
    and pageServiceBean.canEdit ? 'border:2px dashed blue' : ''}">
```

   Tip: You can also change the border for `2px dashed blue` to a different style.

8. Edit the code for the `af:panelBox` component as follows:

```
<af:panelBox id="psvPbNp0" showHeader="never" background="light"
  ramp="highlight" inlineStyle="width:350px"
  rendered="#{composerContext.subView == 'layout'
    and backingBeanScope.presenterBacking.nodePending
    and pageServiceBean.canEdit}">
```

9. Edit the code for the `af:toolbar - 1` component under the `contentContribution` facet as follows:

```
<af:toolbar id="psvTb1" flex="1"
  stretchId="psvSp1" rendered="#{pageServiceBean.canEdit}">
```

10. Save your files.

23.5 Applying Task Flow Customizations to WebCenter Portal or Deployed WebCenter Portal Applications

The previous sections explained how to customize WebCenter Portal tools and services task flows for different scenarios. The output of these exercises is the generated MDS customization. The customizations show up as `.xml.xml` or `.jsff.xml` files in the Portal or ViewController project of the application under the `libraryCustomization` package. These customization documents are essentially instructions for MDS to apply changes on top of the base document that is shipped to show the customized behavior at runtime.

Once you complete a task flow customization, you must apply it to the deployed application. To see customizations performed on task flows in JDeveloper at runtime, you must import these customizations to the MDS repository of the deployed application.

> **Note:** This process updates the runtime WebCenter Portal application metadata repository; back up the MDS schema before performing these steps. Also, it is best practice to test your customizations in a development or stage environment first.

This section includes the following topics:

- Section 23.5.1, "WebCenter Portal Framework Applications: Creating a Metadata Deployment Profile"
- Section 23.5.2, "Deploying Task Flow Customizations Directly from JDeveloper"
- Section 23.5.3, "Deploying Task Flow Customizations Using WLST"

23.5.1 WebCenter Portal Framework Applications: Creating a Metadata Deployment Profile

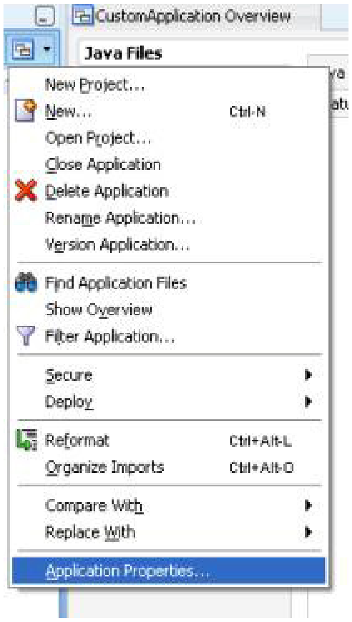
For Portal Framework applications, you must first create a metadata deployment profile.

> **Note:** These steps are not necessary if you are using the WebCenter Portal Task Flow Customization Application to customize task flow for WebCenter Portal.

To create a metadata deployment profile:

1. In the Application Navigator, right-click the application name and choose **Application Properties** (Figure 23–16).

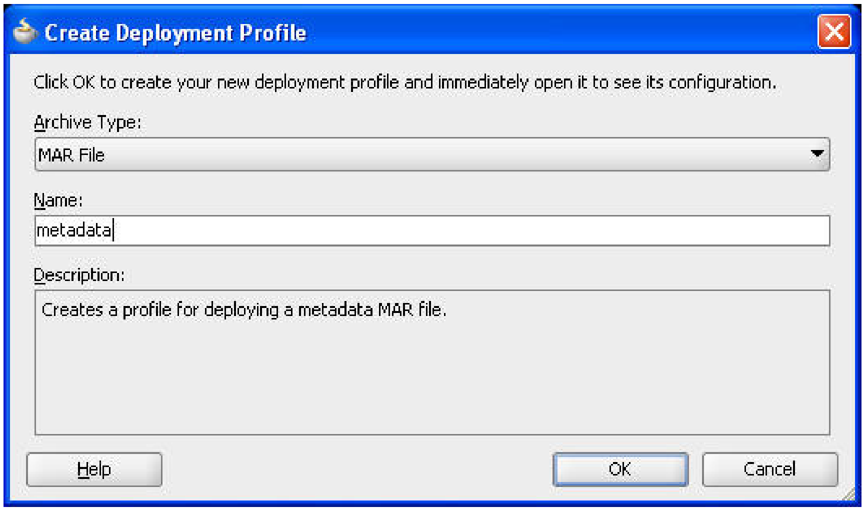
Figure 23–16 Application Properties



2. Click **Deployment** and then click **New** to create a new metadata deployment profile.

3. In the Create Deployment Profile dialog (Figure 23–17), from the **Archive Type** drop-down list, select **MAR File**.

Figure 23–17 Creating a Deployment Profile


Create Deployment Profile

Click OK to create your new deployment profile and immediately open it to see its configuration.

Archive Type: MAR File

Name: metadata

Description: Creates a profile for deploying a metadata MAR file.

4. Click **OK** to close the Create Deployment Profile dialog.

5. Click **OK**, then click **OK** again to finish creating the deployment profile.

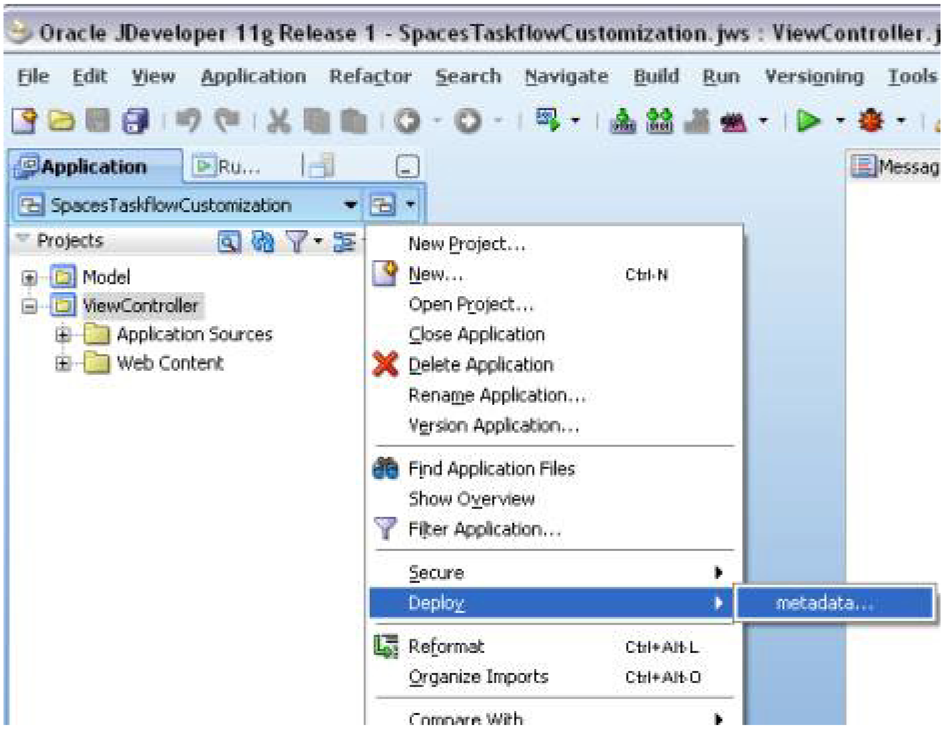
23.5.2 Deploying Task Flow Customizations Directly from JDeveloper

You can deploy your task flow customizations directly from JDeveloper.

To deploy task flow customizations directly from JDeveloper:

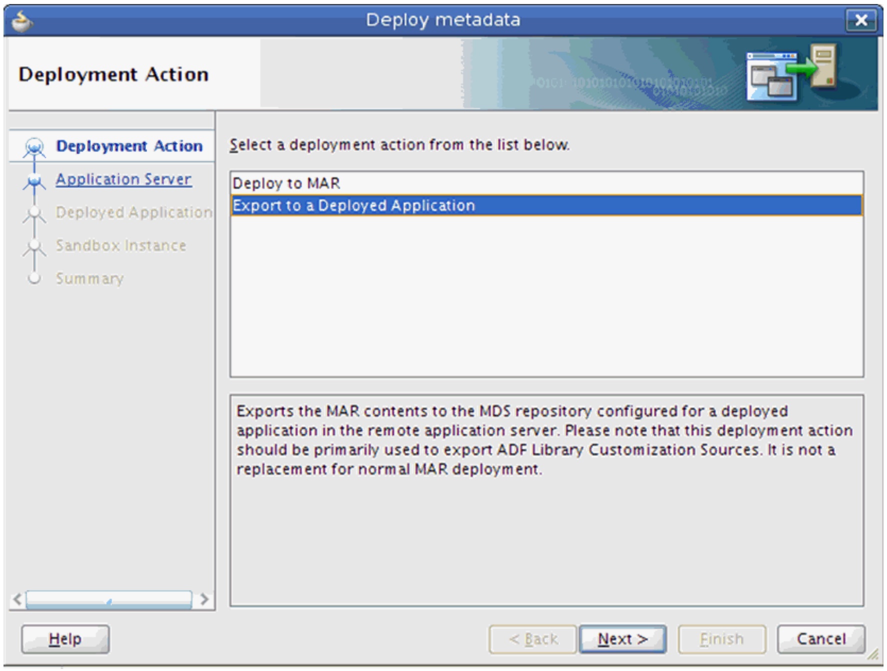
1. In the Application Navigator, right-click the application name and choose **Deploy** and then the metadata deployment profile (Figure 23–18).

Figure 23–18 Deploying the Metadata Deployment Profile



2. In the **Deploy metadata** dialog (Figure 23–19), select **Export to a Deployed Application** and click **Next**.

Figure 23–19 Deploy Metadata Dialog



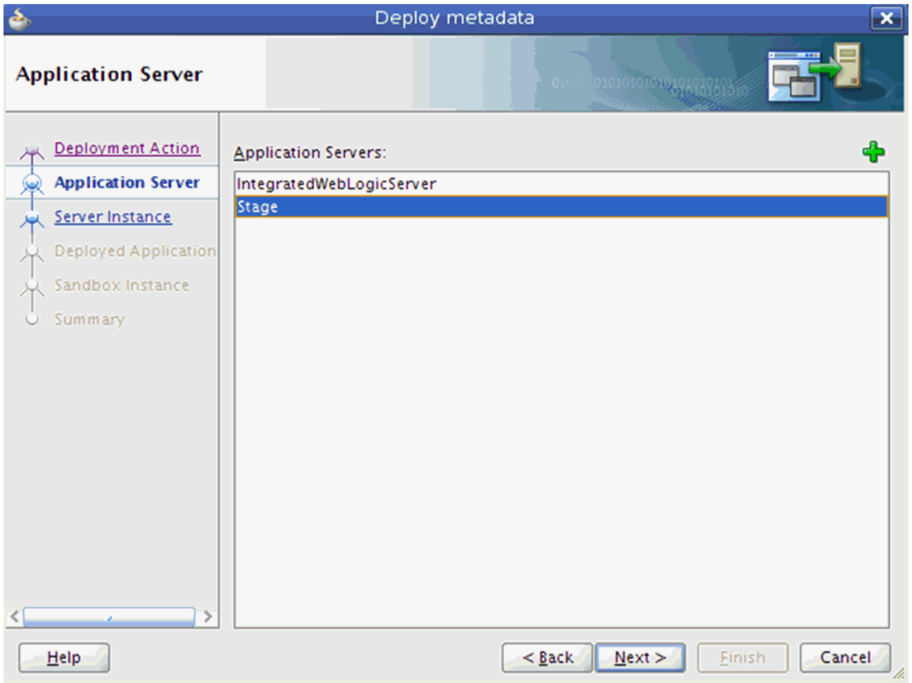
Select a deployment action from the list below.

Deploy to MAR
Export to a Deployed Application

Exports the MAR contents to the MDS repository configured for a deployed application in the remote application server. Please note that this deployment action should be primarily used to export ADF Library Customization Sources. It is not a replacement for normal MAR deployment.

3. On the **Application Server** page (Figure 23–20), select the application server connection for the instance to which you are deploying or create a new connection by clicking the "+" icon. Click **Next**.

Figure 23–20 Deploy Metadata: Application Server



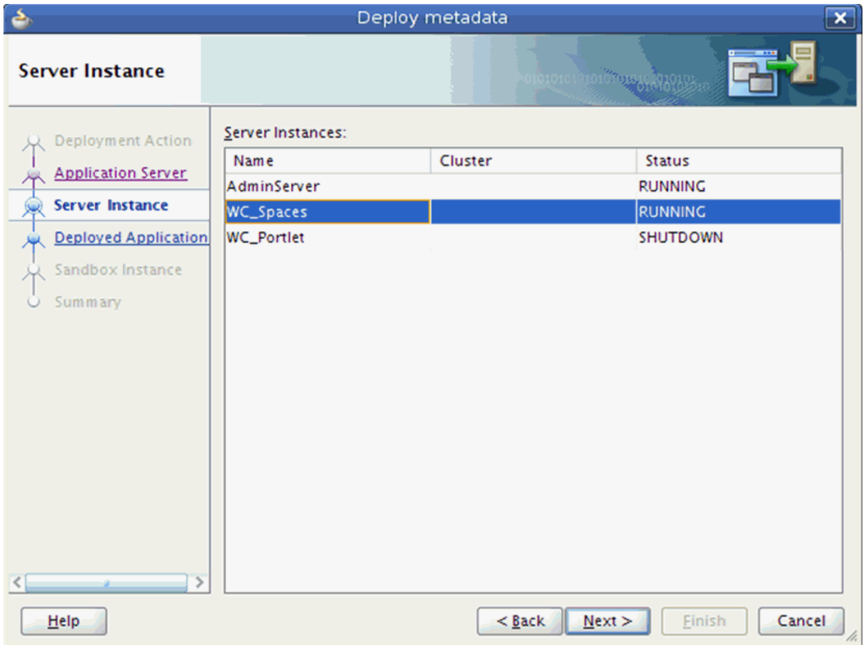
Application Servers:

IntegratedWebLogicServer

Stage

4. On the **Server Instance** page (Figure 23–21), select the server on which the application you are customizing is deployed. For a high availability installation with multiple servers hosting a single application, the customizations only need to be deployed to one server. Click **Next**.

Figure 23–21 Deploy Metadata Dialog: Server Instance

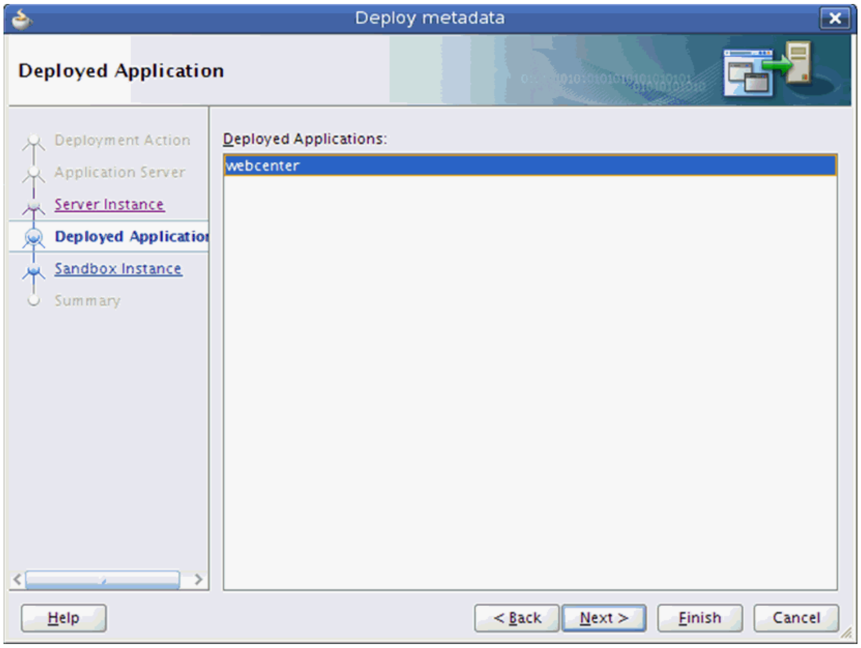


Server Instances:

Name	Cluster	Status
AdminServer		RUNNING
WC_Spaces		RUNNING
WC_Portlet		SHUTDOWN

5. On the **Deployed Application** page (Figure 23–22), select the application to which the customizations should be deployed then click **Next**.

Figure 23–22 Deploy Metadata: Deployed Applications



6. Click **Finish** to deploy the customization.

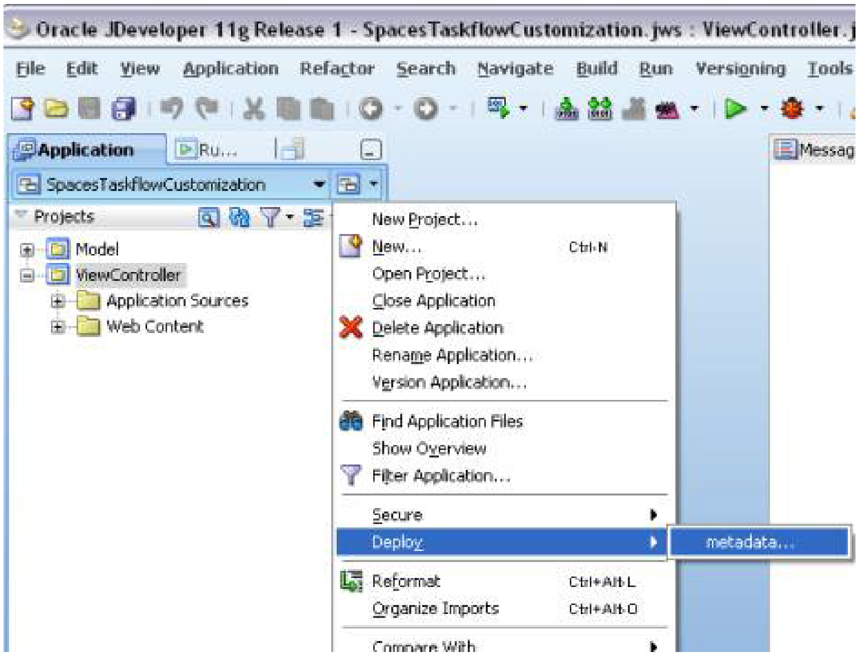
23.5.3 Deploying Task Flow Customizations Using WLST

You can also use the WLST command `importMetadata` to deploy task flow customizations.

To deploy task flow customizations using WLST:

1. In the Application Navigator, right-click the application name and choose **Deploy** and then the name of the metadata deployment profile (Figure 23–23).

Figure 23–23 Deploying the Metadata Deployment Profile



2. In the Deploy metadata dialog, choose Deploy to MAR file, then click **Finish**.

   > **Tip:** Alternatively, you can export the metadata to a deployed application by selecting the **Export to Deployed Application** option, configuring the connection details of the server on which the application is deployed, and selecting the appropriate application.

3. JDeveloper creates the MAR file in the application directory of your *JDEV_USER* home directory. Copy this MAR file, which contains the customizations, to the directory where the target application is deployed. Maintain a backup of this file so that you always have a version of the customizations for this application.

4. Use the MDS WLST command `importMetadata` command to import the task flow customizations to the application's MDS repository.

   Example 23–3 shows an example of how to run the `importMetadata` WLST command. For command syntax and detailed examples, see the "importMetadata" section in the *WebLogic Scripting Tool Command Reference*.

Example 23–3 Command Line for Importing Customizations

```
wls:/weblogic/serverConfig>importMetadata(application='webcenter',
          server='WC_Spaces', fromLocation='/path/metadata.mar',
          docs='/**')
```

For information on how to run WLST commands, see the "Running Oracle WebLogic Scripting Tool (WLST) Commands" section in *Administering Oracle WebCenter Portal*.

23.6 Removing Customizations from Deployed WebCenter Portal Applications

You can revert task flow behavior or look and feel to the original deployment by removing task flow customizations.

Use the MDS WLST command `deleteMetadata` to remove the applied customizations.

> **Note:** Use the `deleteMetadata` command with caution as incorrect use of this command may cause the unintended loss of metadata documents. The sample command below removes the customization created in Section 23.4.1.2, "Example: Customizing the Discussion Forums Task Flow."

Example 23–4 shows an example of how to run the deleteMetadata WLST command. For command syntax and detailed examples, see the "deleteMetadata" section in the *WebLogic Scripting Tool Command Reference*.

Example 23–4 Command to Delete the Customization Metadata from a Deployed WebCenter Portal Application

```
deleteMetadata(application='webcenter',server='WC_Spaces',
       docs='/oracle/webcenter/webcenterapp/view/taskflows/discussionServices/**',
       excludeBaseDocs='true')
```

For information on how to run WLST commands, see the "Running Oracle WebLogic Scripting Tool (WLST) Commands" section in *Administering Oracle WebCenter Portal*.

23.7 Catalog of Customizable Oracle WebCenter Portal Tools and Services Task Flows

The following Oracle WebCenter Portal tools and services task flows have been validated for view-level customizations. You can find these task flows in the libraries or JAR files and definition paths specified in Table 23–1.

> **Note:** To customize analytics task flows, you must add the following JARs to the project:
>
> *JDEV_HOME*/webcenter/modules/oracle.webcenter.framework_11.1.1/analytics-reporting-service-view.jar
>
> *JDEV_HOME*/webcenter/modules/oracle.webcenter.framework_11.1.1/analytics-reporting-service-model.jar

Table 23–1 Oracle WebCenter Portal Tools and Services Customizable Task Flows

Description	Library/JAR Files	Definition Path	Notes
Activity Stream - Mini View	WebCenter Portal Activity Streaming Service View	`oracle/webcenter/activitystreaming/controller/taskflows/activity-streaming-miniview.xml`	Activity stream table is a custom tag and cannot be customized.
Activity Stream - Main View	WebCenter Portal Activity Streaming Service View	`oracle/webcenter/activitystreaming/controller/taskflows/activity-streaming-mainview.xml`	Activity stream table is a custom tag and cannot be customized.
Analytics - Console	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-console.xml`	
Analytics - WebCenter Portal Traffic	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-summary.xml`	
Analytics - Page Traffic	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-page-traffic.xml`	
Analytics - Login Metrics	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-login.xml`	
Analytics - Portlet Traffic	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-portlet-traffic.xml`	
Analytics - Portlet Response Time	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-portlet-resptime.xml`	
Analytics - Portlet Instance Traffic	Task flows included `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-portlet-instance-traffic.xml`	
Analytics - Portlet Instance Response Time	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-portlet-instance-resptime.xml`	
Analytics - Search Metrics	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-search-phrases.xml`	
Analytics - Document Metrics	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-document-view.xml`	
Analytics - Wiki Metrics	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-wiki-view.xml`	

Table 23–1 (Cont.) Oracle WebCenter Portal Tools and Services Customizable Task Flows

Description	Library/JAR Files	Definition Path	Notes
Analytics - Blog Metrics	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-blog-view.xml`	
Analytics - Discussion Metrics	Task flows included in `analytics-reporting-service-view.jar` and `analytics-reporting-service-model.jar`	`oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics-report-discussion-forum-view.xml`	
Announcements	WebCenter Portal Announcement Service View	`oracle/webcenter/collab/announcement/view/taskflows/main-view-definition.xml`	
Announcements - Quick View	WebCenter Portal Announcement Service View	`oracle/webcenter/collab/announcement/view/taskflows/mini-view-definition.xml`	
Application Navigator	WebCenter Portal View	`oracle/webcenter/webcenterapp/view/taskflows/applinks/AppNavigatorRegion.xml`	
Blogs		`oracle/webcenter/blog/view/jsf/taskflows/blogDigestViewer/blog-main-view.xml`	
Calendar Main View	WebCenter Portal Events Service View	`oracle/webcenter/collab/events/view/taskflows/calendar-main-view.xml`	
Calendar Mini View	WebCenter Portal Events Service View	`oracle/webcenter/collab/events/view/taskflows/calendar-mini-view.xml`	
ChooseLanguageTaskflow	WebCenter Portal View	`oracle/webcenter/webcenterapp/view/taskflows/translations/ChooseLanguageTaskflow.xml`	
CommunityBrowserRegion	WebCenter Portal View	`oracle/webcenter/community/view/taskflows/browser/CommunityBrowserRegion.xml`	
community-contacts-task-flow	WebCenter Portal View	`oracle/webcenter/people/view/jsf/regions/community-contacts-task-flow.xml`	
Connections - Card	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/connections/controller/taskflows/table-of-connections-taskflow.xml`	
Connections - Detailed View	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/connections/controller/taskflows/connections-mini-view-advanced-taskflow.xml`	
Connections	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/connections/controller/taskflows/connections-main-view-taskflow.xml`	
Connections - Quick View	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/connections/controller/taskflows/connections-main-view-untabbed-taskflow.xml`	
Connections - Mini View	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/connections/controller/taskflows/connections-mini-view-taskflow.xml`	
customization-manager-taskflow	Oracle Composer	`oracle/adfinternal/pageeditor/manager/taskflows/customization-manager-taskflow.xml`	
Discussion Forums	WebCenter Portal Discussions Service View	`oracle/webcenter/collab/forum/view/taskflows/main-task-flow.xml`	

Table 23–1 (Cont.) Oracle WebCenter Portal Tools and Services Customizable Task Flows

Description	Library/JAR Files	Definition Path	Notes
Discussions - Popular Topics	WebCenter Portal Discussions Service View	`oracle/webcenter/collab/forum/view/taskflows/popularTopic-task-flow.xml`	
Discussions - Recent Topics	WebCenter Portal Discussions Service View	`oracle/webcenter/collab/forum/view/taskflows/recentTopic-task-flow.xml`	
Discussions - Quick View	WebCenter Portal Discussions Service View	`oracle/webcenter/collab/forum/view/taskflows/miniview-task-flow.xml`	
Discussions - Watched Forums	WebCenter Portal Discussions Service View	`oracle/webcenter/collab/forum/view/taskflows/watchedForum-task-flow.xml`	
Discussions - Watched Topics	WebCenter Portal Discussions Service View	`oracle/webcenter/collab/forum/view/taskflows/watchedTopic-task-flow.xml`	
Documents - AutoVue	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/docViewer/autovue.xml`	
Documents - Content Presenter	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/presenter/contentPresenter.xml`	
Documents - Document Manager	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/docManager/documentManager.xml`	
Documents - Document Navigator	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/treeNav/treeNavigator.xml`	
Documents - Document Viewer	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/docViewer/documentViewer.xml`	
Documents - Folder Viewer	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/folderViewer/folderView.xml`	
Documents - Document Explorer	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/explore/explorer.xml`	
Documents - List Viewer	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/docListViewer.xml`	
Documents - Main View	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/mainView.xml`	
Documents - Mini Properties	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/miniProperties/miniProps.xml`	
Documents - Properties	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/docViewer/docInfo.xml`	
Documents - Recent Documents	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/recentDocuments.xml`	
Documents - Rich Text Editor	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/richTextEditor/editor.xml`	
Documents - Upload	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/upload/uploader.xml`	

Table 23–1 (Cont.) Oracle WebCenter Portal Tools and Services Customizable Task Flows

Description	Library/JAR Files	Definition Path	Notes
Documents - Version History	WebCenter Portal Document Library Service View	`oracle/webcenter/doclib/view/jsf/taskflows/versionHistory/history.xml`	
Events	WebCenter Portal Events Service View	`oracle/webcenter/collab/events/view/taskflows/calendar-main-view.xml`	
Exportregion	Internal - invoked by WebCenter Portal administrator for export of portals or portal templates.	`oracle/webcenter/webcenterapp/view/taskflows/lifecycle/Exportregion.xml`	
Feedback	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/kudos/controller/taskflows/KudosDetailViewer.xml`	
Feedback - Quick View	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/kudos/controller/taskflows/KudosMiniViewer.xml`	
Links	WebCenter Portal Links Service View	`oracle/webcenter/relationship/view/jsf/resources/links-detail.xml`	
Links Dialog	WebCenter Portal Links Service View	`oracle/webcenter/relationship/view/jsf/resources/links-detail-popup.xml`	
List - Main View	WebCenter Portal List Service View	`oracle/webcenter/list/view/jsf/regions/main-view-task-flow.xml`	
list-instance-view-task-flow	WebCenter Portal Lists Service View	`oracle/webcenter/list/view/jsf/regions/list-instance-view-task-flow.xml`	Table columns in this task flow are set up dynamically at runtime and should not be customized.
Message Board - Quick View	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/wall/controller/taskflows/WallViewer.xml`	
Message Board	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/wall/controller/taskflows/WallDetailViewer.xml`	
Navigation - Menu	Navigation Task Flows	`oracle/webcenter/navigationtaskflows/view/pagemenu-definition.xml`	
Navigation - Breadcrumb	Navigation Task Flows	`oracle/webcenter/navigationtaskflows/view/pagebreadcrumb-definition.xml`	
Navigation - Tree	Navigation Task Flows	`oracle/webcenter/navigationtaskflows/view/pagetree-definition.xml`	
Organization View	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/profile/view/jsf/regions/orgview/organization-view.xml`	
Page - Create New	WebCenter Portal Page Service View	`oracle/webcenter/page/view/jsf/fragments/page-create-page.xml`	
Polls - Polls Manager	WebCenter Portal Polls and Surveys Service View	`oracle/webcenter/collab/survey/view/jsf/taskflows/list-surveys-definition.xml`	
Polls - Quick View	WebCenter Portal Polls and Surveys Service View	`oracle/webcenter/collab/survey/view/jsf/taskflows/quick-poll-definition.xml`	
Polls - Take Poll	WebCenter Portal Polls and Surveys Service View	`oracle/webcenter/collab/survey/view/jsf/taskflows/take-polls-definition.xml`	
Polls - View Poll Results	WebCenter Portal Polls and Surveys Service View	`oracle/webcenter/collab/survey/view/jsf/taskflows/view-results-definition.xml`	

Table 23–1 (Cont.) Oracle WebCenter Portal Tools and Services Customizable Task Flows

Description	Library/JAR Files	Definition Path	Notes
Profile Gallery	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/personalweb/view/jsf/regions/profile-gallery.xml`	
Profile	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/profile/view/jsf/regions/extended/extended-profile.xml`	
Profile - Snapshot	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/view/jsf/regions/profile-snapshot.xml`	
Publisher	WebCenter Portal PeopleConnections View	`oracle/webcenter/peopleconnections/wall/controller/taskflows/Publisher.xml`	
Recommended Connections	WebCenter Portal Activity Graph Service View	`view/oracle/webcenter/activitygraph/controller/taskflows/recommended-connections.xml`	This task flow is mostly generated by code; the content is only customizable through resource files and metadata mappings.
Resource Action Handler - Resource Viewer	WebCenter Portal Common View	`oracle/webcenter/framework/service/controller/taskflows/resourceViewer.xml`	
Recent Activities	WebCenter Portal Recent Activity Service View	`oracle/webcenter/recentactivity/controller/taskflows/recent-activities.xml`	
RSS Viewer	WebCenter Portal RSS Service View	`oracle/webcenter/rssviewer/view/jsf/fragments/RSSViewerTaskFlow.xml`	
Search	WebCenter Portal Search Services View	`oracle/webcenter/search/controller/taskflows/searchResults.xml`	
Search Preferences	WebCenter Portal Search Services View	`oracle/webcenter/search/controller/taskflows/preferences.xml`	
Search - Saved Searches	WebCenter Portal Search Services View	`oracle/webcenter/search/controller/taskflows/allSavedSearches.xml`	
Search Toolbar	WebCenter Portal Search Services View	`oracle/webcenter/search/controller/taskflows/localToolbarSearch.xml`	
Security - Impersonation	WebCenter Portal Common View	`oracle/webcenter/security/view/impersonation/jsf/taskflows/impersonation-task-flow-definition.xml`	
Security - Impersonation - My Impersonators	WebCenter Common View	`oracle/webcenter/security/view/impersonation/jsf/taskflows/impersonation-myimpersonators-task-flow-definition.xml`	
Security - Impersonation - My Impersonatees	WebCenter Common View	`oracle/webcenter/security/view/impersonation/jsf/taskflows/impersonation-myimpersonatees-task-flow-definition.xml`	
Security - Self Registration	WebCenter Common View	`oracle/webcenter/security/view/selfregistration/jsf/taskflows/selfreg-task-flow-definition.xml`	Public user registration used in WebCenter Portal and custom applications; can be customized in both.
Security - Self Registration - Public Invitation	WebCenter Common View	`oracle/webcenter/security/view/selfregistration/jsf/taskflows/invitation-task-flow-definition.xml`	Public user invitation to join WebCenter Portal. Used in custom applications only.
Security - Enterprise Role - Members	WebCenter Common View	`oracle/webcenter/security/view/rolemembers/jsf/taskflows/rolemembers-task-flow-definition.xml`	Lists the members of an enterprise group. Used in WebCenter Portal and custom applications; can be customized in both.

Table 23–1 (Cont.) Oracle WebCenter Portal Tools and Services Customizable Task Flows

Description	Library/JAR Files	Definition Path	Notes
Security - Enterprise Role - Members Search	WebCenter Common View	`oracle/webcenter/security/view/rolemembers/jsf/taskflows/rolemembers-psearch-task-flow-definition.xml`	Returns the members of an enterprise group of a particular pattern. Used in WebCenter Portal and custom applications; can be customized in both.
Security - Enterprise Role - Members Viewer	WebCenter Common View	`oracle/webcenter/security/view/rolemembers/jsf/taskflows/rolemembers-browser-task-flow-definition.xml`	A tabbed page; one tab shows the members of a group and the other provides a search form. Used in WebCenter Portal and custom applications; can be customized in both.
Security - Role Manager	WebCenter Common View	`oracle/webcenter/security/view/rolemanager/jsf/taskflows/global-rolemanager-task-flow-definition.xml`	Interface to create, modify and delete application roles. Used in custom applications only.
Security - External Application Credential Provisioning	WebCenter Portal External Application Service View	`oracle/adfinternal/extapp/view/fragments/extapp-credential-provisioning-taskflow.xml`	Credential provisioning for a particular external application. Used in WebCenter Portal and custom applications; can be customized in both.
Security - External Application Change Password	WebCenter Portal External Application Service View	`oracle/adfinternal/extapp/view/fragments/extapp-change-password-taskflow.xml`	Screen to change the password for all external applications created. Used in WebCenter Portal and custom applications; can be customized in both.
Similar Items	WebCenter Portal Activity Graph Service View	`view/oracle/webcenter/activitygraph/controller/taskflows/similar-items.xml`	This task flow is mostly generated by code; the content is only customizable through resource files and metadata mappings.
Similar Portals	WebCenter Portal Activity Graph Service View	`view/oracle/webcenter/activitygraph/controller/taskflows/similar-group-space.xml`	This task flow is mostly generated by code; the content is only customizable through resource files and metadata mappings.
Portals	WebCenter Portal View	`oracle/webcenter/community/view/taskflows/browsers/CommunityBrowserRegion.xml`	
Portal Members	WebCenter Portal View	`oracle/webcenter/webcenterapp/view/taskflows/admin/table-of-members-taskflow.xml`	
Subscription Preferences	WebCenter Portal Notification Service View	`oracle/webcenter/notification/view/jsf/regions/SubscriptionPreferences.xml`	The subscription preferences table in this task flow cannot be customized (use `af:iterator`).
Subscription Viewer	WebCenter Portal Notification Service View	`oracle/webcenter/notification/view/jsf/regions/SubscriptionsViewer.xml`	
Tag Cloud	WebCenter Portal Tagging Service View	`oracle/webcenter/tagging/controller/taskflows/tag-selection.xml`	
Tagging Dialog	WebCenter Portal Tagging Service View	`oracle/webcenter/tagging/controller/taskflows/launch-dialog.xml`	
Tagged Items	WebCenter Portal Tagging Service View	`oracle/webcenter/tagging/controller/taskflows/related-resources.xml`	
Tagging - Personal View	WebCenter Portal Tagging Service View	`oracle/webcenter/tagging/controller/taskflows/tagging-personal-view.xml`	
Tagging - Related Links	WebCenter Portal Tagging Service View	`oracle/webcenter/tagging/controller/taskflows/related-links.xml`	

Table 23–1 (Cont.) Oracle WebCenter Portal Tools and Services Customizable Task Flows

Description	Library/JAR Files	Definition Path	Notes
Tagging - Similar Items	WebCenter Portal Tagging Service View	`oracle/webcenter/tagging/controller/taskflows/related-links.xml`	
Top Items	WebCenter Portal Activity Graph Service View	`oracle/webcenter/activitygraph/controller/taskflows/top-items.xml`	This task flow is mostly generated by code; the content is only customizable through resource files and metadata mappings.
Worklist	WebCenter Portal Worklist Service View	`oracle/webcenter/worklist/view/jsf/taskFlowDefs/worklist.xml`	

Part IV

Integrating and Publishing Content

Part IV contains the following chapters:

- Chapter 24, "Introduction to Integrating and Publishing Content"
- Chapter 25, "Configuring Content Repository Connections"
- Chapter 26, "Working with Content Data Controls"
- Chapter 27, "Creating Content Presenter Display Templates"
- Chapter 28, "Integrating Documents"
- Chapter 29, "Adding Content Task Flows and Document Components to a Portal Page"
- Chapter 30, "Integrating Wikis and Blogs"
- Chapter 31, "Content Management REST API"

24

Introduction to Integrating and Publishing Content

This chapter describes the various ways to integrate content into a WebCenter Portal Framework application: content data controls, Content Management Interoperability Services (CMIS) REST APIs, Content Presenter, and the Documents tool. The method you choose is dependent on the requirements of the application and how you want to expose content to end users.

You can integrate content into a Portal Framework application using any of the following methods (for more information, see the references at the end of this chapter):

- **Documents** task flows and components offer a variety of formats to display folders and files, including wikis and blogs, on a page in a Portal Framework application. You can choose the task flows appropriate for your application to provide features for accessing, adding, and managing folders and files; configuring and viewing file and folder properties; and searching file and folder content in WebCenter Content, Oracle Portal, or SharePoint content repositories.

  > **Note:** The availability of SharePoint as a content repository requires the installation of the SharePoint adapter, as described in Section 25.2.3.1, "Installing the Oracle WebCenter Adapter for SharePoint." Administration for SharePoint is performed using WLST commands, not Oracle Enterprise Manager Fusion Middleware Control Console.

  Using documents task flows and document components (such as links, previews, and images), you can add content to the application, and also provide end users with content and documents task flows built into the application to manage, display, and search documents at runtime.

- **Content Presenter** enables you to precisely customize the selection and presentation of content in a Portal Framework application. The Content Presenter task flow is available only when the connected content repository is WebCenter Content and your WebCenter Portal administrator has completed the prerequisite configuration. With Content Presenter, you can select a single item of content, contents under a folder, a list of items, query for content, or select content based on the results of a Personalization Conductor scenario, and then select a template to render the content on a page in a Portal Framework application. Content Presenter has no dependency on the Documents tool for adding or managing the content it displays.

- **CMIS REST APIs** surface and manage content in WebCenter Content.

- **Content data controls** use JCR adapters to enable read-only access to content in a WebCenter Content, Oracle Portal, or SharePoint content repository, and maintain tight control over the way the content displays in a Portal Framework application.

  This functionality is available primarily for backward compatibility with prior releases, and for requirements outside the capability of Content Presenter or the Documents tool and its task flows.

Table 24–1 provides a comparative overview of these methods to help you select the most appropriate method for your needs.

Table 24–1 Methods of Integrating Content into a Framework Application

	Content Data Controls	Content Management REST APIs	Content Presenter	Documents Tool
Repository	■ WebCenter Content ■ Oracle Portal ■ SharePoint	■ WebCenter Content	■ WebCenter Content	■ WebCenter Content ■ Oracle Portal ■ SharePoint
Content Types	■ Folders and content files	■ Folders and content files with support for metadata properties	■ Folders and content files with support for metadata properties ■ Supports Oracle Site Studio region definitions-based content	■ Folders and content files ■ WebCenter Content only: supports folder and content file metadata properties
Content Display	■ Surface content using ADF render components: ADF Go Link, ADF Go Button, ADF Image, and ADF inline frame functions.	■ Surface content using REST APIs and custom client or server side application code. ■ Surface content through single item selection, by folder, and by query results.	■ Task flow-based component intended primarily for rendering content. ■ Surface content through single item selection, by folder, and by query results. ■ Surface content in display templates: either built-in templates or custom display templates developed in JDeveloper. ■ Reuse Oracle Site Studio display templates for Site Studio content. ■ Supports WebCenter Personalization Services Conductor scenario (query results).	■ Task flow-based components intended primarily for collaborating and managing content WebCenter Content only: ■ Document preview ■ View links ■ View images ■ View file information (properties, version history) ■ View metadata

Table 24–1 (Cont.) Methods of Integrating Content into a Framework Application

	Content Data Controls	Content Management REST APIs	Content Presenter	Documents Tool
Content Management	None	Manage content using REST APIs and custom client or server side application code Create, update, delete folders and content files and associated metadata fields	In-context contribution editing for HTML and Site Studio content	Manage content through graphical user interface Create, update, delete folders and content files WebCenter Content only: ■ Manage associated metadata properties ■ Item-level security ■ Oracle Workflow (WebCenter Portal only) ■ View metadata
Benefits	Standard JCR API integrates with many different content repositories.	Flexible REST-based APIs useful for client-side style development	Flexible display using display templates Oracle Site Studio support	Choice of task flows to provide easy UI access to managing content
Limitations	Read-only content No Oracle Site Studio support	Content must reside in Oracle Content Server repository No Oracle Site Studio support	Content must reside in WebCenter Content repository	No Oracle Site Studio support

The following chapters provide information that you will need for *any* method you use:

- "Managing Content Repositories" in *Administering Oracle WebCenter Portal* to configure and manage content repositories used by WebCenter Portal applications.
- Chapter 25, "Configuring Content Repository Connections" to configure and edit content repository connections that provide access to decentralized content.

The following chapter provides information about using *content data controls*:

- Chapter 26, "Working with Content Data Controls" to use Java Content Repository (JCR) data controls to enable read-only access to any content repository.

The following manual provides information about using *CMIS (Content Management Interoperability Services) REST APIs*:

- *Oracle Fusion Middleware Content Management REST Service Developer's Guide*

The following chapters provide information about using *Content Presenter*:

- Chapter 27, "Creating Content Presenter Display Templates"
- Chapter 29, "Adding Content Task Flows and Document Components to a Portal Page"
- "Publishing Content Using Content Presenter" in *Building Portals with Oracle WebCenter Portal* to work with content at runtime in WebCenter Portal applications.

The following chapters provide information about using the *Documents tool*, which includes the documents task flows, document components (links, inline frames, and images), wikis, and blogs:

- Chapter 28, "Integrating Documents"
- Chapter 29, "Adding Content Task Flows and Document Components to a Portal Page"
- Chapter 30, "Integrating Wikis and Blogs"
- "Working with Content in a Portal" in *Building Portals with Oracle WebCenter Portal* to work with content at runtime in WebCenter Portal applications.

25

Configuring Content Repository Connections

This chapter describes how to configure connections to content repositories to provide access to the content, and how to add content to pages in a Portal Framework application.

For information about other ways in which to integrate content into a Portal Framework application, see Chapter 24, "Introduction to Integrating and Publishing Content."

This chapter includes the following sections:

- Section 25.1, "Overview of Content Adapters"
- Section 25.2, "Configuring Content Repository Connections"
- Section 25.3, "Editing Content Repository Connections"
- Section 25.4, "Using an Existing Repository Connection for a New Portal Framework Application"

25.1 Overview of Content Adapters

In your Portal Framework application, you can use the following adapters:

- Oracle WebCenter Content: Content Server: The Content Server adapter is used to integrate content from an automated information system managed by Content Server. This system enables sharing, managing, and distributing of business information through a Web site as a common access point.

  This adapter is bundled with Oracle WebCenter Portal extension bundle, so it is integrated by default.

- Oracle Portal: The Oracle Portal adapter is used to integrate content from a content repository located in the Oracle Portal schema.

  This adapter is bundled with Oracle WebCenter Portal extension bundle, so it is integrated by default.

- Oracle WebCenter Adapter for SharePoint: This adapter is used to integrate content from the Microsoft SharePoint 2007 repository.

  You must install this adapter, as described in Section 25.2.3.1, "Installing the Oracle WebCenter Adapter for SharePoint."

- File System: The File System adapter is used to add content located on your operating system's file system to JSF pages.

  This adapter is bundled with Oracle WebCenter Portal extension bundle, so it is integrated by default.

Note: The File System adapter is intended to be used in development environments only.

25.2 Configuring Content Repository Connections

Content repository connections are required to access the repository content to be published on JSF pages. These connections are also required to access the repository content through the WebCenter Portal REST API.

This section describes how to configure content repository connections based on Oracle WebCenter Content: Content Server, Oracle Portal, Oracle WebCenter Adapter for SharePoint, and file system adapters. Content Presenter can connect to and retrieve content available in Content Server content repositories. With JCR data controls, you can connect to Content Server, Oracle Portal, Oracle WebCenter Adapter for SharePoint, and file systems.

Connections can be created under Application Resources in the Application Navigator and under IDE Connections in the Resource Palette.

This section includes the following subsections:

- Section 25.2.1, "Creating a Content Repository Connection Based on the Oracle Content Server Adapter"
- Section 25.2.2, "Creating a Content Repository Connection Based on the Oracle Portal Adapter"
- Section 25.2.3, "Creating a Content Repository Connection Based on the Oracle WebCenter Adapter for SharePoint"
- Section 25.2.4, "Creating a Content Repository Connection Based on the File System Adapter"
- Section 25.2.5, "What Happens When You Create a Repository Connection"
- Section 25.2.6, "About Creating a Repository Connection"

25.2.1 Creating a Content Repository Connection Based on the Oracle Content Server Adapter

This section describes how to configure a Content Server-based content repository connection. To successfully perform the subsequent steps, you must use Content Server release 11.1.1.8.0 or later. For information about how to configure Content Server for Oracle WebCenter Portal, see the "Configuring an Oracle WebCenter Content Server Repository" section in *Administering Oracle WebCenter Portal*.

For an overview of the prerequisites and tasks required to get Content Server working in a portal or Framework application, see the "Configuration Roadmap for Content Server" section in *Administering Oracle WebCenter Portal*.

To create a Content Server-based repository connection:

1. In Oracle JDeveloper, open your Portal Framework application.
2. In the Application Resources panel, right-click **Connections** and choose **New Connection**, then **Content Repository**.
3. In the Create Content Repository Connection dialog, specify a connection name for the connection; for example, `MyOCSConnection`.

Note: If you plan to deploy your portal to a managed WebLogic Server instance for which a connection is already established (for example, by an administrator using WLST), then you must use the same **Connection Name** here as was used for the managed server connection. Consult with your portal system administrator if you are unsure about the correct connection name.

Tip: You can choose between creating application-specific connections in the Application Resources panel and creating common connections in the Resource Palette (IDE Connections).

4. Select **Oracle Content Server** from the **Repository Type** box.

5. Select **Set as primary connection for Documents**, to make this connection the primary (default) connection for all content management operations through the documents tool or Content Presenter. Selecting this option writes a configuration to the `adf-config.xml` file that identifies this connection as the default connection. If `connectionName` parameter is specified for a documents task flow, that value overrides this setting.

   Note: To be able to set a connection as the primary (default) connection for documents, you must select the **Application Resources** option in **Create Connection In**. This is because connections created as IDE connections cannot be used directly, they must be added to applications.

6. Under **Configuration Parameters**, enter values for the parameters, as shown in Table 25–1 and Figure 25–1.

Table 25–1 Configuration Parameters for Content Server

Configuration Parameters	Values
RIDC Socket Type	Determines whether the client library connects on the Content Server listener port or the Web server filter. It accepts `socket`, `socketssl`, `web`, or `jaxws`. `socket`: Uses an `intradoc` socket connection to connect to the Content Server. The client IP address must be added to the list of authorized addresses in the Content Server. This corresponds to the `SocketHostAddressSecurityFilter` setting in the Content Server configuration file. `socketssl`: Uses an `intradoc` socket connection to connect to the Content Server that is secured using the SSL protocol. The client's certificates must be imported in the server's trust store for the connection to be allowed. `web`: Uses an HTTP(S) connection to connect to the Content Server. jaxws: Uses an HTTP(S) connection to connect to Content Server. Table 25–2 includes more information on the configuration parameters required for each RIDC socket type.
Server Host Name	Host name of the system where the Content Server is running. For example: `mycontentserver.mycompany.com`.

Table 25–1 (Cont.) Configuration Parameters for Content Server

Configuration Parameters	Values
Content Server Listener Port	Port of the server specified in the **Server Host Name** field. This corresponds to the `IntradocServerPort` setting in the Content Server configuration file, which defaults to port `4444`. **Note:** Although the intradocport value for a particular Content Server defaults to 4444, that value may change depending on the Content Server configuration.
URL of the Web Server Plugin	If the RIDC socket type is `web`, then the URL must be: For Content Server release 11.1.1.8.0: `http://`*`host_name:port_number/_dav/web_root/plugin_root`*. For example: `http://mycontentserver:4444/_dav/cms/idcplg`
Web Server Context Root	The Web server context root for Content Server to integrate advanced metadata and Site Studio capabilities in the Portal Framework application. The format of the Web server context root is `/`*`context_root`*. For example, `/cs`.
Admin Username	The user name with administrative rights for the Content Server instance. It defaults to `sysadmin`.
Admin Password	The password for the Content Server admin user. For example: `password`. This is needed for `web` connections only.
KeyStore File Location	Location of key store that contains the private key used to sign the security assertions. The key store location must be an absolute path. For example: `c:\keys\keystore.xyz`.
KeyStore Password	The password required to access the keystore.
Private Key Alias	The client private key alias in the keystore. The key is used to sign messages to the server. The public key corresponding to this private key must be imported in the server keystore.
Private Key Password	The client private key password required to retrieve the key from the keystore.
JAX-WS Client Security Policy	Enter the client security policy to be used when the **RIDC Socket Type** is **JAX-WS**. The JAX-WS client security policy can be any valid OWSM policy, but must match the security policy configured for the Content Server's Native Web Services IdcWebLogin service. For more information about the IdcWebLogin service, see the "Getting Started with Integrating WebCenter Content into Your Environment" section in *Developing with Oracle WebCenter Content*. For information about predefined security policies, see the "Security Policies" section in *Security and Administrator's Guide for Web Services*.
Cache Invalidation Interval	The interval (in minutes) used by WebCenter caches to automatically detect external Content Server content changes. This allows WebCenter to automatically clear cached items when changes to those items are made directly in the Content Server UI. The interval is in minutes. A value of `0` disables cache invalidation. The minimum valid value to enable cache invalidation is `2`.
Binary Cache Maximum Entry Size	The maximum size (in bytes) for WebCenter caching of Content Server binary documents. Documents larger than this size are not cached by WebCenter. The unit is bytes and defaults to `102400` (`100 Kb`).

Table 25–2 Content Server Connection Parameters for Each RIDC Socket Type

Connection Parameters	RIDC Socket Type: web	RIDC Socket Type: socket	RIDC Socket Type: socketssl	RIDC Socket Type: jaxws
Server Host Name	Not Applicable	Mandatory for Content Presenter Defaults to local host.	Mandatory for Content Presenter Defaults to local host.	Not Applicable
Content Server Listener Port	Not Applicable	Port specified for the incoming provider in the server. Defaults to `4444`. **Note:** Although the intradocport value for a particular Content Server defaults to 4444, that value may change depending on the Content Server configuration.	Port specified for the `sslincoming` provider in the server. Defaults to `4444`.	Not Applicable
URL of the Web Server Plugin	Mandatory	Not Applicable	Not Applicable	Mandatory Use format: `http://`*`hostname:port`*`/web_root` For example: http(s)://*`myhost.com:9044`*`/idcnativews`
Web Server Context Root	Optional	Optional	Optional	Optional

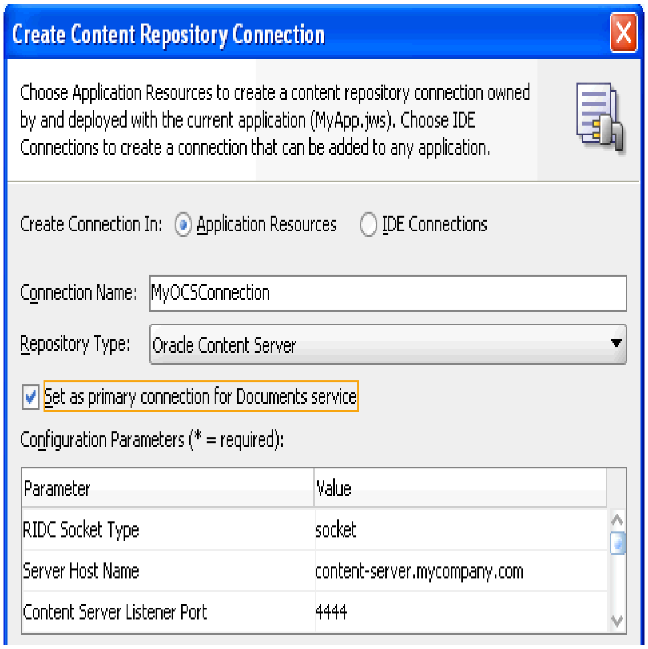
Table 25–2 (Cont.) Content Server Connection Parameters for Each RIDC Socket Type

Connection Parameters	RIDC Socket Type: web	RIDC Socket Type: socket	RIDC Socket Type: socketssl	RIDC Socket Type: jaxws
JAX-WS Client Security Policy	Not Applicable	Not Applicable	Not Applicable	Mandatory, unless Global Policy Attachment is used, in which case it should be left empty. This is the name of an OWSM client security policy. This policy must match the corresponding server side policy applied on the Content Server. For information about security policies, see the "Security Policies" section in the *Security and Administrator's Guide for Web Services*.
Admin Username	Mandatory	Optional Defaults to `sysadmin`	Optional Defaults to `sysadmin`	Optional Defaults to `weblogic`
Admin Password	Mandatory	Not Applicable	Not Applicable	Whether the password is used or not depends on the selected JAX-WS security policy.
Key Store and Private Key	Not Applicable	Not Applicable	Mandatory	Not Applicable
Identity Propagation	Not supported at runtime	Supported For testing purpose, connects as guest if no/invalid user name is specified.	Supported For testing purpose, connects as guest if no/invalid user name is specified.	Supported, provided that the JAX-WS security policy supports identity propagation.
External Application	Mandatory	Supported Password is not used.	Supported Password is not used.	Supported Whether the password is used or not depends on the selected JAX-WS security policy.

Table 25–2 (Cont.) Content Server Connection Parameters for Each RIDC Socket Type

Connection Parameters	RIDC Socket Type: web	RIDC Socket Type: socket	RIDC Socket Type: socketssl	RIDC Socket Type: jaxws
User Name and Password	Supported	Supported The password is not verified during the test connection operation.	Supported The password is not verified during the test connection operation.	Supported Whether the password is used or not depends on the selected JAX-WS security policy.

Figure 25–1 Content Repository Connection - Content Server



Create Content Repository Connection

Choose Application Resources to create a content repository connection owned by and deployed with the current application (MyApp.jws). Choose IDE Connections to create a connection that can be added to any application.

Create Connection In: ● Application Resources ○ IDE Connections

Connection Name: MyOCSConnection

Repository Type: Oracle Content Server

☑ Set as primary connection for Documents service

Configuration Parameters (* = required):

Parameter	Value
RIDC Socket Type	socket
Server Host Name	content-server.mycompany.com
Content Server Listener Port	4444

7. In the **Login Timeout (ms)** field, specify the time in milliseconds. This timeout determines how long the application must wait when trying to establish a session with the content repository. If the network connection or the content repository server to which you are trying to connect is slow, then consider overriding the default value specified in this field.

8. Select the applicable authentication method. See Section 25.2.6.1, "About Using Identity Propagation and External Application Authentication Methods" for information. If you select the Identity Propagation authentication method, then you must configure secure socket layer (SSL) in Content Server. For information, see the "Prerequisites to Configuring Content Server " section in *Administering Oracle WebCenter Portal*.

9. **User Name** and **Password** fields under the **Specify login credentials for the current JDeveloper session** checkbox are optional for the Identity Propagation authentication method. In a secured application when Identity Propagation is the chosen authentication method, selecting the Specify login credentials for the current JDeveloper session checkbox lets you navigate to the authenticated content repository connection at design time. When this checkbox is selected, you can also validate if user name and password you specified can be authenticated.

Note: If the **Specify login credentials for the current JDeveloper session** checkbox is selected, then the credentials you entered are used. If the checkbox is not selected, then the connection is tested using External Application credentials (if they exist), otherwise null credentials are used.

If you have selected **External Application** for authentication and also specified either public or shared credentials, then you can leave these fields blank, as the public or shared credentials can be used to login at design time. However, if you have selected **External Application** but have not specified public or shared credentials, then you must specify user name and password here.

10. Click **Test Connection** to check whether you have entered the connection details correctly. You should see a `Success!` status.

    During testing, the user name and password are used (if specified). If they are not specified, but an external application is defined with either shared or public credentials, then this is used. Otherwise, the guest user is used.

11. Click **OK**.

12. In the Application Resources panel, expand the repository connection you just created. The Connection Credentials dialog displays.

Note: The Connection Credentials dialog displays if you do not save the credentials, that is, you do not select the **Specify login credentials for the current JDeveloper session** checkbox, or if you do not specify an external application that uses public or shared credentials.

13. Enter the **User Name** and **Password** for the Content Server connection and click **OK**. The connection displays under the Application Resources panel.

25.2.2 Creating a Content Repository Connection Based on the Oracle Portal Adapter

This section describes how to create a content repository connection based on the Oracle Portal adapter. Before creating a repository connection, see Section 25.2.6, "About Creating a Repository Connection." You can use this connection to configure a content data control that will enable you to add content from the Oracle Portal repository to JSF pages.

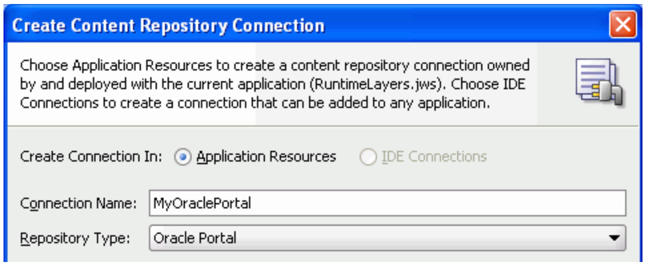
To create an Oracle Portal repository connection:

1. In Oracle JDeveloper, open your Portal Framework application.
2. In the Application Resources panel, right-click **Connections** and choose **New Connection** and then **Content Repository**.
3. In the Create Content Repository Connection dialog, specify a name for the connection; for example, `MyOraclePortal`.

Tip: You can choose between creating application-specific connections in the Application Resources panel and creating common connections in the Resource Palette (IDE Connections).

4. Select **Oracle Portal** from the **Repository Type** box, as shown in Figure 25–2.

Figure 25–2 Content Repository Connection - Oracle Portal



Create Content Repository Connection

Choose Application Resources to create a content repository connection owned by and deployed with the current application (RuntimeLayers.jws). Choose IDE Connections to create a connection that can be added to any application.

Create Connection In: ● Application Resources ○ IDE Connections

Connection Name: MyOraclePortal

Repository Type: Oracle Portal

5. Select **Set as primary connection for Documents** to make this connection the primary (default) connection for all content management operations through the documents tool or Content Presenter. Selecting this option writes a configuration to the `adf-config.xml` file that identifies this connection as the default connection. If `connectionName` parameter is specified for a documents task flow, that value overrides this setting.

   Note: To be able to set a connection as primary (default) connection for documents, you must select the **Application Resources** option in **Create Connection In**. This is because connections created as IDE connections cannot be used directly, they must be added to applications.

6. Select a connection from the **Database Connection** list, or create a new connection to the Oracle Portal schema:

   a. In the Create Database Connection wizard, specify the connection name and type.

   b. Enter the database user name and password of the Oracle Portal schema. By default, the user is PORTAL.

   c. Under **Oracle (JDBC) Settings**, if you intend to specify a custom JDBC URL, then select the **Enter Custom JDBC URL** checkbox, and specify the database URL of the Portal schema in the `jdbc` format:

      ```
      jdbc:oracle:thin:@dbhost:dbport:dbsid
      ```

   d. If you did not perform the above step, then select a driver, enter the host name, JDBC port, SID, and service name, as shown Table 25–3 and Figure 25–3.

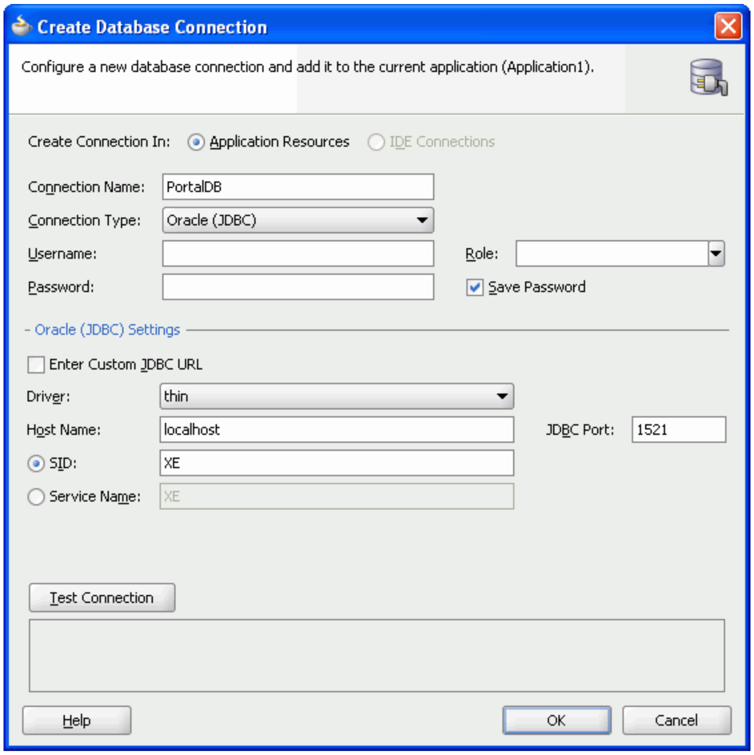
Table 25–3 Parameters for Creating Oracle Portal-based Content Data Control

Parameters	Description
Driver	There are two types of drivers: thin and oci8. The thin driver can be used to connect to Oracle Database release 8*i* or later databases with TCP/IP network protocols. This driver is included in the default Oracle JDBC library for all projects. The oci8 driver is used when creating a Java application that runs against an Oracle Application Server. This is a thick driver optimized for the Oracle Database. It is a mix of Java and native code. This driver handles any database protocol (TCP, IPX, BEQ, and so on). It is recommended for applications that are run from the computer on which they are stored.

Table 25–3 (Cont.) Parameters for Creating Oracle Portal-based Content Data Control

Parameters	Description
Host Name	Name of the Oracle Database. Use an IP address or a host name that can be resolved by TCP/IP; for example, `myserver`. The default value is `localhost`.
JDBC Port	Value to identify the TCP/IP port.
SID	Unique system identifier of an Oracle database instance.
Service Name	The service name for an Oracle database instance.

Figure 25–3 Create Database Connection



Create Database Connection

Configure a new database connection and add it to the current application (Application1).

Create Connection In: ● Application Resources ○ IDE Connections

Connection Name: PortalDB

Connection Type: Oracle (JDBC)

Username:

Role:

Password:

☑ Save Password

- Oracle (JDBC) Settings

□ Enter Custom JDBC URL

Driver: thin

Host Name: localhost

JDBC Port: 1521

● SID: XE

○ Service Name: XE

e. Click **Test Connection** to check whether you have entered the connection details correctly. You should see a `Success!` status.

f. Click **OK**.

7. In the Create Content Repository Connection dialog, in the **Login Timeout (ms)** field, specify the time in milliseconds. This timeout determines how long the application must wait when trying to establish a session with the content repository. If the network connection or the content repository server to which you are trying to connect is slow, then consider overriding the default value specified in this field.

8. Select the applicable authentication method. See Section 25.2.6.1, "About Using Identity Propagation and External Application Authentication Methods" for information.

9. Select the **Specify login credentials for current JDeveloper session** checkbox and enter the Oracle Portal single sign-on user name and password for logging in to your portal instance. The Oracle Portal single sign-on user name and password

entered here are used to test the connection and are functional only at design time. Then click **OK**.

> **Note:** If the **Specify login credentials for current JDeveloper session** checkbox is selected, then the credentials you entered are used. If the checkbox is not selected, then the connection is tested using External Application credentials (if they exist), otherwise null credentials are used.
>
> If you have selected **External Application** for authentication and also specified either public or shared credentials, then you can leave these fields blank, as the public or shared credentials can be used to login at design time. If you specified both public and shared credentials for the external application, then the public credentials have higher precedence. However, if you have selected **External Application** but have not specified public or shared credentials, then you must specify user name and password here.

10. In the Application Resources panel, expand the repository connection you just created. The Connection Credentials dialog displays.

> **Note:** The Connection Credentials dialog displays if you do not save the credentials, that is, you do not select the **Specify login credentials for the current JDeveloper session** checkbox, or if you do not specify an external application that uses public or shared credentials.

11. Enter the user name and password for Oracle Portal connection and click **OK**. The connection displays under the Application Resources panel.

> **See Also:** To create a data control using this connection, perform the procedure described in Section 26.2, "Configuring Content Data Controls for JCR Adapters".

25.2.3 Creating a Content Repository Connection Based on the Oracle WebCenter Adapter for SharePoint

The Oracle WebCenter Adapter for SharePoint extracts and searches content within a Microsoft SharePoint 2007 repository. The adapter accesses the repository using the Microsoft SharePoint SOAP interfaces. Oracle recommends that you study Section 25.2.6.3, "About Oracle WebCenter Adapter for SharePoint" before configuring and using Oracle WebCenter Adapter for SharePoint.

This section includes the following subsections:

- Section 25.2.3.1, "Installing the Oracle WebCenter Adapter for SharePoint"
- Section 25.2.3.2, "Creating a Content Repository Connection Based on the Oracle WebCenter Adapter for SharePoint"
- Section 25.2.3.3, "Mapping Microsoft SharePoint Content and Services"

25.2.3.1 Installing the Oracle WebCenter Adapter for SharePoint

Before you configure the Oracle WebCenter Portal adapter for SharePoint, you must install it in JDeveloper.

The adapter files are located in the **Oracle WebCenter Portal Companion DVD** in the `ofm_wc_generic_jcr_sharepoint_adapter_11.1.1.4.0.zip` file. When you extract this ZIP file to a temporary location, you will find the adapter files in the `*TEMP_LOCATION*/WebCenter/services/content/adapters` directory.

To install the adapter:

1. Start Oracle JDeveloper, if it is not already running.
2. From the **Help** menu, select **Check for Updates**.
3. Click **Next** in the Welcome page of the Check for Updates wizard.
4. On the Source page, select **Install From Local File**, then select `oracle.webcenter.content.jcr.sharepoint.ear` from the `*TEMP_LOCATION*/WebCenter/services/content/adapters` directory. This is the temporary directory in which you extracted the contents of the `ofm_wc_generic_jcr_sharepoint_adapter_11.1.1.4.0.zip` file from the Oracle WebCenter Portal Companion DVD.
5. Click **Finish**. When prompted, restart JDeveloper.

25.2.3.2 Creating a Content Repository Connection Based on the Oracle WebCenter Adapter for SharePoint

To create a repository connection based on Oracle WebCenter Adapter for SharePoint:

1. In Oracle JDeveloper, open your Portal Framework application.
2. In the Application Resources panel, right-click **Connections** and choose **New Connection**, then **Content Repository**.
3. In the Create Content Repository Connection dialog, specify a connection name for the connection; for example, `MySPConnection`.

   Tip: You can choose between creating application-specific connections in the Application Resources panel and creating common connections in the Resource Palette (IDE Connections).

4. Select **JCR SharePoint Adapter** from the **Repository Type** box.

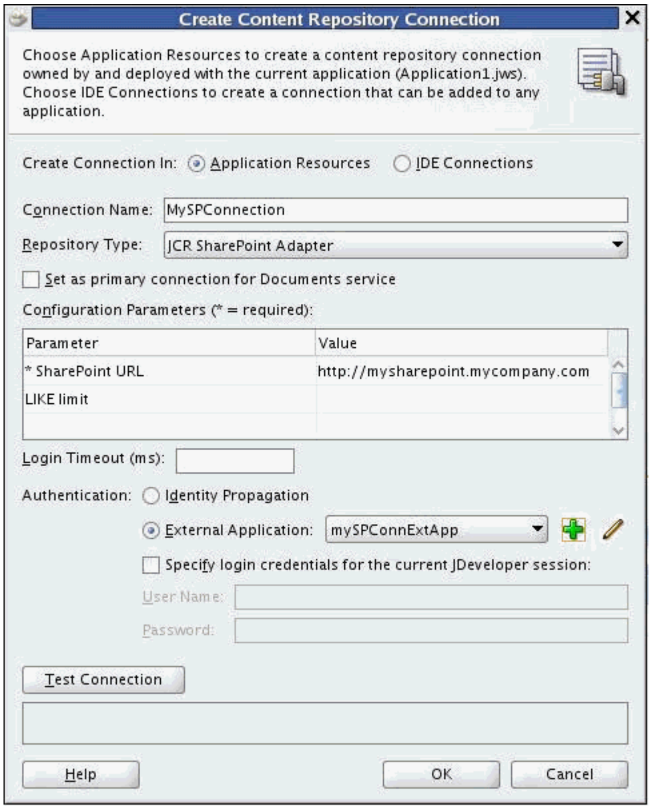
   Note: This option displays only if the extension for Oracle WebCenter Adapter for SharePoint is installed.

5. Select **Set as primary connection for Documents**, if you intend to make it the default connection for documents. Selecting this option writes a configuration to the `adf-config.xml` file that identifies this connection as the default connection for documents. If a Document Library task flow is used without any `connectionName` input parameter, then this connection is used. For information about documents, see Chapter 28, "Integrating Documents."

   Note: To be able to set a connection as primary connection for documents, you must select the **Application Resources** option in **Create Connection In**. This is because connections created as IDE connections cannot be used directly, they must be added to applications.

6. Under **Configuration Parameters**, enter the **SharePoint URL** which is the Web address of the SharePoint site to which you want to connect. For example, `http://mysharepoint.mycompany.com`, as shown in Figure 25–4.

Figure 25–4 Content Repository Connection - Oracle WebCenter Adapter for SharePoint



Create Content Repository Connection

Choose Application Resources to create a content repository connection owned by and deployed with the current application (Application1.jws). Choose IDE Connections to create a connection that can be added to any application.

Create Connection In: ● Application Resources ○ IDE Connections

Connection Name: MySPConnection

Repository Type: JCR SharePoint Adapter

□ Set as primary connection for Documents service

Configuration Parameters (* = required):

Parameter	Value
* SharePoint URL	http://mysharepoint.mycompany.com
LIKE limit	

Login Timeout (ms):

Authentication: ○ Identity Propagation

● External Application: mySPConnExtApp

□ Specify login credentials for the current JDeveloper session:

User Name:

Password:

7. Enter an integer value representing the number of characters for the LIKE limit. If no value is set, the LIKE limit defaults to `64` characters as the limit for search pattern strings that are passed to the Microsoft SharePoint Server. If the value is set to zero, then the full string is passed to the server. That is, the LIKE limit is disabled. This parameter is optional. Oracle recommends that it be left to its default state. For related information, see Section 25.2.6.3, "About Oracle WebCenter Adapter for SharePoint."

8. In the **Login Timeout (ms)** field, specify the time in milliseconds. This timeout determines how long the application must wait when trying to establish a session with the content repository. Oracle recommends that there is a fast network connection between the deployed application and the Microsoft SharePoint repository. If the network connection or the content repository server to which you are trying to connect is slow, then consider overriding the default value specified in this field.

9. Select the **External Application** authentication method. For information about this authentication method, see Section 25.2.6.1, "About Using Identity Propagation and External Application Authentication Methods."

Note: Oracle WebCenter adapter for Microsoft SharePoint does not support the **Identity Propagation** authentication method. Therefore, the **External Application** authentication method lets you use a single shared set of credentials for all users when accessing the repository. You can also configure this option to enable each user to enter their own login credentials when accessing the repository the first time by omitting both the Shared and Public credentials in the External Application configuration. The system then reuses each unique credential on subsequent access requests.

---

10. Select the **Specify login credentials for the current JDeveloper session** checkbox and specify **User Name** and **Password**. This step is optional, and only required if you want to override the **External Application** authentication credentials created in the previous step. Moreover, this override only applies to the JDeveloper design time.
11. Click **OK**.
12. Optionally, to test the connection, expand the repository connection you just created, in the Application Resources panel. The Connection Credentials dialog displays.

Note: The Connection Credentials dialog displays if you do not save the credentials, that is, you do not select the **Specify login credentials for the current JDeveloper session** checkbox, or if you do not specify an external application that uses public or shared credentials.

---

13. Enter the **User Name** and **Password** for this connection and click **OK**. The connection displays under the Application Resources panel.

    This step is optional.

25.2.3.3 Mapping Microsoft SharePoint Content and Services

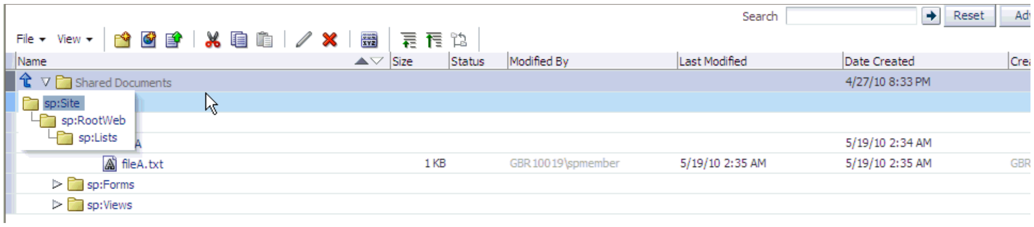
The Oracle WebCenter Adapter for SharePoint is designed to map the content managed in SharePoint servers, such as sites, lists, list items, metadata, documents, as well as content services delivered by Microsoft SharePoint, such as search and security.

The adapter maps content and content services that are relevant to the JCR standard. In other words, the adapter does not map the Microsoft SharePoint graphical user interface (GUI) and the application-level functions that are not part of the JCR standard. For example, the adapter does not map the GUI application logic of the Microsoft SharePoint server (not covered by JCR), but it provides GUI-relevant metadata so that JCR or Java applications can restore some of the GUI logic such as SharePoint lists, if that is the goal of the application.

Default JCR Location of the Microsoft SharePoint Documents Libraries

For a SharePoint Services v3 Team Site, the Shared Documents Library appears at path:`/sp:Site/sp:RootWeb/sp:Lists/Shared Documents/sp:Files`, as shown in Figure 25–5.

Figure 25–5 The Shared Documents Library Path for a SharePoint Services v3 Team Site

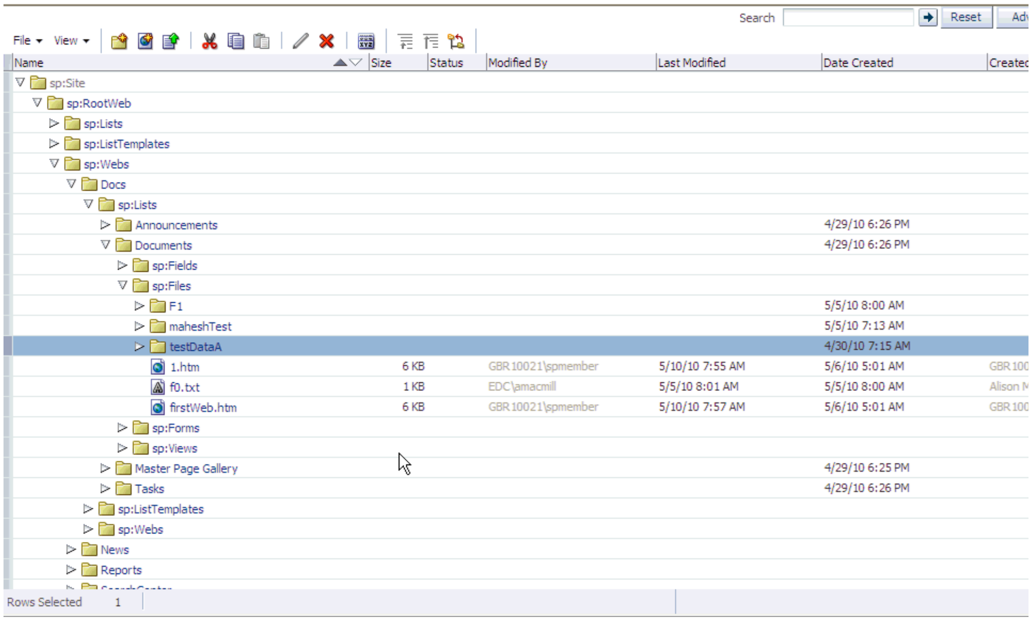


Name	Size	Status	Modified By	Last Modified	Date Created	Cre
Shared Documents					4/27/10 8:33 PM	
A					5/19/10 2:34 AM	
fileA.txt	1 KB		GBR10019\spmember	5/19/10 2:35 AM	5/19/10 2:35 AM	GBR
sp:Forms						
sp:Views						

For the Microsoft Office SharePoint Server (MOSS) 2007 site created during installation, the Documents Center Document Library appears at path: `/sp:Site/sp:RootWeb/sp:Webs/Docs/sp:Lists/Documents/sp:Files`, as shown in Figure 25–6. This path reflects the structure where the Documents Center is a sub-site in the SharePoint main site.

Files are JCR nodes of primary type `nt:file`, and of mix-in type `sp:File`. Folders are JCR nodes of primary type `nt:folder` and of mix-in type `sp:Folder`. The `sp:` mix-ins are similar to `nt:unstructured` in their definitions.

Figure 25–6 The Documents Center Document Library Path for MOSS 2007 Site



Name	Size	Status	Modified By	Last Modified	Date Created	Createc
sp:Site						
sp:RootWeb						
sp:Lists						
sp:ListTemplates						
sp:Webs						
Docs						
sp:Lists						
Announcements					4/29/10 6:26 PM	
Documents					4/29/10 6:26 PM	
sp:Fields						
sp:Files						
F1					5/5/10 8:00 AM	
maheshTest					5/5/10 7:13 AM	
testDataA					4/30/10 7:15 AM	
1.htm	6 KB		GBR10021\spmember	5/10/10 7:55 AM	5/6/10 5:01 AM	GBR100
f0.txt	1 KB		EDC\amacmill	5/5/10 8:01 AM	5/5/10 8:00 AM	Alison M
firstWeb.htm	6 KB		GBR10021\spmember	5/10/10 7:57 AM	5/6/10 5:01 AM	GBR100
sp:Forms						
sp:Views						
Master Page Gallery					4/29/10 6:25 PM	
Tasks					4/29/10 6:26 PM	
sp:ListTemplates						
sp:Webs						
News						
Reports						

Rows Selected 1

25.2.4 Creating a Content Repository Connection Based on the File System Adapter

This section describes the procedure to create a content repository connection based on the file system adapter. The File System adapter is intended to be used in development environments only.

To create a File System repository connection:

1. In Oracle JDeveloper, open your Portal Framework application.
2. In the Application Resources panel, right-click **Connections** and choose **New Connection** and then **Content Repository**.
3. In the Create Content Repository Connection dialog, enter a name for the connection; for example, `MyConnection`.

Tip: You can choose between creating application-specific connections in the Application Resources panel and creating common connections in the Resource Palette (IDE Connections).

4. Select **File System** from the **Repository Type** box.
5. Select **Set as primary connection for Documents** to make this connection the primary (default) connection for all content management operations through the documents tool or Content Presenter. Selecting this option writes a configuration to the `adf-config.xml` file that identifies this connection as the default connection. If `connectionName` parameter is specified for a documents task flow, that value overrides this setting.

Note: To be able to set a connection as primary (default) connection for documents, you must select the **Application Resources** option in **Create Connection In**. This is because connections created as IDE connections cannot be used directly, they must be added to applications.

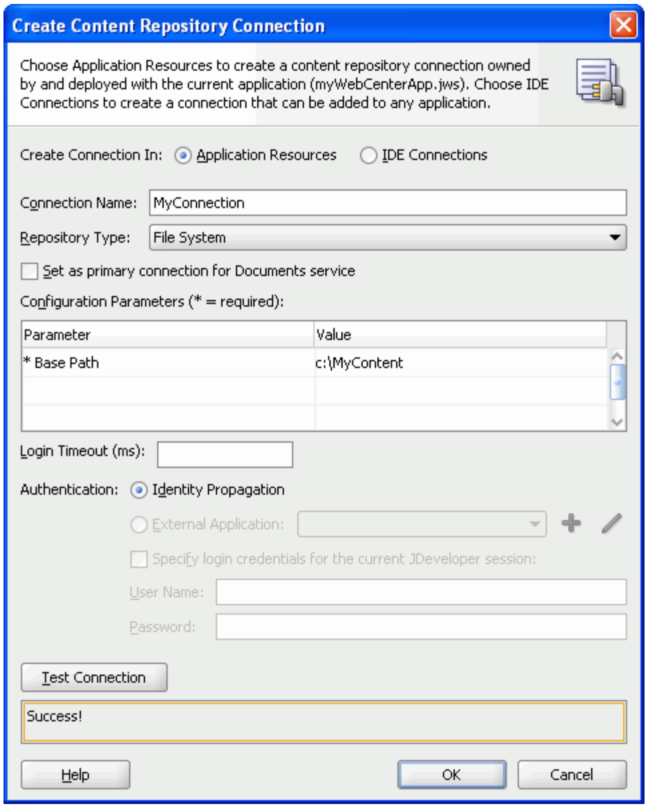
6. Under **Configuration Parameters**, select the **Base Path** row, and enter the path to the folder in which your content is placed, for example, `C:\MyContent`.

Note: The following must be considered while creating a file system connection:

- The base path value is used as the root (`"/"`) for the file system-based data control in Section 26.5, "Integrating Content Using Content Data Controls."
- When you work on a Unix system, the File System adapter inherits the case-sensitive file name characteristic of Unix systems. So, on Unix systems, you must ensure that references to files follow the same case as that used in the original file names. For example, suppose the `Test.html` file was created on a Microsoft Windows system. When you reference this file on a Linux system, you must ensure that you use `Test.html`, and not, for example, `test.html` or `TEST.html`.

7. Leave the **Login Timeout (ms)** field blank.
8. Click **Test Connection** to check whether you have entered the connection details correctly. You should see a `Success!` status, as shown in Figure 25–7.

Figure 25–7 File System Connection



Create Content Repository Connection

Choose Application Resources to create a content repository connection owned by and deployed with the current application (myWebCenterApp.jws). Choose IDE Connections to create a connection that can be added to any application.

Create Connection In: ● Application Resources ○ IDE Connections

Connection Name: MyConnection

Repository Type: File System

□ Set as primary connection for Documents service

Configuration Parameters (* = required):

Parameter	Value
* Base Path	c:\MyContent

Login Timeout (ms):

Authentication: ● Identity Propagation

○ External Application:

□ Specify login credentials for the current JDeveloper session:

User Name:

Password:

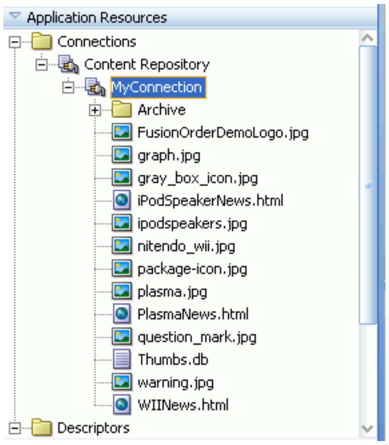
Success!

9. Click **OK**.
10. In the Application Resources panel, expand the repository connection you just created.

25.2.5 What Happens When You Create a Repository Connection

When you create a connection to a repository, the contents in the main directory of the repository display under the Content Repository connection in the Application Resources panel, as shown in Figure 25–8. You can double-click folders and files to view them.

Figure 25–8 Application Resources



```
Application Resources
Connections
  Content Repository
    MyConnection
      Archive
      FusionOrderDemoLogo.jpg
      graph.jpg
      gray_box_icon.jpg
      iPodSpeakerNews.html
      ipodspeakers.jpg
      nitendo_wii.jpg
      package-icon.jpg
      plasma.jpg
      PlasmaNews.html
      question_mark.jpg
      Thumbs.db
      warning.jpg
      WIINews.html
Descriptors
```

You can use repository connections to create JCR data controls that enable integration of the repository content with JSF pages. See Section 26.2, "Configuring Content Data Controls for JCR Adapters" and Section 26.5, "Integrating Content Using Content Data Controls" for information. These connections can also be consumed through the documents tool and Content Presenter task flows. See Chapter 28, "Integrating Documents" for information.

25.2.6 About Creating a Repository Connection

This section includes:

- Section 25.2.6.1, "About Using Identity Propagation and External Application Authentication Methods"
- Section 25.2.6.2, "About Oracle Portal"
- Section 25.2.6.3, "About Oracle WebCenter Adapter for SharePoint"

25.2.6.1 About Using Identity Propagation and External Application Authentication Methods

The Create Content Repository Connection dialog provides the following options for authentication methods:

- **Identity Propagation**: If you select this option, no credentials are passed to the repository. The repository connector instead uses the current user's identity as determined from the Java security context. This must only be used when the application and the repository use the same identity store to authenticate users.

  To apply this authentication method, it is best to configure security for your application using the Configure ADF Security wizard since repositories may support only authenticated users or provide only limited access to the public or guest user. See Section 26.4, "Securing a Content Repository Data Control".

- **External Application**: The External Application method can be used in all other cases where the current user identity should not be propagated directly to the repository. For more information, see Section 74.13, "Working with External Applications" and Section 28.3, "Setting Security for the Documents Tool."

  External applications allow different types of credentials to be associated with a connection:

  – Public credentials are used whenever an application is not secured, or the user has not yet logged in.

  – Shared credentials are used for any authenticated user.

  – If shared credentials are not specified, then mapped credentials can be used to obtain a result similar to identity propagation when the application and content repository do not use the same user store. In that case the external application service provides runtime screens through which users can provide their credentials for accessing the content repository. Those credentials are securely stored and used for any future connection that this user tries to establish.

  If you intend to configure external applications, then click **New** to launch the Register External Application wizard and do the following:

  a. Specify name of the external application.

  b. In the **Login URL** field, enter the URL of the external application; for example, `http://content-server.mycompany.com/idc/`

Note: This URL is optional and is required only to provide *click through login* to the content repository's own user interface. See the external application documentation for more information on how to configure click through login.

c. Then, under **Authentication Details**, select **Basic** from the list. Leave the fields under **Login Details** blank.

   This option is selected when *click through login* is not required. If *click through login* is enabled, then you must select another option based on the authentication method used in the repository.

d. Accept the default values and click **Next**.

e. Enter shared credentials that can be used at design time and runtime. Do not specify shared credentials, if users must specify their own credentials.

f. Enter public credentials that can be used at design time and runtime. Specify public credentials only if you intend public users to view documents or contents.

g. Click **Finish**.

25.2.6.2 About Oracle Portal

The following should be considered while using the Oracle Portal adapter:

- To use Oracle Portal-based content data control capabilities, you can install Oracle Portal release 10.1.4.1, 10.1.4.2, or 11.1.1.0.0 provided that the appropriate patches have been applied. Consult Oracle Application Server Release Notes for Microsoft Windows (for the required platform) for release 11.1.1.0.0 for the exact patches to be applied.
- Only `file`, `image`, `imagemap`, and `text` item types and custom types based on these item types are supported.
- The `portal:container` page type and its extensions are supported.
- Content is always exposed in the default language of the page group. For example, if there are three page groups with different default languages, then the content displays only for those default languages and not for any translations that exist.

25.2.6.3 About Oracle WebCenter Adapter for SharePoint

Consider the following while configuring and using Oracle WebCenter Adapter for SharePoint:

- The adapter does not support connecting to a Microsoft SharePoint repository configured to allow `anonymous` access.
- There should be a fast network connection between the application server instance on which the adapter is running and the Microsoft SharePoint repository.
- **Microsoft SharePoint versions**: Oracle WebCenter Portal supports the following Microsoft SharePoint versions:
  – Microsoft Office SharePoint Server (MOSS) 2007 SP2
  – Microsoft Windows SharePoint Services (WSS) version 3 SP2
- **Versioning Settings**: Oracle WebCenter Portal supports the following Microsoft SharePoint 2007 Document Library versioning settings:

  - Require Check Out : No
  - Content Approval : No
  - Document Version History : No versioning

  The adapter does not function correctly if any other Versioning Settings are configured. For example, upload operations fails if `Require CheckOut` is set to `yes`. If document version history or content approval are enabled, new versions or documents have restricted visibility.

- **Session-Based Memory Cache**: For performance reasons, Oracle WebCenter Adapter for SharePoint maintains a session-based memory cache. A Portal Framework application, which uses this adapter, must configure an `Http Session time-out` in the application's `web.xml` file to ensure that any unused sessions are closed, and the adapter memory cache is released.
- **Mapping**: The mapping takes into account only those content artifacts and services, which are relevant and defined in the JCR API. Additionally, the adapter maps the content and services to the extent supported by native SharePoint Web services, as the adapter does not rely on custom additional server-side components. Consequently:
  - Full text search only returns items that are indexed by the SharePoint server.
  - Set of searchable columns is limited.
  - A fixed set of node types is supported in searches.
  - Some searches require additional network round trip as the adapter does not receive the full information necessary to map results to JCR from the Web services.

  The adapter exposes content from a Microsoft SharePoint server in a hierarchical way, which is similar to the way in which the content is exposed by the native Web interface. The items of the hierarchy have a primary type of either `nt:folder`, `nt:file`, or a combination of these. Additional SharePoint-specific characteristics are in some instances added as mix-ins (that is, `sp:Folder`, `sp:File`, and so on). The SharePoint-specific namespace, which is identified by the `sp` prefix in these examples, is used for items controlled by the SharePoint server. Items controlled by the user (Webs, documents, list items, and the like) are in the default namespace. The adapter allows write access to SharePoint document libraries. That is, it allows folders and files to be created within document libraries in correspondence with creating folders or uploading files to the native SharePoint Web interface. Examples that demonstrate this hierarchical mapping are described in the following list item.
- **Site Structure**: The structure mapping of a SharePoint site is as follows:
  - `/sp:Site`: The root element of the site.
  - `/sp:Site/sp:RootWeb`: The root Web element.
  - `/sp:Site/sp:RootWeb/sp:Lists`: The path to the root of all lists in the site.
  - `/sp:Site/sp:RootWeb/sp:Lists/Shared Documents/sp:Files`: The path to the start of the file and folder hierarchy within a document library. In this example, the Shared Documents library is shown. All site document libraries are mapped under `/sp:Site/sp:RootWeb/sp:Lists`, each mapped by their own document library name.
  - `/sp:Site/sp:RootWeb/sp:Lists/Shared Documents/sp:Files/myFiles`: An example of a folder within the sites Shared Documents document library.

  - /sp:Site/sp:RootWeb/sp:Webs/mySubSite: A site's subsites are all mapped under /sp:Site/sp:RootWeb/sp:Webs. This example shows the path to a subsite named mySubSite. The sub-site may itself contain Document Libraries.
  - The adapter does not support the write access to a SharePoint Document Library with settings that require one or more mandatory SharePoint columns.

- **Search and indexing**:
  - **JCR and native Microsoft SharePoint search**: The Oracle WebCenter Adapter for SharePoint uses the native SharePoint search Web service to evaluate JCR queries. Features present in JCR 1.0 but not available in the SharePoint search service are usually ignored.
  - **Indexed items**: The native search finds only those items that are indexed by the Microsoft SharePoint server. Other items that may match the query criteria are ignored. By default, SharePoint Services 2007 is configured for search and full-text indexing of a limited set of document types. For more information, and information on how to enable search and indexing in more complex deployments, see Microsoft documentation.
  - **LIKE limit**: The SharePoint native query language uses a LIKE keyword that the adapter uses to constrain queries by URLs (document paths) that match a pattern. The native LIKE operator supports a pattern match on strings up to 64 characters. Therefore, the Oracle WebCenter Adapter for SharePoint applies a client-side filtering on result sets to ensure that the correct constraint on URL is applied. The adapter's LIKE limit parameter controls this feature, and if this limit is not set, it defaults to applying a 64 character limit. The parameter can be set to 0 to disable client-side filtering. The parameter can also be set to some other positive value to apply a different character limit. However, this limit can only be increased if the SharePoint instance supports LIKE tests on URLs greater than 64 characters.
  - **Creation and Modification timestamps**: When displaying the contents of a SharePoint Document Library, the adapter reports the Creation and Modification timestamps as the times that the document was created on or last updated in the library. In the case of some document types, for example Microsoft Office documents, the native SharePoint search evaluates against the document metadata stored within each document. This can be different from the times when the document was uploaded or updated in the Document Library, and therefore, it appears to give misleading search results.
  - **Combining search keywords**: The adapter does not support combining search keywords in an OR expression.
  - **Search by Last Modifier**: The adapter does not support search by Last Modifier.
  - **Search by Creator:** The value provided for the task flow should have values in the form GBR10021\\spmember rather than GBR10021\spmember, as the latter will result in an IllegalState exception and the page will not load.
  - **Supported JCR search operators and properties**: The adapter supports the following:
    - Relational operators for comparison: =, >=, >, <=, <, LIKE, <>, IS NULL, IS NOT NULL. Predicates, descendants, and self operators (//) are supported on the last location step.

- * Properties for comparison: `Size`, `Author`, `Modified`, `URL`, `Title`, `IsDocument`, `ContentClass`, `SiteName`, Description, `FileName`, `jcr:data`, `jcr:mimeType`, `jcr:created`, `jcr:lastModified`.

25.3 Editing Content Repository Connections

This section describes how you can edit a common or an application-specific content repository connection. This section includes the following subsections:

- Section 25.3.1, "How to Edit a Common Repository Connection"
- Section 25.3.2, "Editing a Framework Application-Specific Content Repository Connection"

25.3.1 How to Edit a Common Repository Connection

Common repository connections (IDE connections) are created and edited under the Resource Palette.

To edit a common repository connection:

1. Under the Resource Palette, right-click the repository connection you intend to edit and choose **Properties**, as shown in Figure 25–9. The Edit Repository Connection dialog displays, as shown in Figure 25–10.

Figure 25–9 Resource Palette - Properties

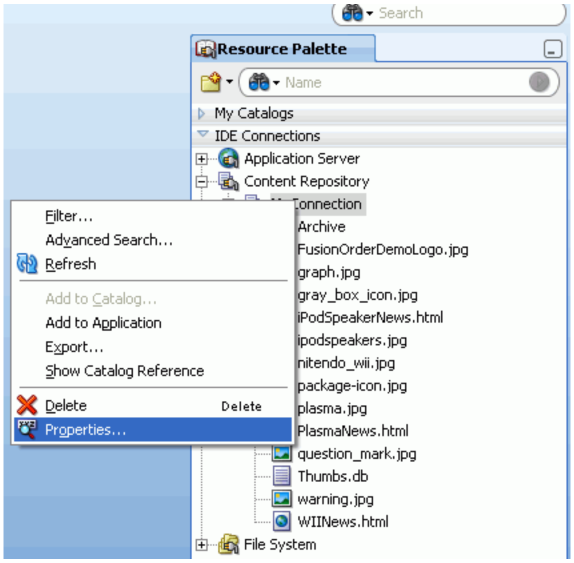
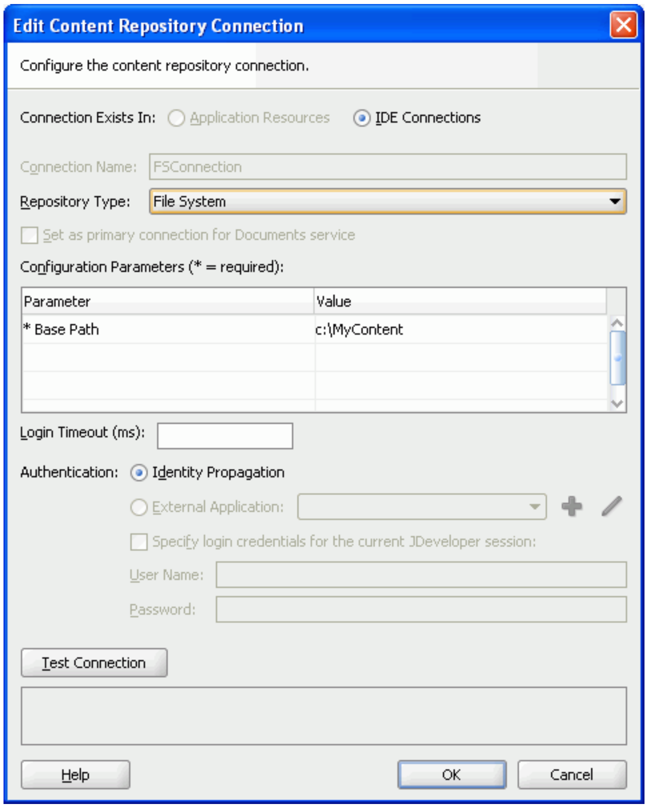


Figure 25–10 Edit Content Repository Connection



Edit Content Repository Connection

Configure the content repository connection.

Connection Exists In: ○ Application Resources ● IDE Connections

Connection Name: FSConnection

Repository Type: File System

□ Set as primary connection for Documents service

Configuration Parameters (* = required):

Parameter	Value
* Base Path	c:\MyContent

Login Timeout (ms):

Authentication: ● Identity Propagation

○ External Application:

□ Specify login credentials for the current JDeveloper session:

User Name:

Password:

2. Change the appropriate parameters.
3. Test the connection and click **OK**.

25.3.2 Editing a Framework Application-Specific Content Repository Connection

Application-specific content repository connections exist under the Application Resources panel.

To edit a Portal Framework application-specific content repository connection:

1. In the Application Resources panel, right-click the connection you intend to edit, and choose **Properties**, as shown in Figure 25–11. The Edit Content Repository Connection dialog displays, as shown in Figure 25–12.

Figure 25–11 Application Resources - Properties

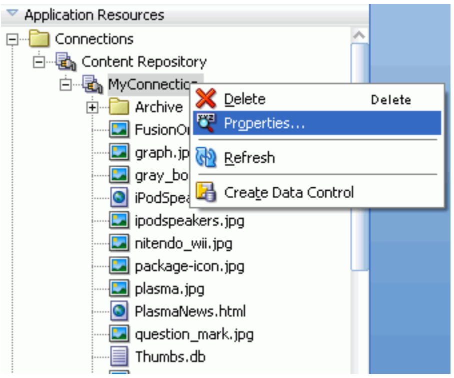
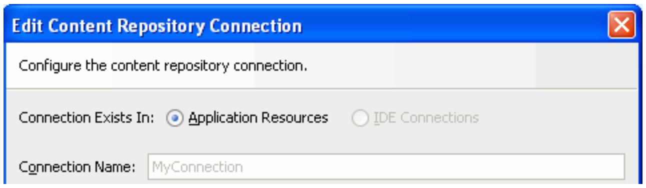


Figure 25–12 Edit Content Repository Connection



Edit Content Repository Connection

Configure the content repository connection.

Connection Exists In: ● Application Resources ○ IDE Connections

Connection Name: MyConnection

2. Change the appropriate parameters. Depending on the repository type, see the earlier sections that describe how to create repository connections. For example, for Content Server, see Section 25.2.1, "Creating a Content Repository Connection Based on the Oracle Content Server Adapter."

3. Test the connection and click **OK**.

25.4 Using an Existing Repository Connection for a New Portal Framework Application

You can use an existing repository connection for any Portal Framework application if you created it as a common repository under the Resource Palette.

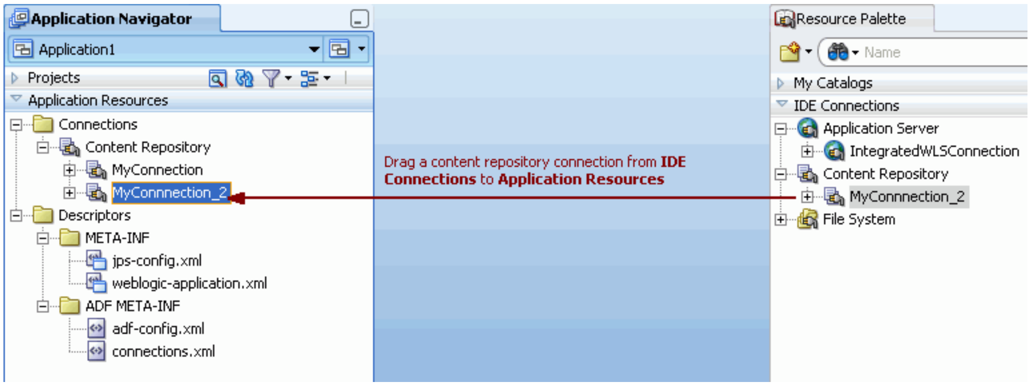
To use an existing repository connection:

1. In Oracle JDeveloper, open the Portal Framework application for which you intend to use an existing repository connection.

2. Go to the Resource Palette and select the repository connection that you intend to use for a new application, for example `MyConnection_2`, and drop it under the Application Resources panel of the new application, as shown in Figure 25–13.

> **Tip:** Alternatively, right-click the connection and choose **Add to Application**. The connection is displayed under the Application Resources panel.

Figure 25–13 Dragging an Existing Common Repository Connection (IDE Connection) to an Application



You can now configure a data control for your new application from this repository connection, as described in Section 26.2, "Configuring Content Data Controls for JCR Adapters".

26 Working with Content Data Controls

This chapter describes how to use JCR data controls to access content such as documents and relational content.

The JCR API enables independent access to content, regardless of the underlying repository or the type of the content. The JCR 1.0 API, as defined in JSR 170, provides a set of basic capabilities for reading, writing, browsing, and searching content. The JCR data controls also enable you to connect to and read from other JCR 1.0 repositories. To add content available in Content Server, Oracle Portal, Oracle WebCenter Adapter for SharePoint, and file systems to JSF pages, you first create connections to the repositories, then use the connections to create data controls based on the repositories. For more information, see Chapter 24, "Introduction to Integrating and Publishing Content."

This chapter includes the following sections:

- Section 26.1, "Overview of Content Data Controls"
- Section 26.2, "Configuring Content Data Controls for JCR Adapters"
- Section 26.3, "Editing Content Repository Data Controls"
- Section 26.4, "Securing a Content Repository Data Control"
- Section 26.5, "Integrating Content Using Content Data Controls"

26.1 Overview of Content Data Controls

A content data control is a container for all the data objects, collections, methods, and operations used to create user interface (UI) components within your Portal Framework application. The data controls provide you with easy-to-use methods that you can drag and drop onto JSF pages to publish content as ADF components, such as URLs, files, and folders. While methods, parameters, and default attributes to publish content are similar across all JCR data controls, the content integration module gives you the flexibility to customize attributes based on your requirements.

Each type of content data control contains methods and parameters to publish content as links, tables, files, and folders, and to add search and advanced search capabilities for your content. Parameters include two types of attributes: default and custom. The default attributes are common across data controls based on File System, Oracle Portal, Oracle WebCenter Content: Content Server, and Oracle WebCenter Adapter for SharePoint. The custom attributes are repository-specific and can be added while creating content data controls.

The following sections describe the methods, parameters, and default attributes that are common across data controls based on File System, Oracle Portal, Content Server, and Oracle WebCenter Adapter for SharePoint:

- Section 26.1.1, "getItems Method"
- Section 26.1.2, "search Method"
- Section 26.1.3, "advancedSearch Method"
- Section 26.1.4, "getURI Method"
- Section 26.1.5, "getAttributes Method"

26.1.1 getItems Method

The getItems method returns the files and folders stored starting at a particular location in the repository. This method enables you to publish content in forms, tables, and hierarchical trees. Using this method, you can also create navigation lists and buttons.

Table 26–1 describes the parameters of the getItems method.

Table 26–1 Parameters of the getItems Method

Parameter	Description
path	Defines the starting point for getItems.
type	Specifies what should be returned: only files, only folders, or any object.

The getItems method returns the attributes described in Table 26–2.

Table 26–2 Return Attributes of the getItems Method

Parameter	Description
icon16	Provides a URI to the icon that documents use for an item.
icon32	Provides a URI to the icon that documents use for an item.
ID	Parameter to document task flows that require an ID.
lastModified	Describes the last modified date of an item.
name	Describes the name of the returned file or folder.
path	Describes the location of the returned file or folder within the content repository.
URI	The direct access URL of a file or folder.
primaryType	Describes whether the returned object is a file or folder or some other type.

26.1.2 search Method

The search method enables you to create a simple search by name pattern or keyword.

Table 26–3 describes the parameters of the search method.

Table 26–3 Parameters of the search Method

Parameter	Description
path	Starting path of the search.

Table 26–3 (Cont.) Parameters of the search Method

Parameter	Description
isRecursive	Specifies whether only the specified folder (=false) or the whole tree starting at the specified path (=true) should be searched. The default value is false, that is, if this field is left blank, then the search is performed in the specified folder. Only if the value is true, the search is performed in the entire hierarchy.
keyword	Search keyword for full text search.
namePattern	Pattern search on name. Use the % wildcard to match any number of characters and the _ wildcard to match one character.

The search method returns the attributes described in Table 26–4.

Table 26–4 Return Attributes of the search Method

Parameter	Description
icon16	Provides a URI to the icon that documents use for an item.
icon32	Provides a URI to the icon that documents use for an item.
ID	Parameter to the document task flows that require an ID.
lastModified	Describes the last modified date of an item.
name	Describes the name of the returned file or folder.
path	Describes the location of the returned file or folder within the content repository.
URI	The direct access URL of a file or folder.
primaryType	Describes whether the returned object is a file or folder or some other type.

26.1.3 advancedSearch Method

The advancedSearch method enables you to perform an advanced search by creating a set of search criteria out of any available attribute.

Table 26–5 describes the parameters of the advancedSearch method.

Table 26–5 Parameters of the advancedSearch Method

Parameter	Description
path	Starting path of the search.
isRecursive	Specifies whether only the specified folder (=false) or the whole tree starting at the specified path (=true) should be searched. The default value is false, that is, if this field is left blank, then the search is performed in the specified folder. Only if the value is true, the search is performed in the entire hierarchy.
keyword	Search keyword for full text search.
namePattern	Pattern search on name. Use the % wildcard to match any number of characters and the _ wildcard to match one character.
matchAny	Specifies whether all predicates (=false) or any predicate (=true) should be matched.
predicates	A collection of SimplePredicate parameters that consist of attributes, comparators, and values.

Table 26–5 (Cont.) Parameters of the advancedSearch Method

Parameter	Description
`type`	Specifies what should be returned: only files, only folders, or any object.

The `advancedSearch` method returns the attributes described in Table 26–6.

Table 26–6 Return Attributes of the advancedSearch Method

Parameter	Description
`icon16`	Provides a URI to the icon that documents use for an item.
`icon32`	Provides a URI to the icon that documents use for an item.
`ID`	Parameter to the document task flows that require an ID.
`lastModified`	Describes the last modified date of an item.
`name`	Describes the name of the returned file or folder.
`path`	Describes the location of the returned file or folder within the content repository.
`URI`	The direct access URL of a file or folder.
`primaryType`	Describes whether the returned object is a file or folder or some other type.

26.1.4 getURI Method

The `getURI` method returns the URI attribute, which is the direct access URL of the file or folder. Its `path` parameter describes the path to the object. You can use this method to create links to content and to inline content in your page. The `getURI` method returns the `URI` attribute.

26.1.5 getAttributes Method

The `getAttributes` method returns the list of attributes and their values for a given file or folder. Its `path` parameter describes the path to the object.

Table 26–7 describes the attributes that the `getAttributes` method returns.

Table 26–7 Return Attributes of the getAttributes Method

Parameter	Description
`name`	Name of the attribute.
`value`	Value of the attribute.

26.2 Configuring Content Data Controls for JCR Adapters

This section describes how to create a content data control based on a content repository connection:

- Section 26.2.1, "Configuring a Content Repository Data Control"
- Section 26.2.2, "What Happens When You Configure a Content Repository Data Control"

26.2.1 Configuring a Content Repository Data Control

The procedure to create content repository data controls is the same regardless of the types of connections used to create data controls. If you have not created a connection to your content repository, then see Section 25.2, "Configuring Content Repository Connections." In this section, a content data control is created using a Content Server-based connection.

To create a content data control using an existing content repository connection:

1. In the Application Navigator, select the **Portal** project, in which the project entries for the new data control should be created.

   You must do this to ensure that the data control definition is separate from the data control usage. When you select the **Portal** project, data control definition files are created in its sub folder, **Application Sources** and not in the **ViewController** project in which the user interface is created.

2. In the Application Resources panel, expand the **Connections** folder in which you created the repository connection.

3. Drag the repository connection that you intend to use for the new data control and drop it into the Data Controls panel.

   Alternatively, from the **File** menu, choose **New**. In the New Gallery, expand **Business Tier**, select **Content Repository** and then **Content Repository Data Control**, and click **OK**.

   The Create Content Repository Data Control dialog displays with the name of the connection selected in the **Connection Name** list.

   > **Note:** If you created your repository connection under the Resource Palette, then right-click the connection under the Resource Palette and choose **Create Data Control**. From the Resource Palette, you can also drag and drop the required connection onto the Data Controls panel.
   >
   > To add a new connection, click the **Create new content repository connection** icon to display the Create Content Repository Connection dialog. For more information, see Section 25.2, "Configuring Content Repository Connections".

4. In the **Data Control Name** field, enter a name for your data control, for example `MyDataControl`.

5. To add custom attributes, click **Add**. Then, enter a name for the attribute as it should appear in the Data Controls panel, select its type, and enter the JCR path.

   In Content Server, a metadata attribute named `dPropertyName` is mapped in the adapter as shown here:

   ```
   jcr:content/idc:metadata/idc:dPropertyName
   ```

   For example, if the property name is `dWorkflowState`, then it is mapped as `jcr:content/idc:metadata/idc:dWorkflowState`.

   In Oracle Portal, a metadata attribute is mapped in the adapter as shown here:

   ```
   portal:name of the attribute in Oracle Portal
   ```

Note: To retrieve the JCR paths of item attributes, run the `getAttributes` method on the required items. Then reenter the wizard to include those paths by right-clicking the respective data control in the Data Controls panel and choosing **Edit Definition**.

---

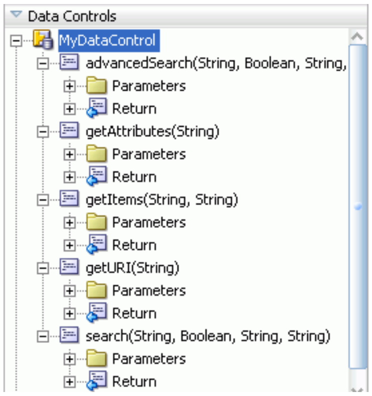
6. Click **OK**.

Note: The data controls include the predefined node types of JCR. These basic node types represent folders (`nt:folder`) and files (`nt:file`). These are derived from `nt:hierarchyNode`, which is a child of the `nt:base` supertype. Additional node types can be derived from the basic types to customize the experience to a particular repository.

26.2.2 What Happens When You Configure a Content Repository Data Control

Once the data control is successfully configured, it appears as a node in the Data Controls panel. You can expand the node to see the hierarchical list of methods, parameters, and operations for the new data control as shown in Figure 26–1. For more information on using the Data Control panel, see the "Using ADF Model in a Fusion Web Application" section in *Fusion Developer's Guide for Oracle Application Development Framework*.

Figure 26–1 Data Controls Panel - Content Server



Data Controls
MyDataControl
advancedSearch(String, Boolean, String,
Parameters
Return
getAttributes(String)
Parameters
Return
getItems(String, String)
Parameters
Return
getURI(String)
Parameters
Return
search(String, Boolean, String, String)
Parameters
Return

Table 26–8 describes the icons and object hierarchy of a data control.

Table 26–8 The Data Controls Panel Icons and Object Hierarchy

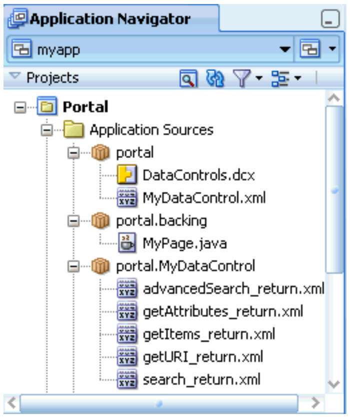
Icon	Name	Description	Usage
	Data Control	Represents a data control. You cannot use the data control itself to create UI components, but you can use any of the child objects listed under it. Depending on how your business services were defined, there may be multiple data controls.	Serves as a container for the other objects, and is not used to create anything
	Method	Represents an operation in the data control or one of its exposed structures that may accept parameters, perform some business logic and optionally return single value, a structure or a collection of those	Command components For methods that accept parameters: command components and parameterized forms
	Method Return	Represents an object that is returned by a custom method. The returned object can be a single value or a collection. A method return appears as a child under the method that returns it. The objects that appear as children under a method return can be attributes of the collection, other methods that perform actions related to the parent collection, and operations that can be performed on the parent collection.	For single values: text fields and selection lists For collections: forms, tables, trees, and range navigation components When a single-value method return is dropped, the method is not invoked automatically by the framework. A user either has to also create an invoke action as an executable, or drop the corresponding method as a button to invoke the method.
XYZ	Attribute	Represents a discrete data element in an object (for example, an attribute in a row). Attributes appear as children under the collections or method returns to which they belong. Only the attributes that were included in the view object are shown under a collection. If a view object joins one or more entity objects, that view object's collection will contain selected attributes from all of the underlying entity objects.	Label, text field, date and selection list components
⚙	Operation	Represents a built-in data control operation that performs actions on the parent object. Data control operations are located in an Operations folder under collections or method returns, and also under the root data control node. The operations that are children of a particular collection or method return operate on those objects only, while operations under the data control node operate on all the objects in the data control. If an operation requires one or more parameters, they are listed in a Parameters folder under the operation.	UI components such as buttons or links
	Parameter	Represents a parameter value that is declared by the method or operation under which it appears. Parameters appear in the Parameters folder under a method or operation.	Label, text, and selection list components

The following files (Figure 26–2) are created under the **Portal** project:

- `DataControls.dcx`: Oracle JDeveloper creates this file the first time a data control is created. This file lists all the Oracle ADF data controls created under the current project. This file is required to initialize the data control.
- *`datacontrolname`*`.xml`: This file includes attributes, accessors, and operations of a data control.

- `advancedSearch_return.xml`: This file includes the return type definition for the `advancedSearch` method.
- `getAttributes_return.xml`: This file includes the return type definition for the `getAttributes` method.
- `getItems_return.xml`: This file includes the return type definition for the `getItems` method.
- `getURI_return.xml`: This file includes the return type definition for the `getURI` method.
- `search_return.xml`: This file includes the return type definition for the `search` method.
- `Return.xml`: This file defines the standard operations on collections.

Figure 26–2 Projects Panel - Portal Project



26.3 Editing Content Repository Data Controls

This section describes a generic procedure to edit content data controls that you configured as described in Section 26.2, "Configuring Content Data Controls for JCR Adapters."

To edit a content data control:

1. In Oracle JDeveloper, go to the application that contains your content data control.
2. Under Data Controls panel, right-click the data control you intend to edit, and choose **Edit Definition**, as shown in Figure 26–3. The Edit Content Repository Data Control dialog displays, as shown in Figure 26–4.

Figure 26–3 Edit Data Controls

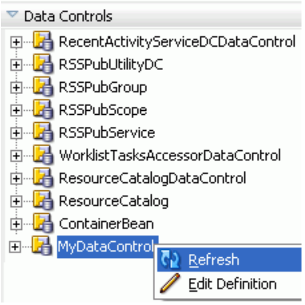
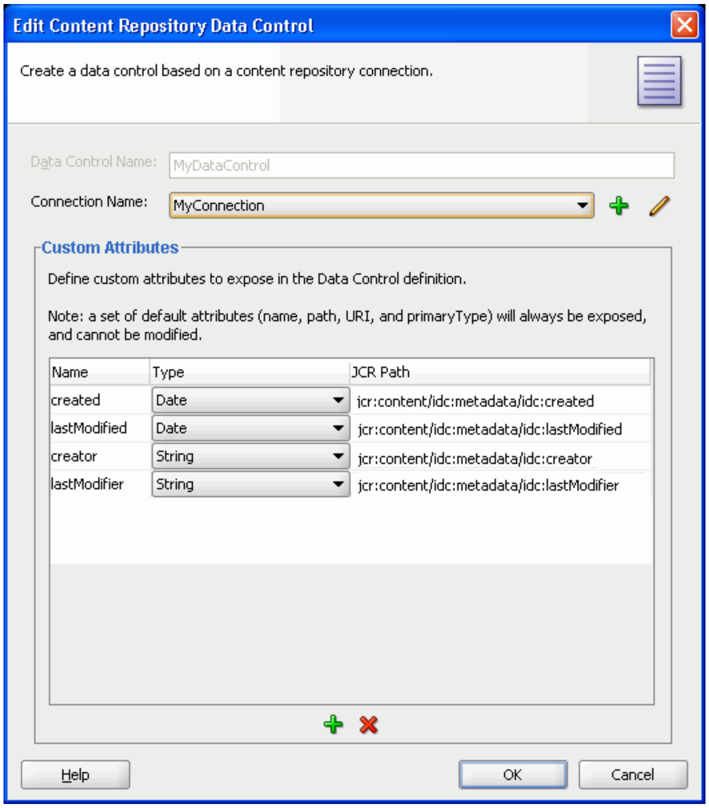


Figure 26–4 Edit Content Repository Data Control Dialog



Edit Content Repository Data Control

Create a data control based on a content repository connection.

Data Control Name: MyDataControl

Connection Name: MyConnection

Custom Attributes

Define custom attributes to expose in the Data Control definition.

Note: a set of default attributes (name, path, URI, and primaryType) will always be exposed, and cannot be modified.

Name	Type	JCR Path
created	Date	jcr:content/idc:metadata/idc:created
lastModified	Date	jcr:content/idc:metadata/idc:lastModified
creator	String	jcr:content/idc:metadata/idc:creator
lastModifier	String	jcr:content/idc:metadata/idc:lastModifier

3. To select a different connection, use the **Connection Name** list.

4. To add a connection, click the **Create new content repository connection** icon to display the Create Content Repository Connection dialog. Refer to Section 25.2, "Configuring Content Repository Connections" for information about the configuration parameters specific to the connection type you intend to create.

5. To edit an existing connection, click the **Edit selected content repository connection** icon to display the Edit Content Repository Connection dialog. Depending on the type of connection that you intend to modify, see relevant sections in Section 25.2, "Configuring Content Repository Connections" for information about its configuration parameters.

6. To add or remove custom attributes, use the **Add new attribute** icon and the **Remove selected attribute** icon respectively in the Custom Attributes box.

7. Click **OK** to apply the changes.

26.4 Securing a Content Repository Data Control

You can enable security for your content repository connections. For information, see Chapter 74, "Securing Your WebCenter Portal Framework Application."

26.5 Integrating Content Using Content Data Controls

In this section, you will use `getURI`, `getItems`, `search`, and `advancedSearch` methods of your data control. The basic procedure to use any data control method is to drag and drop it onto a page. When a method is dropped, its ADF Faces tag is added to the source of the page, and the tag is displayed in the Structure window. For example, dropping the URI attribute of getURI as a Go Link adds an af:goLink to the page. The destination of the af:goLink is set to the EL expression #{bindings.URI.inputValue}. This EL expression ties the destination value of the af:goLink to the binding container's URI value.

In the page definition file, methodIterator is added to the executables element, and methodAction is added to the bindings element. The methodIterator and methodAction elements define which data control and method is to be used. The NamedData attribute of the methodAction defines what input parameter values should be provided to this method call. The path and type parameters are common across all data control methods. However, NamedData for search and advancedSearch includes additional parameters that are unique to those methods. For example, in the advancedSearch method, the NamedData can also be used to define the search predicates, whether the search is recursive, and so on.

The page definition includes the AttrNames element, which defines the attributes of the items available in the bindings container to ADF. These items are based on default attributes and custom attributes that were defined when creating the data control.

For detailed information on using the Data Control panel and working with page definition files, see the "Using ADF Model in a Fusion Web Application" chapter in *Fusion Developer's Guide for Oracle Application Development Framework*.

The examples in this section use the following data control methods:

- getURI to add textual and clickable image links to the repository folder.
- getItems to publish the repository content in an ADF table and tree.
- search and advancedSearch to display those items of the repository that match the search criteria.

This section includes the following subsections:

- Section 26.5.1, "Publishing Content As Links"
- Section 26.5.2, "What Happens at Runtime"
- Section 26.5.3, "Publishing Content in a Table"
- Section 26.5.4, "What Happens at Runtime"
- Section 26.5.5, "Publishing Folder Content in a Tree"
- Section 26.5.6, "What Happens at Runtime"
- Section 26.5.7, "Adding Search Capabilities to Content Repositories"
- Section 26.5.8, "What Happens at Runtime"
- Section 26.5.9, "Using Search Capabilities"

26.5.1 Publishing Content As Links

This section describes how to create hyperlinks to files stored in a file system and convert them into textual and image links. You use the **ADF Go Link** and the getURI method to create textual links and the Image of **ADF Faces** to create image links.

This section includes the following procedures:

- Section 26.5.1.1, "Publishing Content As a Textual Link"
- Section 26.5.1.2, "Creating a Clickable Image to Link to a Document"

Before you begin:

1. Configure a repository connection as described in Section 25.2, "Configuring Content Repository Connections."
2. Configure a data control as described in Section 26.2, "Configuring Content Data Controls for JCR Adapters."
3. Create a page as described in Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."

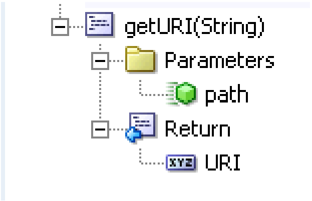
26.5.1.1 Publishing Content As a Textual Link

In this section, you will use the **Oracle ADF Go Link** option of the `getURI` method to publish your content as a textual link. You will also create a link to show a specific item of a repository.

To publish content as a textual link:

1. In the Application Navigator, double-click a page, for example `myPage.jspx`, to open it in the visual editor.
2. In the Data Controls panel, under the repository connection, expand the **getURI (String)** method and expand **Return**. You should see the `URI` attribute, as shown in Figure 26–5.

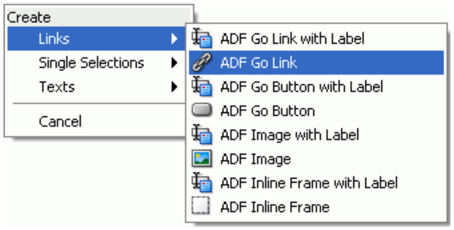
Figure 26–5 The URI Attribute of the getURI Method



3. To create a textual link, select the **URI** attribute and drop it on to the page, or in the Structure window under `af:form`. From the **Create** menu, choose **Links** and then **ADF Go Link**, as shown in Figure 26–6.

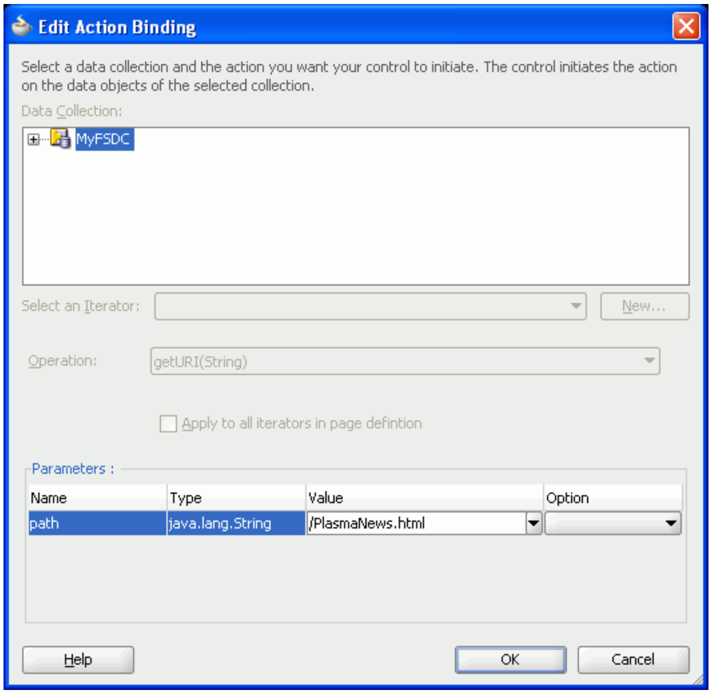
   If this is the first time you have dropped a node onto the page, then the Edit Action Binding dialog displays.

Figure 26–6 Oracle JDeveloper Context Menu for the getURI method



4. In the **Value** field of the **path** parameter, enter the path of the file for which you intend to create the link, as shown in Figure 26–7. You must enter a leading slash (`/`), for example `/PlasmaNews.html`. To modify or delete this path later, click the arrow icon next to the node in design mode and choose **Go to Binding** from the context menu.

Figure 26–7 Edit Action Binding



Edit Action Binding

Select a data collection and the action you want your control to initiate. The control initiates the action on the data objects of the selected collection.

Data Collection:

⊞ MyFSDC

Select an Iterator: | New...

Operation: getURI(String)

□ Apply to all iterators in page defintion

Parameters :

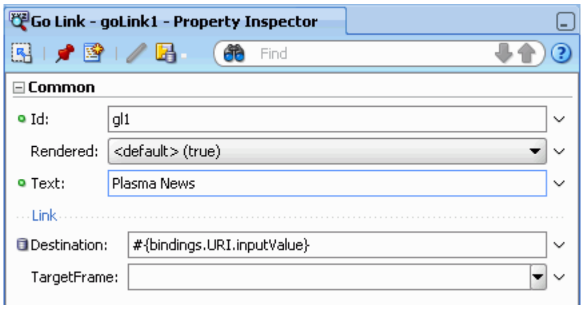
Name	Type	Value	Option
path	java.lang.String	/PlasmaNews.html	

Note: To grant edit, personalize, customize, and view permissions at the attribute level, see Section 26.4, "Securing a Content Repository Data Control".

---

5. Click **OK**.
6. Right-click the page and select **Run**. In your browser, you should see the URL for the file path entered in the Edit Action Binding dialog without any formatting.
7. By default, the link displays the text `goLink1`. In the Structure window, select **af:goLink - goLink1** and view the properties in the Property Inspector.
8. In the **Text** field, enter a name for the link, for example, `Plasma News`, as shown in Figure 26–8.

Figure 26–8 Go Link Properties



Go Link - goLink1 - Property Inspector

⊟ Common

Id: gl1

Rendered: <default> (true)

Text: Plasma News

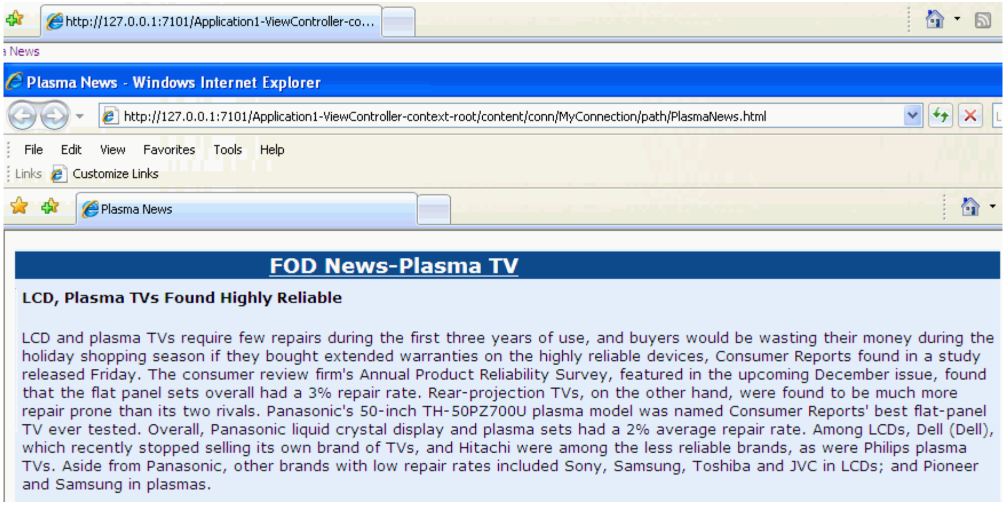
Link

Destination: #{bindings.URI.inputValue}

TargetFrame:

9. Right-click your page and choose **Run**. The page appears in your browser window with the new link, as shown in Figure 26–9.

Figure 26–9 ADF Go Link in a Browser


http://127.0.0.1:7101/Application1-ViewController-co...
News
Plasma News - Windows Internet Explorer
http://127.0.0.1:7101/Application1-ViewController-context-root/content/conn/MyConnection/path/PlasmaNews.html
File
Edit
View
Favorites
Tools
Help
Links
Customize Links
Plasma News

FOD News-Plasma TV

LCD, Plasma TVs Found Highly Reliable

LCD and plasma TVs require few repairs during the first three years of use, and buyers would be wasting their money during the holiday shopping season if they bought extended warranties on the highly reliable devices, Consumer Reports found in a study released Friday. The consumer review firm's Annual Product Reliability Survey, featured in the upcoming December issue, found that the flat panel sets overall had a 3% repair rate. Rear-projection TVs, on the other hand, were found to be much more repair prone than its two rivals. Panasonic's 50-inch TH-50PZ700U plasma model was named Consumer Reports' best flat-panel TV ever tested. Overall, Panasonic liquid crystal display and plasma sets had a 2% average repair rate. Among LCDs, Dell (Dell), which recently stopped selling its own brand of TVs, and Hitachi were among the less reliable brands, as were Philips plasma TVs. Aside from Panasonic, other brands with low repair rates included Sony, Samsung, Toshiba and JVC in LCDs; and Pioneer and Samsung in plasmas.

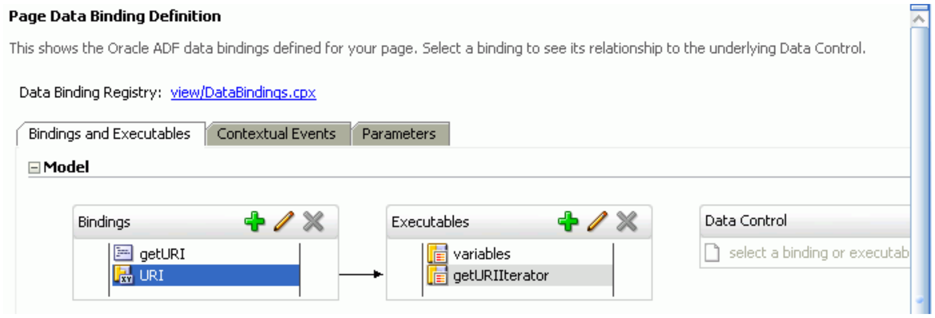
10. Click the link to check that the correct file is displayed.

In Section 26.5.1.2, "Creating a Clickable Image to Link to a Document", you will extend this textual link into an image link.

To add a link to another item, in the same JSF page:

1. In the Application Navigator, right-click the page in which you created the ADF Go Link, and choose **Go to Page Definition**. The Page Data Binding Definition displays in the design view, as shown in Figure 26–10.

Figure 26–10 Page Data Binding Definition


Page Data Binding Definition

This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relationship to the underlying Data Control.

Data Binding Registry: view/DataBindings.cpx

2. Go to the source view of the page definition.

3. In the executables element, add another methodIterator and change the methodIterator id and value of Binds, as shown in **Bold** in the following example:

```
<executables>
  <variableIterator id="variables"/>
  <methodIterator Binds="getURI.result" DataControl="MyDataControl"
     RangeSize="25" BeanClass="portal.MyDataControl.getURI_return"
     id="getURIIterator"/>
  <methodIterator Binds="getURI1.result" DataControl="MyDataControl"
    RangeSize="25" BeanClass="portal.MyDataControl.getURI_return"
    id="getURIIterator1"/>
  </executables>
```

4. In the `Bindings` element, add another `methodAction` and change the `methodAction` `id`, `ReturnName`, and `NDValue`, as shown in **Bold** in the following example:

```
<methodAction id="getURI"
  RequiresUpdateModel=true Action="invokeMethod" MethodName="getURI"
  IsViewObjectMethod="false" DataControl="MyDataControl"
  InstanceName="MyDataControl"
  ReturnName="MyDataControl.methodResults.getURI_MyDataControl_getURI_result">
  <NamedData NDName="path" NDValue="/PlasmaNews.html"
    NDType="java.lang.String"/>
</methodAction>
<methodAction id="getURI1"
  RequiresUpdateModel="true" Action="invokeMethod" MethodName="getURI"
  IsViewObjectMethod="false" DataControl="MyDataControl"
  InstanceName="MyDataControl"
  ReturnName="MyDataControl.methodResults.getURI_MyDataControl_getURI1_result">
  <NamedData NDName="path" NDValue="/FusionOrderDemoLogo.jpg"
    NDType="java.lang.String"/>
</methodAction>
```

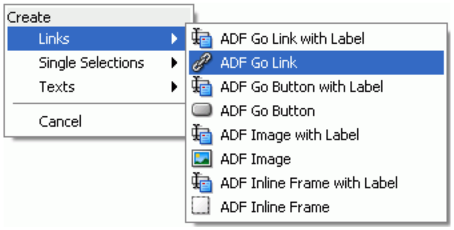
5. In the `Bindings` element, add another `attributeValues` tag to specify the new Id, as shown in **bold** in the following example:

```
<attributeValues
      IterBinding="getURIIterator"
      id="URI">
   <AttrNames>
      <Item Value="URI"/>
   </AttrNames>
</attributeValues>
<attributeValues
        IterBinding="getURIIterator1"
        id="URI1">
  <AttrNames>
        <Item Value="URI"/>
  </AttrNames>
</attributeValues>
```

6. In the Data Controls panel, under the repository connection, expand the **getURI (String)** method and expand **Return**. You should see the `URI` attribute.

7. To create a textual link, select the **URI** attribute and drop it on to the page, or in the Structure window under `af:form`. From the **Create** menu, choose **Links** and then **ADF Go Link**, as shown in Figure 26–11.

Figure 26–11 Oracle JDeveloper Context Menu for the getURI method



8. In the Structure window, double-click the new goLink; for example, **af:goLink2** to display the Go Link Properties window.

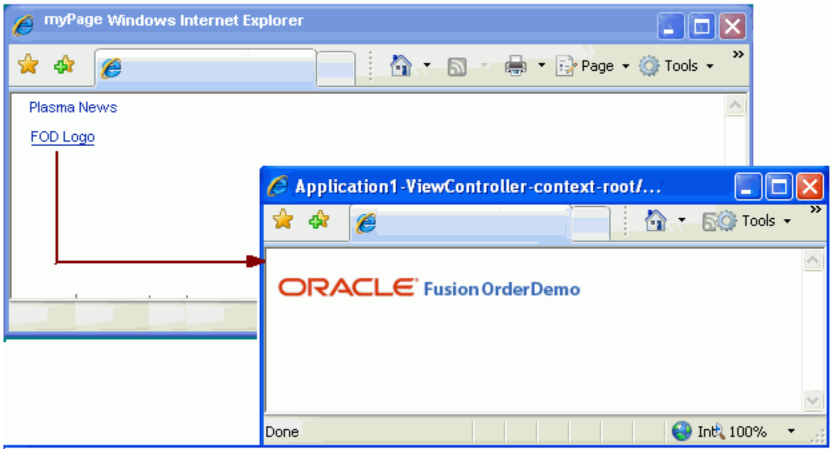
9. In the **Text** field, enter a display name for your new link; for example, `FOD Logo`.

10. In the **Destination** field, click the down arrow to display the Expression Builder dialog. Then, expand **ADF Bindings**, **bindings**, and **URI1**.

11. Double-click **inputValue** variable to create the `#{bindings.URI1.inputValue}` expression, and click **OK**. This expression is based on new elements that you added in `executables` and `bindings`.

12. Run your page. The new link should display content from the new path (`NDValue`) that you specified in step 4. Figure 26–12 shows the new link, `FOD Logo`, in addition to the `Plasma News` link that was added in the first part of Section 26.5.1.1, "Publishing Content As a Textual Link".

Figure 26–12 New Textual Link


myPage Windows Internet Explorer
Page
Tools
Plasma News
FOD Logo
Application1-ViewController-context-root/...
Tools
ORACLE Fusion OrderDemo
Done
Int 100%

You can add as many links as required by following these steps.

26.5.1.2 Creating a Clickable Image to Link to a Document

In this section, you will use the Image option of ADF Faces to publish a document as a clickable image, that is, clicking the image object will display your document.

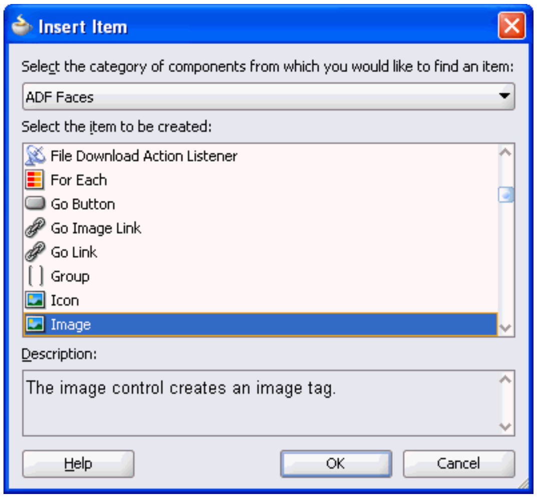
To publish content as a clickable image object:

1. In the Application Navigator, open the page, in which you created the ADF Go Link, by double-clicking it.

2. To convert the textual link that you created in the first part of Section 26.5.1.1, "Publishing Content As a Textual Link", in the Structure window, select **Insert inside af:goLink** and choose **Browse**. The Insert Item dialog displays.

3. From the **Select the item to be created** list, select **Image**, as shown in Figure 26–13.

Figure 26–13 Insert ADF Faces Item



Select the category of components from which you would like to find an item:

ADF Faces

Select the item to be created:

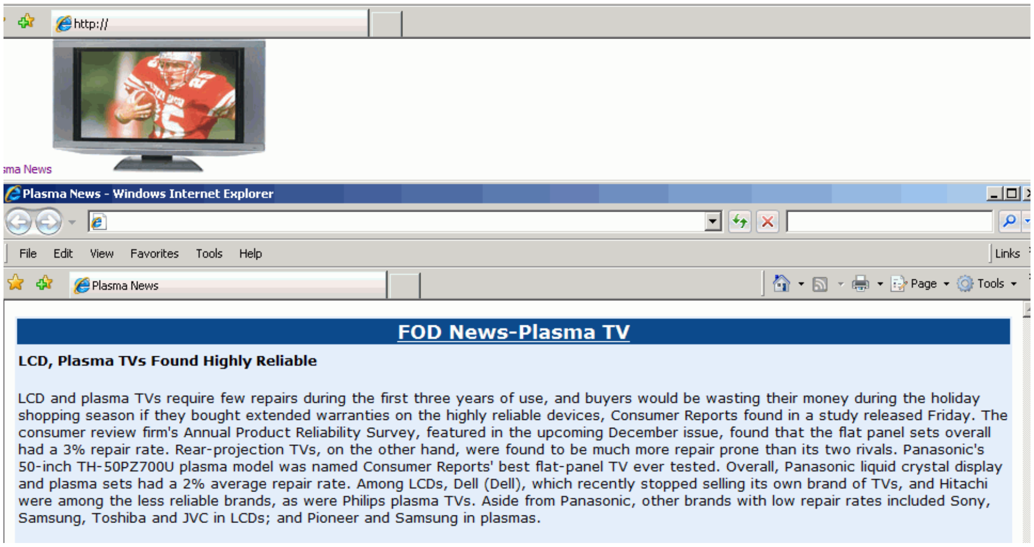
Image

Description:

The image control creates an image tag.

4. Click **OK**. The Insert Image dialog displays.
5. Browse to the image file you intend to display as the image link; for example, `plasma.jpg`.
6. Click **Finish**.
7. Right-click your page and choose **Run**. Figure 26–14 shows a sample output.

Figure 26–14 ADF Object Image Link in a Browser



FOD News-Plasma TV

LCD, Plasma TVs Found Highly Reliable

LCD and plasma TVs require few repairs during the first three years of use, and buyers would be wasting their money during the holiday shopping season if they bought extended warranties on the highly reliable devices, Consumer Reports found in a study released Friday. The consumer review firm's Annual Product Reliability Survey, featured in the upcoming December issue, found that the flat panel sets overall had a 3% repair rate. Rear-projection TVs, on the other hand, were found to be much more repair prone than its two rivals. Panasonic's 50-inch TH-50PZ700U plasma model was named Consumer Reports' best flat-panel TV ever tested. Overall, Panasonic liquid crystal display and plasma sets had a 2% average repair rate. Among LCDs, Dell (Dell), which recently stopped selling its own brand of TVs, and Hitachi were among the less reliable brands, as were Philips plasma TVs. Aside from Panasonic, other brands with low repair rates included Sony, Samsung, Toshiba and JVC in LCDs; and Pioneer and Samsung in plasmas.

26.5.2 What Happens at Runtime

In the preceding examples, you created hyperlinks to files that are stored in a file system using **ADF Go Link** and converted them into textual and image links using the `getURI` method and the **Image** component of **ADF Faces**.

At runtime, the ADF framework uses the information from the page definition file to invoke the data control methods required by the page. For information about the page lifecycle, see the "Understanding the Fusion Page Lifecycle" chapter in *Fusion Developer's Guide for Oracle Application Development Framework*.

At runtime, the getURI data control method is invoked to convert the given path into a valid HTTP URI for the content repository for which the data control is configured. The returned URL is syntactically correct for the target repository, but is not guaranteed to find a resource, that is, the getURI method does not validate that the path corresponds to an existing JCR node. When the page is rendered and the clickable image or link is clicked, the application's get handler converts the HTTP URL into a JCR path and attempts to retrieve the content for the JCR path. The get handler also supplies mimeType information in the response Content-Type header, if such information is available from the repository. This is because in JCR, jcr:mimeType is an optional property of the nt:resource node type.

26.5.3 Publishing Content in a Table

In this section, the getItems data control method is used to publish file and folder information in a table. This section describes the following procedures:

- Section 26.5.3.1, "Displaying Files and Folders in Read-Only Format"
- Section 26.5.3.2, "Displaying the Name Attribute As a Go Link"
- Section 26.5.3.3, "Configuring a Table to Show Only Files"

Before you begin:

1. Configure a repository connection as described in Section 25.2, "Configuring Content Repository Connections."
2. Configure a data control as described in Section 26.2, "Configuring Content Data Controls for JCR Adapters."
3. Create a page as described in Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."

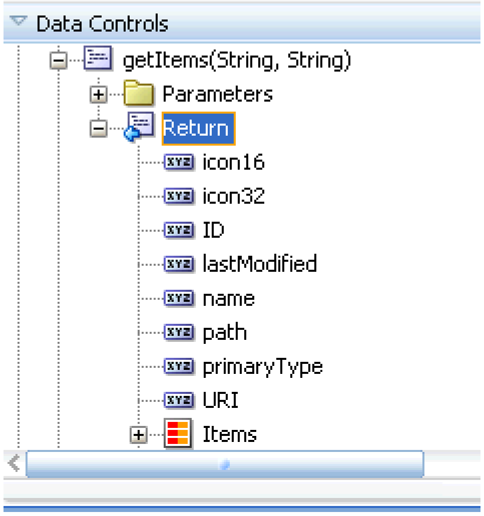
26.5.3.1 Displaying Files and Folders in Read-Only Format

Here you will create a read-only ADF table using the getItems method.

To display folder content in a read-only table:

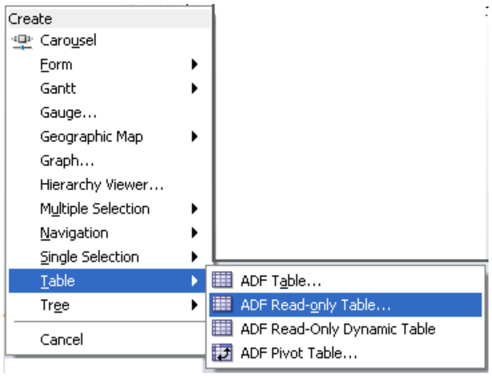
1. To open the page in the visual editor, double-click it in the Application Navigator.
2. In the Data Controls panel, under your data control, expand the **getItems** method and the **Return** node, as shown in Figure 26–15.

Figure 26–15 The Return node of the getItems method



3. To create a table that lists every file and folder available through this data control, drop the **Return** node on to the page or under `af:form` in the Structure window. From the **Create** menu, choose **Table** and then **ADF Read-only Table**, as shown in Figure 26–16.

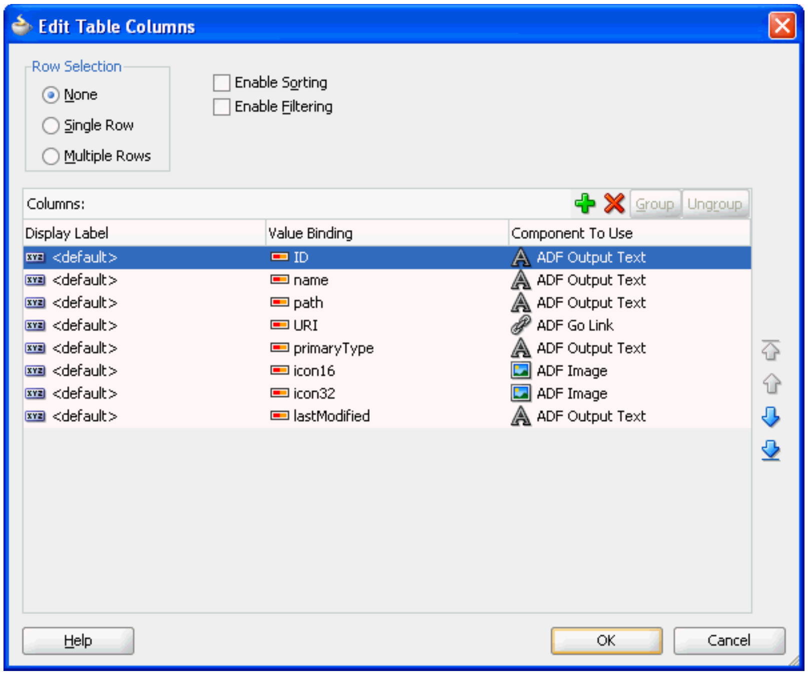
Figure 26–16 The Create Context Menu for getItems Method



4. In the Edit Table Columns dialog, as shown in Figure 26–17, Select the row for the `getItems.name` **Value Binding** and enter an appropriate value for the **Display Label**; for example, `Name`.

   Repeat this step for the **path**, **URI**, **primaryType**, and **lastModified** attributes. Enter new display labels such as `name`, `Location`, `URL`, and so on, then click **OK.**

Figure 26–17 Edit Table Columns



Row Selection

● None

○ Single Row

○ Multiple Rows

□ Enable Sorting

□ Enable Filtering

Columns:

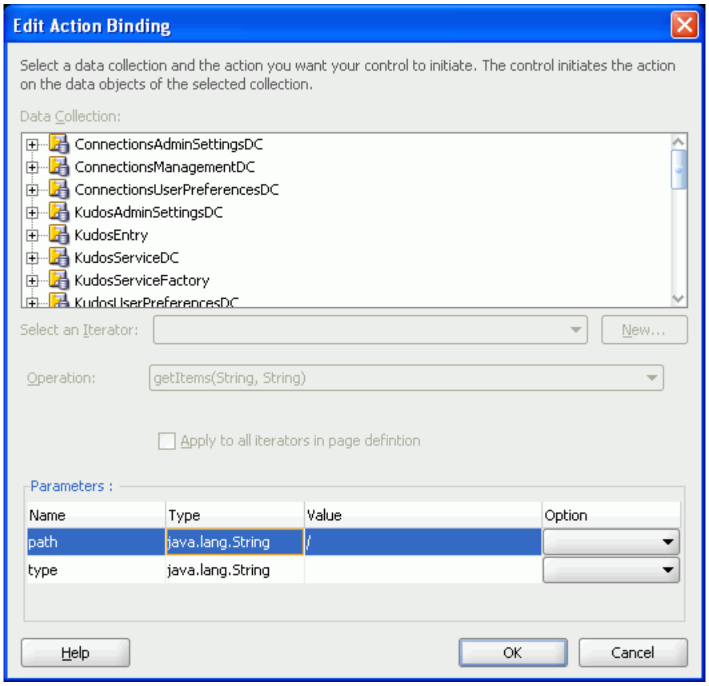
Display Label	Value Binding	Component To Use
<default>	ID	ADF Output Text
<default>	name	ADF Output Text
<default>	path	ADF Output Text
<default>	URI	ADF Go Link
<default>	primaryType	ADF Output Text
<default>	icon16	ADF Image
<default>	icon32	ADF Image
<default>	lastModified	ADF Output Text

5. If this is the first time you have dropped a node onto the page, the Edit Action Binding dialog displays.

In the Edit Action Binding dialog, enter the path of the content directory as the `path` parameter, as shown in Figure 26–18. You must enter a leading slash (`/`). To modify or delete this path later, click the arrow icon next to the node in design mode and choose **Go to Binding** from the context menu.

Leave the `type` parameter blank. This implies that the table displays both files and folders.

Figure 26–18 Edit Action Binding



Edit Action Binding

Select a data collection and the action you want your control to initiate. The control initiates the action on the data objects of the selected collection.

Data Collection:

- ConnectionsAdminSettingsDC
- ConnectionsManagementDC
- ConnectionsUserPreferencesDC
- KudosAdminSettingsDC
- KudosEntry
- KudosServiceDC
- KudosServiceFactory
- KudosUserPreferencesDC

Select an Iterator:

Operation: getItems(String, String)

□ Apply to all iterators in page defintion

Parameters :

Name	Type	Value	Option
path	java.lang.String	/	
type	java.lang.String		

6. Click **OK.** You should now see a table on the page that looks like Figure 26–19.

Figure 26–19 Read-Only Table for Publishing Folder Content

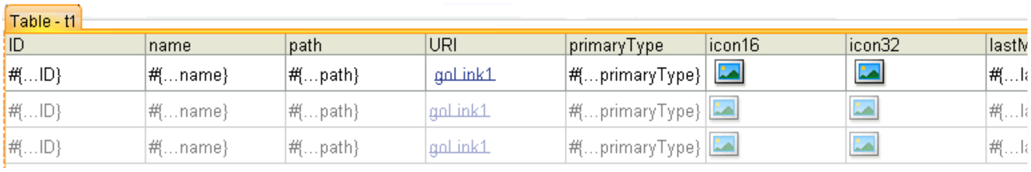


Table - t1

ID	name	path	URI	primaryType	icon16	icon32	lastM
#{...ID}	#{...name}	#{...path}	golLink1	#{...primaryType}	🖼	🖼	#{...la
#{...ID}	#{...name}	#{...path}	golLink1	#{...primaryType}	🖼	🖼	#{...la
#{...ID}	#{...name}	#{...path}	golLink1	#{...primaryType}	🖼	🖼	#{...la

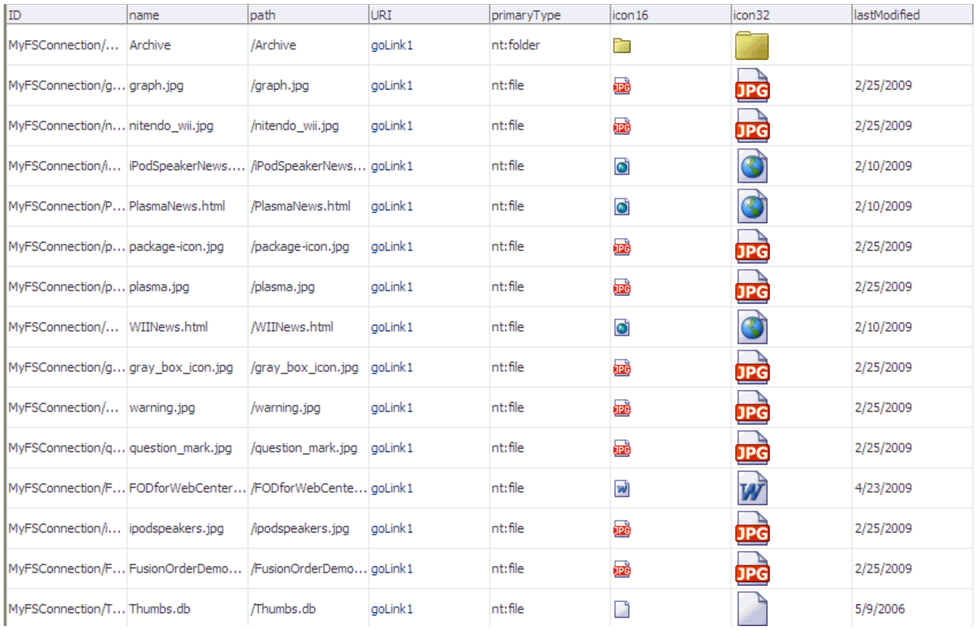
---

Note: You can turn the page caching on or off. To do so, open the page definition and expand **executables**, and select **getItemsIterator** in the Structure window. Then, in the Property Inspector, set **CacheResults** to **true** or **false**, as required.

---

7. Run the page. You should see a list of all files and folders available in your content directory. Figure 26–20 shows a read-only table displaying both files and folders at runtime.

Figure 26–20 Files and Folders Displayed in a Read-Only Table



ID	name	path	URI	primaryType	icon16	icon32	lastModified
MyFSConnection/...	Archive	/Archive	goLink1	nt:folder	📁	📁	
MyFSConnection/g...	graph.jpg	/graph.jpg	goLink1	nt:file	JPG	JPG	2/25/2009
MyFSConnection/n...	nitendo_wii.jpg	/nitendo_wii.jpg	goLink1	nt:file	JPG	JPG	2/25/2009
MyFSConnection/i...	iPodSpeakerNews....	/iPodSpeakerNews...	goLink1	nt:file	🌐	🌐	2/10/2009
MyFSConnection/P...	PlasmaNews.html	/PlasmaNews.html	goLink1	nt:file	🌐	🌐	2/10/2009
MyFSConnection/p...	package-icon.jpg	/package-icon.jpg	goLink1	nt:file	JPG	JPG	2/25/2009
MyFSConnection/p...	plasma.jpg	/plasma.jpg	goLink1	nt:file	JPG	JPG	2/25/2009
MyFSConnection/...	WIINews.html	/WIINews.html	goLink1	nt:file	🌐	🌐	2/10/2009
MyFSConnection/g...	gray_box_icon.jpg	/gray_box_icon.jpg	goLink1	nt:file	JPG	JPG	2/25/2009
MyFSConnection/...	warning.jpg	/warning.jpg	goLink1	nt:file	JPG	JPG	2/25/2009
MyFSConnection/q...	question_mark.jpg	/question_mark.jpg	goLink1	nt:file	JPG	JPG	2/25/2009
MyFSConnection/F...	FODforWebCenter...	/FODforWebCente...	goLink1	nt:file	W	W	4/23/2009
MyFSConnection/i...	ipodspeakers.jpg	/ipodspeakers.jpg	goLink1	nt:file	JPG	JPG	2/25/2009
MyFSConnection/F...	FusionOrderDemo...	/FusionOrderDemo...	goLink1	nt:file	JPG	JPG	2/25/2009
MyFSConnection/T...	Thumbs.db	/Thumbs.db	goLink1	nt:file	🗋	🗋	5/9/2006

By default, the table displays file or folder attributes as read-only text (`af:outputText`). The next section describes how to display the `Name` attribute (`name`) as a Go Link (`af:goLink`).

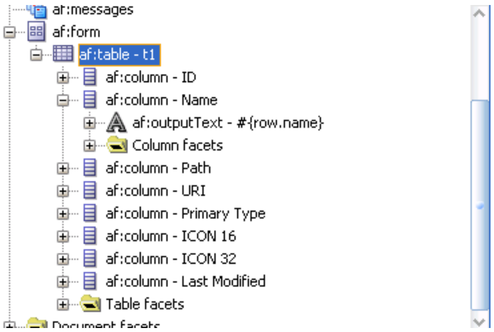
26.5.3.2 Displaying the Name Attribute As a Go Link

In this section, you will convert the `Name` attribute of the table that you created in Section 26.5.3.1, "Displaying Files and Folders in Read-Only Format" into a link using an **ADF Go Link** component. You will also configure the table to show only the **Name** column.

To display the Name attribute as a Go Link:

1. In the Structure window (Figure 26–21), expand the first column of the table (`af:column - Name`) to show the default display format `af:outputText - #{row.name}`.

Figure 26–21 Default Formatting for the Name Column



```
af:messages
af:form
  af:table - t1
    af:column - ID
    af:column - Name
      af:outputText - #{row.name}
      Column facets
    af:column - Path
    af:column - URI
    af:column - Primary Type
    af:column - ICON 16
    af:column - ICON 32
    af:column - Last Modified
    Table facets
Document facets
```

2. In the source view for the page, change the name column to use a go link. The link displays the name but links to the URI of the entry:

   Replace the `af:outputText` in **bold**

   ```
   <af:column sortProperty="#{bindings.Return.hints.name.name}"
   ```

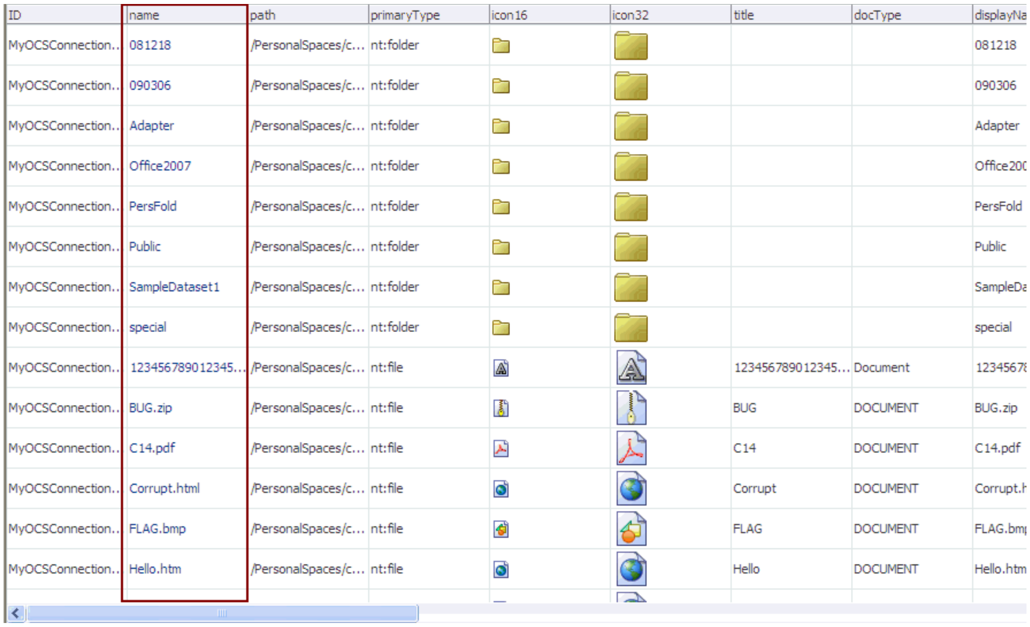
```
        sortable="false" headerText="Name" id="c7">
      <af:outputText value="#{row.name}" id="ot3"/>
</af:column>
```

with an `af:goLink` as shown in **bold**:

```
<af:column sortProperty="#{bindings.Return.hints.name.name}"
         sortable="false" headerText="Name" id="c7">
   <af:goLink text="#{row.name}" id="goLink2"
destination="#{row.bindings.URI.inputValue}"/>
</af:column>
```

3. In the Structure window, right-click `af:column - URI` and select **Delete**.
4. Right-click the page in the Application Navigator and choose **Run**. You should see a list of hyperlinked file and folder names like the one shown in Figure 26–22. This figure shows the `name` attribute as a link. Clicking a link in the **URI** column opens the respective file or folder and shows its contents.

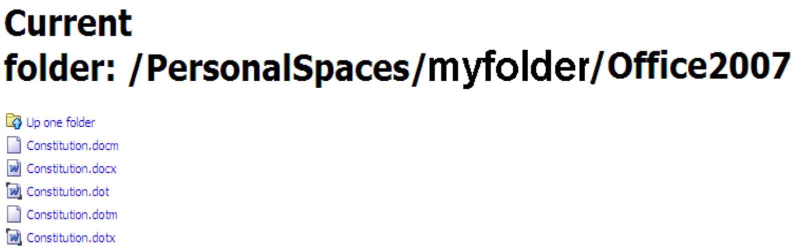
Figure 26–22 Folder Content Displayed as Hyperlinks



ID	name	path	primaryType	icon16	icon32	title	docType	displayNa
MyOCSConnection..	081218	/PersonalSpaces/c…	nt:folder	📁	📁			081218
MyOCSConnection..	090306	/PersonalSpaces/c…	nt:folder	📁	📁			090306
MyOCSConnection..	Adapter	/PersonalSpaces/c…	nt:folder	📁	📁			Adapter
MyOCSConnection..	Office2007	/PersonalSpaces/c…	nt:folder	📁	📁			Office200
MyOCSConnection..	PersFold	/PersonalSpaces/c…	nt:folder	📁	📁			PersFold
MyOCSConnection..	Public	/PersonalSpaces/c…	nt:folder	📁	📁			Public
MyOCSConnection..	SampleDataset1	/PersonalSpaces/c…	nt:folder	📁	📁			SampleDa
MyOCSConnection..	special	/PersonalSpaces/c…	nt:folder	📁	📁			special
MyOCSConnection..	123456789012345…	/PersonalSpaces/c…	nt:file	A	A	123456789012345…	Document	1234567
MyOCSConnection..	BUG.zip	/PersonalSpaces/c…	nt:file			BUG	DOCUMENT	BUG.zip
MyOCSConnection..	C14.pdf	/PersonalSpaces/c…	nt:file			C14	DOCUMENT	C14.pdf
MyOCSConnection..	Corrupt.html	/PersonalSpaces/c…	nt:file	🌐	🌐	Corrupt	DOCUMENT	Corrupt.h
MyOCSConnection..	FLAG.bmp	/PersonalSpaces/c…	nt:file			FLAG	DOCUMENT	FLAG.bm
MyOCSConnection..	Hello.htm	/PersonalSpaces/c…	nt:file	🌐	🌐	Hello	DOCUMENT	Hello.htm

5. Click a file name. The file you pick should appear in a browser window.
6. Click the name of a folder, the contents of the folder display, as shown in Figure 26–23.

Figure 26–23 Folder Contents



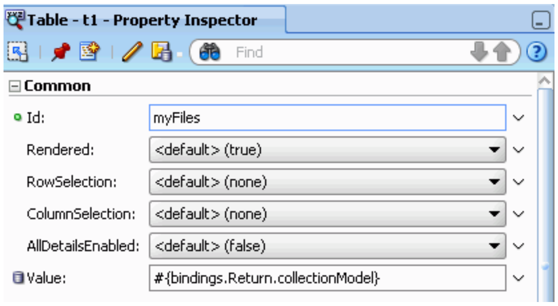
Current folder: /PersonalSpaces/myfolder/Office2007

Up one folder
Constitution.docm
Constitution.docx
Constitution.dot
Constitution.dotm
Constitution.dotx

To configure the table to show only the Name column:

1. In the Structure window, under the **af:table - t1** node, delete all but the **Name** column.
2. Double-click the **af:table - t1** node to display the Property Inspector.
3. Under the **Common** tab, in the **Id** field, enter a name, for example `myFiles`, as shown in Figure 26–24.

Figure 26–24 Table Properties - Common Tab



Id: myFiles

Rendered: <default> (true)

RowSelection: <default> (none)

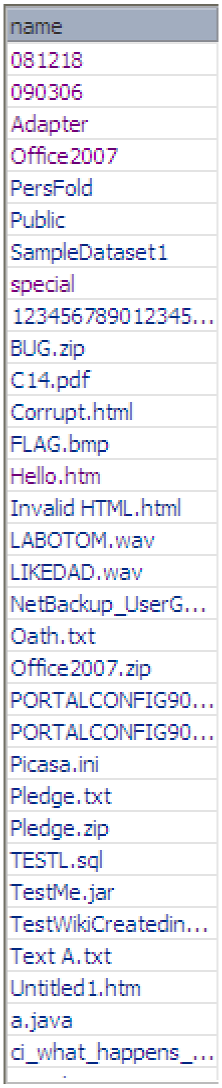
ColumnSelection: <default> (none)

AllDetailsEnabled: <default> (false)

Value: #{bindings.Return.collectionModel}

4. Run the page to view the output. Figure 26–25 shows only one column of the table since other rows were removed from the Structure window at design time. This table shows both files and folders, because you left the `type` parameter blank when creating the table.

Figure 26–25 Files and Folders Displayed in a Single-Column Table



name
081218
090306
Adapter
Office2007
PersFold
Public
SampleDataset1
special
123456789012345...
BUG.zip
C14.pdf
Corrupt.html
FLAG.bmp
Hello.htm
Invalid HTML.html
LABOTOM.wav
LIKEDAD.wav
NetBackup_UserG...
Oath.txt
Office2007.zip
PORTALCONFIG90...
PORTALCONFIG90...
Picasa.ini
Pledge.txt
Pledge.zip
TESTL.sql
TestMe.jar
TestWikiCreatedin...
Text A.txt
Untitled1.htm
a.java
ci_what_happens_...

In the next section, the **Name** column will be configured to show only files.

26.5.3.3 Configuring a Table to Show Only Files

The `type` attribute is used to configure a table to show only files and not folders.

To configure the table to show files:

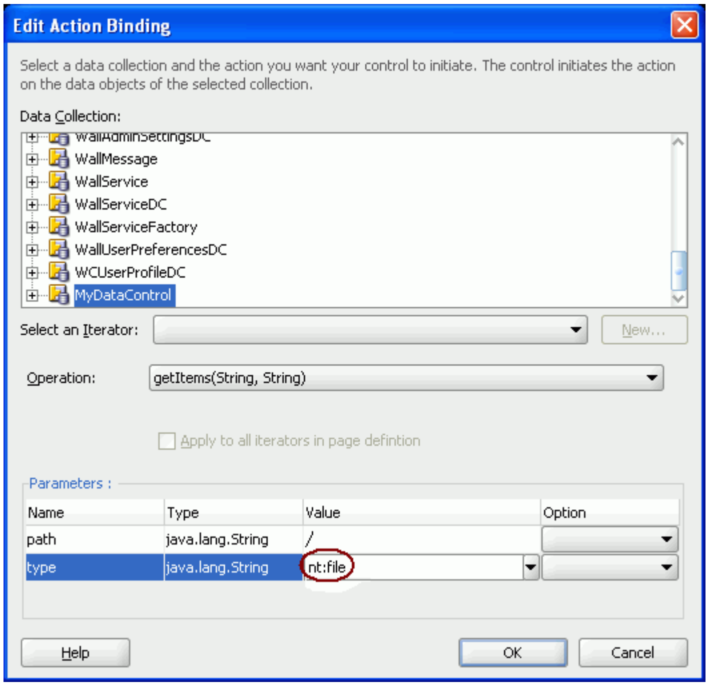
1. Right-click your page and choose **Go to Page Definition**.

   > **Note:** The `RangeSize` binding setting, which is used to control the number of items displayed on a page, is set to `10` by default in the page definition file. You can change it, as required, in the Property Inspector.

2. In the **Overview** tab, double-click **getItems** under **Bindings**. The Edit Action Binding dialog displays.

3. The **type** options are `nt:file` and `nt:folder`. To specify the display of only files, enter `nt:file` under the **Value** column, as shown in Figure 26–26, and click **OK**.

Figure 26–26 Display Files Only



Select a data collection and the action you want your control to initiate. The control initiates the action on the data objects of the selected collection.

Data Collection:

- WallAdminSettingsDC
- WallMessage
- WallService
- WallServiceDC
- WallServiceFactory
- WallUserPreferencesDC
- WCUserProfileDC
- MyDataControl

Select an Iterator:

Operation: getItems(String, String)

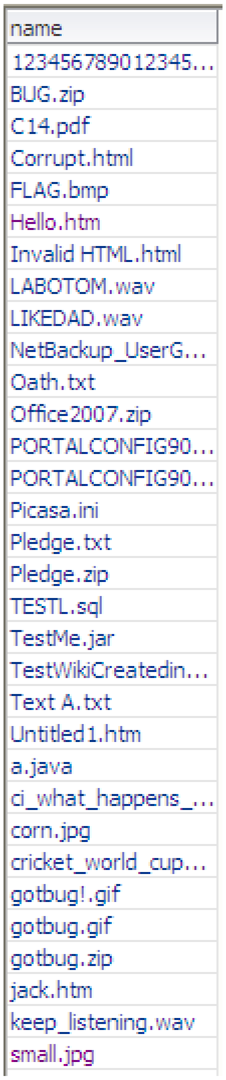
☐ Apply to all iterators in page defintion

Parameters :

Name	Type	Value	Option
path	java.lang.String	/	
type	java.lang.String	nt:file	

4. Now run the page. Figure 26–27 shows only files in the single-column table because the column type is `nt:file`.

Figure 26–27 Files Displayed in a Single-Column Table



name
123456789012345...
BUG.zip
C14.pdf
Corrupt.html
FLAG.bmp
Hello.htm
Invalid HTML.html
LABOTOM.wav
LIKEDAD.wav
NetBackup_UserG...
Oath.txt
Office2007.zip
PORTALCONFIG90...
PORTALCONFIG90...
Picasa.ini
Pledge.txt
Pledge.zip
TESTL.sql
TestMe.jar
TestWikiCreatedin...
Text A.txt
Untitled1.htm
a.java
ci_what_happens_...
corn.jpg
cricket_world_cup...
gotbug!.gif
gotbug.gif
gotbug.zip
jack.htm
keep_listening.wav
small.jpg

26.5.4 What Happens at Runtime

The `getItems` method of the JCR data control retrieves the child items of a JCR folder (type `nt:folder`). This method is called with a path to a folder and optionally a type to which the returned child nodes are restricted.

The `path` parameter must be the path of a folder. An exception to this rule is that the root of the repository does not have to be a folder. Hence, the `getItems` method can retrieve the child items for a path that corresponds to a folder, or that is the root of the repository. Otherwise the `getItems` method does not attempt to retrieve the child items and therefore the result set is never populated.

At runtime, the JCR data control calls the `Session.getItem` method. This method returns a JCR node. The data control then calls the `node.getNodes` to retrieve child nodes. The child nodes are filtered according to the specified type; for example, the `nt:file` type. The data control passes on these child nodes to ADF. The data control ensures that the JCR node object is adapted to ADF so that JCR properties are available as data control item attributes that can be consumed through the bindings container.

In the example, each row in the collection returned by the data control is stored as a row in the `af:table` table. However, a column is only displayed for each `af:column` defined in the `af:table`, and not for every possible ADF item attributes returned by the data control. In the first part of the example, the drag and drop action creates an `af:column` for every ADF attribute available for each ADF item returned by the data control.

If the `af:table` is modified to include only the `af:column` for the name, then at runtime it only requests the name of the ADF item. That is, the data control runs a method to fetch the name of the JCR node. At design time, when the name column is converted to an `af:goLink`, the destination of **Go Link** destination is set to the **URI** value of the item, as shown in the following syntax:

```
<af:goLink text="#{row.name}" destination="#{row.URI}"/>
```

At runtime, for each ADF item in the table, the data control runs methods to return both the JCR name of the item and its HTTP URL.

26.5.5 Publishing Folder Content in a Tree

In this section, you will use the `getItems` method to publish content in a hierarchal tree format. This section describes the following procedures:

- Section 26.5.5.1, "Displaying Files and Folders in Read-Only Format"
- Section 26.5.5.2, "Displaying File Names As Hyperlinks"

Before you begin:

1. Configure a repository connection as described in Section 25.2, "Configuring Content Repository Connections."
2. Configure a data control as described in Section 26.2, "Configuring Content Data Controls for JCR Adapters."
3. Create a page as described in Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."

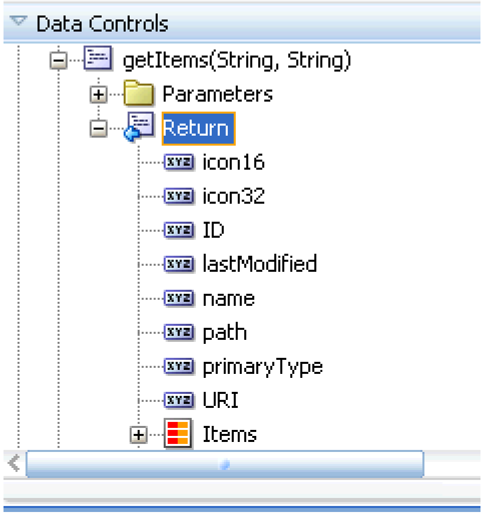
26.5.5.1 Displaying Files and Folders in Read-Only Format

In this section, you will display your content in the tree format.

To display your content in the tree format:

1. In the Application Navigator, double-click your page to open it in the design view.
2. In the Data Controls panel, under your data control, expand the **getItems** method as shown in Figure 26–28.

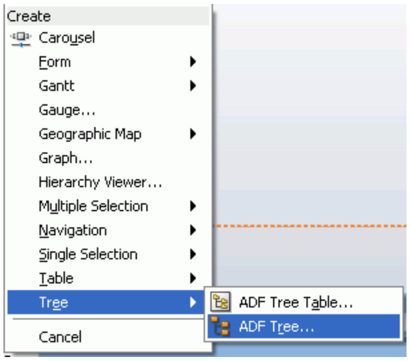
Figure 26–28 Parameters of the getItems Method



3. To display your content as an **ADF Tree**, select the **Return** node and drag it onto the page. From the Create menu, choose **Tree** and then **ADF Tree**, as shown in Figure 26–29.

   If this is the first time you have dropped a node onto the page, the Edit Action Binding dialog displays.

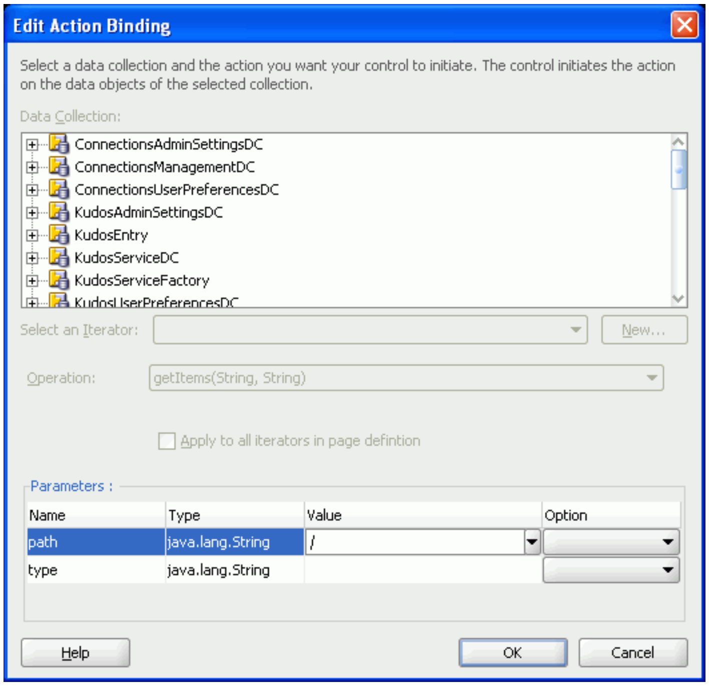
Figure 26–29 Oracle JDeveloper Create Menu for getItems



4. To create a tree that displays everything under the base path, enter the slash (`/`) for the `path` parameter, as shown in Figure 26–30. To modify or delete this path later, click the arrow icon next to the node in the design mode and choose **Go to Binding** from the context menu.

   Leave the `type` parameter blank to show both files and folders.

Figure 26–30 The Edit Action Binding Dialog



Edit Action Binding

Select a data collection and the action you want your control to initiate. The control initiates the action on the data objects of the selected collection.

Data Collection:

- ConnectionsAdminSettingsDC
- ConnectionsManagementDC
- ConnectionsUserPreferencesDC
- KudosAdminSettingsDC
- KudosEntry
- KudosServiceDC
- KudosServiceFactory
- KudosUserPreferencesDC

Select an Iterator:

Operation: getItems(String, String)

□ Apply to all iterators in page defintion

Parameters :

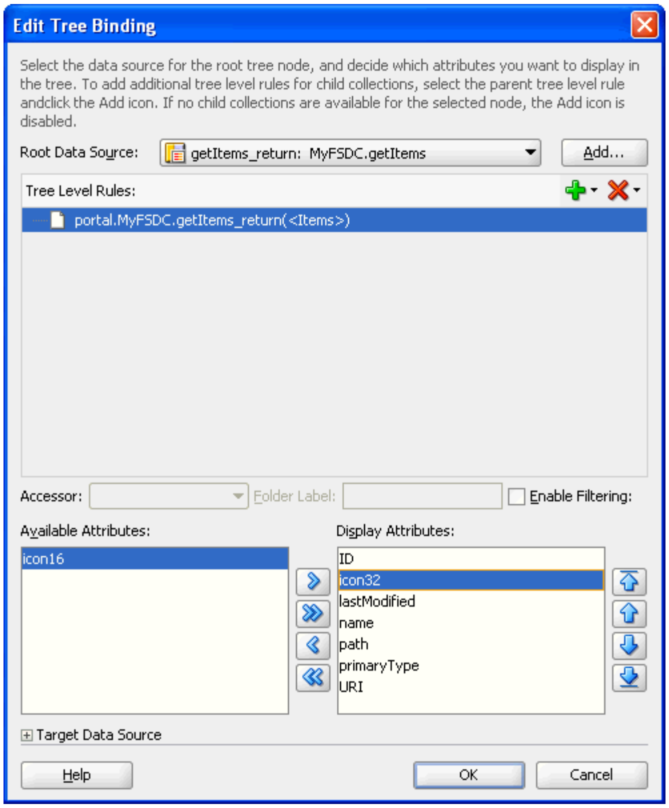
Name	Type	Value	Option
path	java.lang.String	/	
type	java.lang.String		

5. Click **OK**. The Edit Tree Binding dialog displays.

6. To show item names, paths, and types at runtime, under **Available Attributes**, select the desired attributes and move them to the **Display Attributes** list.

7. In the **Tree Level Rules** box, click the **Add Rule** icon and select **Items** to create a rule, as shown in Figure 26–31, which enables the tree to find its child items.

Figure 26–31 Edit Tree Binding



Edit Tree Binding

Select the data source for the root tree node, and decide which attributes you want to display in the tree. To add additional tree level rules for child collections, select the parent tree level rule andclick the Add icon. If no child collections are available for the selected node, the Add icon is disabled.

Root Data Source: getItems_return: MyFSDC.getItems

Tree Level Rules:
portal.MyFSDC.getItems_return(<Items>)

Accessor: Folder Label: □ Enable Filtering:

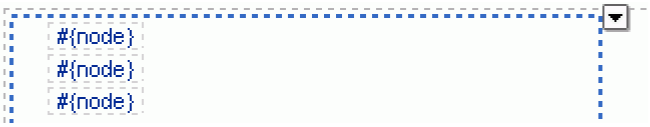
Available Attributes:
icon16

Display Attributes:
ID
icon32
lastModified
name
path
primaryType
URI

⊞ Target Data Source

8. Click **OK.** A tree displays in the page that looks like Figure 26–32.

Figure 26–32 Tree for Navigating Folder Content



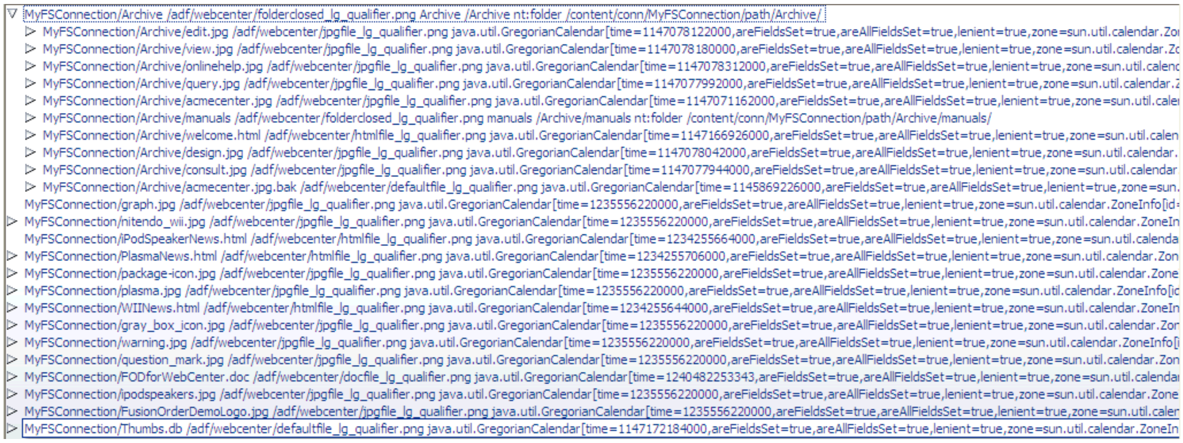
#{node}
#{node}
#{node}

9. Run your page to display the results.

   When the page appears in your browser window, you should see a list of files and folders available through your data control. Figure 26–33 displays a tree of files and folders in the read-only format based on **ADF tree** dropped on the JSF page. Expand a branch to see the content in this subdirectory.

> **Note:** By default, the range size is `10`. To change the number of items displayed in the tree, edit the **RangeSize** property for the data control in the page definition file (*`name`*`PageDef.xml`).

Figure 26–33 Folder Content Displayed in a Tree



```
▽ MyFSConnection/Archive /adf/webcenter/folderclosed_lg_qualifier.png Archive /Archive nt:folder /content/conn/MyFSConnection/path/Archive/
   ▷ MyFSConnection/Archive/edit.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1147078122000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.Zo
   ▷ MyFSConnection/Archive/view.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1147078180000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.Zc
   ▷ MyFSConnection/Archive/onlinehelp.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1147078312000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calenc
   ▷ MyFSConnection/Archive/query.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1147077992000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.Z
   ▷ MyFSConnection/Archive/acmecenter.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1147071162000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.cale
   ▷ MyFSConnection/Archive/manuals /adf/webcenter/folderclosed_lg_qualifier.png manuals /Archive/manuals nt:folder /content/conn/MyFSConnection/path/Archive/manuals/
   ▷ MyFSConnection/Archive/welcome.html /adf/webcenter/htmlfile_lg_qualifier.png java.util.GregorianCalendar[time=1147166926000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calen
   ▷ MyFSConnection/Archive/design.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1147078042000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.
   ▷ MyFSConnection/Archive/consult.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1147077944000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar
   ▷ MyFSConnection/Archive/acmecenter.jpg.bak /adf/webcenter/defaultfile_lg_qualifier.png java.util.GregorianCalendar[time=1145869226000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.
  MyFSConnection/graph.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1235556220000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.ZoneInfo[id=
▷ MyFSConnection/nitendo_wii.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1235556220000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.ZoneIn
  MyFSConnection/iPodSpeakerNews.html /adf/webcenter/htmlfile_lg_qualifier.png java.util.GregorianCalendar[time=1234255664000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calenda
▷ MyFSConnection/PlasmaNews.html /adf/webcenter/htmlfile_lg_qualifier.png java.util.GregorianCalendar[time=1234255706000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.Zon
▷ MyFSConnection/package-icon.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1235556220000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.Zone
▷ MyFSConnection/plasma.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1235556220000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.ZoneInfo[ic
▷ MyFSConnection/WIINews.html /adf/webcenter/htmlfile_lg_qualifier.png java.util.GregorianCalendar[time=1234255644000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.ZoneIn
▷ MyFSConnection/gray_box_icon.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1235556220000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.Zor
▷ MyFSConnection/warning.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1235556220000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.ZoneInfo[i
▷ MyFSConnection/question_mark.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1235556220000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.Zon
▷ MyFSConnection/FODforWebCenter.doc /adf/webcenter/docfile_lg_qualifier.png java.util.GregorianCalendar[time=1240482253343,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar
▷ MyFSConnection/ipodspeakers.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1235556220000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.Zone
▷ MyFSConnection/FusionOrderDemoLogo.jpg /adf/webcenter/jpgfile_lg_qualifier.png java.util.GregorianCalendar[time=1235556220000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calen
▷ MyFSConnection/Thumbs.db /adf/webcenter/defaultfile_lg_qualifier.png java.util.GregorianCalendar[time=1147172184000,areFieldsSet=true,areAllFieldsSet=true,lenient=true,zone=sun.util.calendar.ZoneIn
```

By default, the tree displays file and folder names as read-only text. The next section describes how to create hyperlinks to file names. In the following section, folder names will remain read-only text because they are required for navigation through the tree.

26.5.5.2 Displaying File Names As Hyperlinks

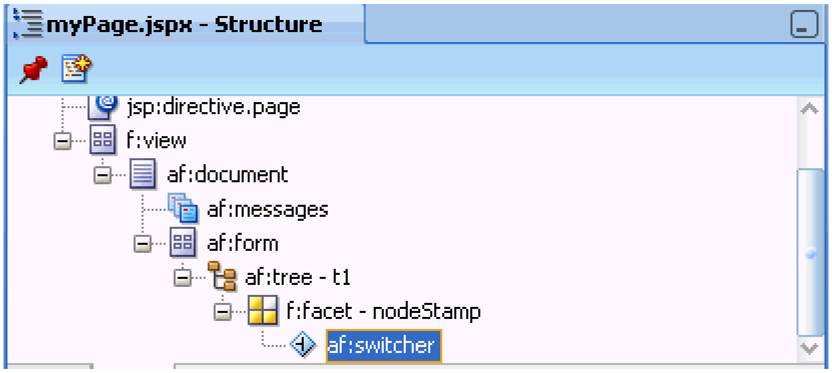
To create hyperlinks to file names and to keep folder names read-only, you need the `af:switcher` component with two facets: one for folders and one for files.

To use the Switcher component for folders and files:

1. In the Structure window, navigate to `f:facet - nodeStamp` and delete `af:outputText-#{node}`.
2. Right-click **nodeStamp** and choose **Insert inside f:facet - nodeStamp** and then **Browse**.
3. In the Insert Item dialog, from the dropdown list for selecting the category, select **ADF Faces**.
4. From the **Select the item to be created** list, select **Switcher**, and click **OK**.

   A Switcher is added under **f:facet - nodeStamp** in the Structure window, as shown in Figure 26–34.

Figure 26–34 Output Text Converted to a Switcher Component



```
jsp:directive.page
f:view
  af:document
    af:messages
    af:form
      af:tree - t1
        f:facet - nodeStamp
          af:switcher
```

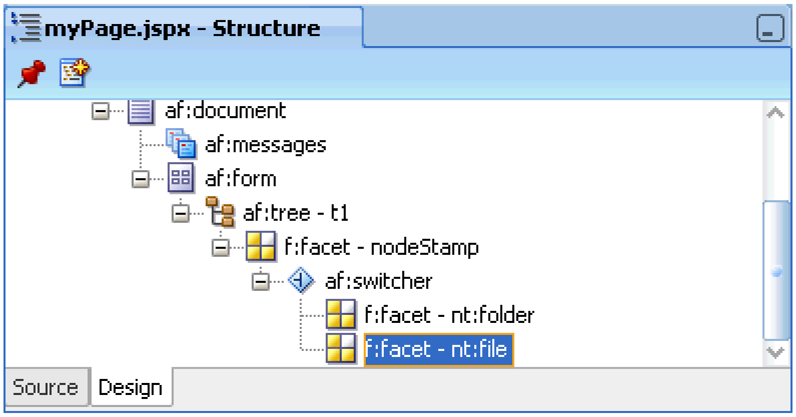
5. Double-click **af:switcher** to display the Property Inspector, if it is not displayed.

6. Under the **Common** tab, in the **FacetName** field, enter the expression `#{node.primaryType}`.

7. In the Structure window, insert two facets for the switcher. Right-click **af:switcher**, choose **Insert Inside af:switcher** and then **Facet**. The Insert Facet dialog displays.

8. Name the first facet `nt:folder` and click **OK**. Folder names require no additional formatting, so you can display the node names as plain text. Name the second facet `nt:file`. The facets look like Figure 26–35.

Figure 26–35 Switcher Component with Two Facets



9. Right-click **f:facet - nt:folder**, choose **Insert Inside f:facet - nt:folder** and then **Browse**.

10. In the Insert Item dialog, choose **ADF Faces** from the dropdown list.

11. From the **Select the item to be created** list select **Output Text** and click **OK**.

12. Double-click **af:outputText - outputText1** to display the Property Inspector, if it is not displayed already. Under the **Common** tab, in the **Value** field, enter the expression `#{node.name}`.

13. Right-click **f:facet - nt:file**, choose **Insert Inside f:facet - nt:folder** and then **Browse**.

14. In the Insert Item dialog, choose **ADF Faces** from the dropdown list.

15. From the **Select the item to be created** list select **Go Link** and click **OK**.

16. In the Structure window, double-click **af:goLink - goLink** to display the Property Inspector, if it is not already displayed.

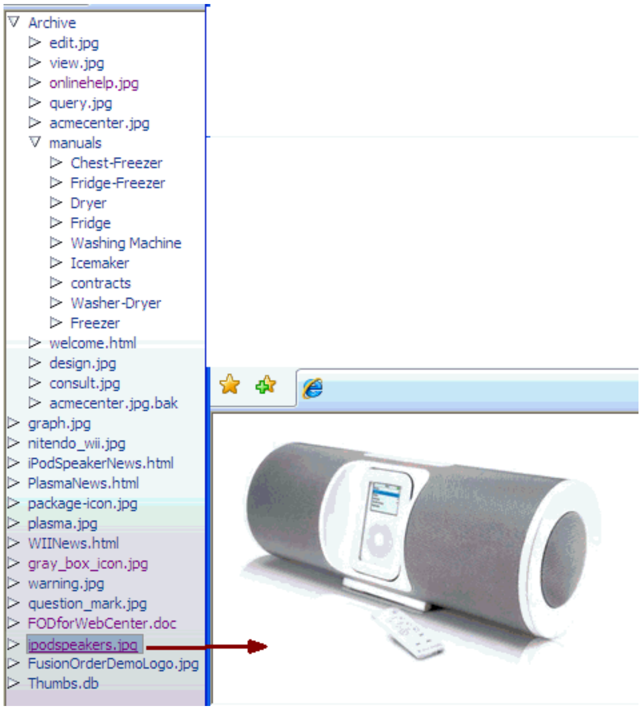
17. Under the **Common** tab, in the **Text** field, enter the `#{node.name}` expression.

18. In the **Destination** field, enter the expression `#{node.URI}`.

19. From the **TargetFrame** list, select **_blank**.

20. Run the page. Figure 26–36 displays files names as hyperlinks, because the `nt:file` facet of the switcher under `af:tree` was converted to a link (`node.URI`). Clicking a link displays the respective item.

Figure 26–36 Tree with File Names as Hyperlinks



26.5.6 What Happens at Runtime

The JCR data control `getItems` method is designed to retrieve the child items of a JCR folder (type `nt:folder`). The method is invoked with a path to a folder and optionally a type to which the returned child nodes are restricted. The `path` parameter must be the path of a folder for the `getItems` method to retrieve the child items. An exception to this rule is that the root of the repository does not have to be a folder. Hence, the `getItems` method can retrieve the child items for a path that corresponds to a folder, or that is the root of the repository. Otherwise the `getItems` method does not attempt to retrieve the child items and therefore the result set is never populated. If the path is valid, then the data control invokes `JCR Session.getItem()` on this path which returns a JCR node, and then it invokes `node.getNodes()` to retrieve all child nodes. The child nodes are filtered according to the type supplied; for example, to return only the `nt:file` type child node. This is the result that is provided by the data control to ADF. The data control ensures that the JCR node object is adapted to ADF such that JCR properties are available as data control item attributes that can be consumed by way of the bindings container.

The `af:tree` renders each node in the collection returned by the data control as a node in its tree. In the first part of the example, it displays the `name`, `type`, and `URI` for each node. Each of these values is retrieved through the data control. When the switcher is added to the `af:tree` the node's `primaryType` value is used to differentiate how a node is rendered. If the node is of primary type `nt:folder`, then only its name is shown in the tree node. However if the node is of type `nt:file`, then the node renders `go:Link`, the destination of which is the node's URI. The data control `getItems` method is invoked again to retrieve the child nodes of any folder node in the tree.

26.5.7 Adding Search Capabilities to Content Repositories

With the help of two examples, this section describes how to add simple and advanced search capabilities for the integrated content. The simple search enables users to search for the content based on name or content fragments in specific locations. The advanced search enables users to search by attribute values of the content.

This section contains the following:

- Section 26.5.7.1, "Adding Simple Search Capabilities"
- Section 26.5.7.2, "Adding Advanced Search Capabilities"

Before you begin:

1. Configure a repository connection as described in Section 25.2, "Configuring Content Repository Connections."
2. Configure a data control as described in Section 26.2, "Configuring Content Data Controls for JCR Adapters."
3. Create a page as described in Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."

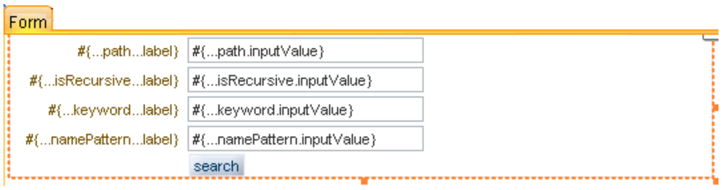
26.5.7.1 Adding Simple Search Capabilities

In this section, you will enable simple search capabilities in your page. This will let you perform wildcard (`%`) search.

To enable the search function:

1. In the Application Navigator, double-click your page to open it.
2. In the Data Controls panel, select the **search** node.
3. To enable users to perform a search by clicking a button, drag and drop the **search** node on your page. From the Create menu, choose **Parameters** and then **ADF Parameter Form**. The Edit Form Fields dialog displays.
4. Click **OK**. The ADF parameter form is added to the page, as shown in Figure 26–37.

Figure 26–37 ADF Parameter Form in the Design View

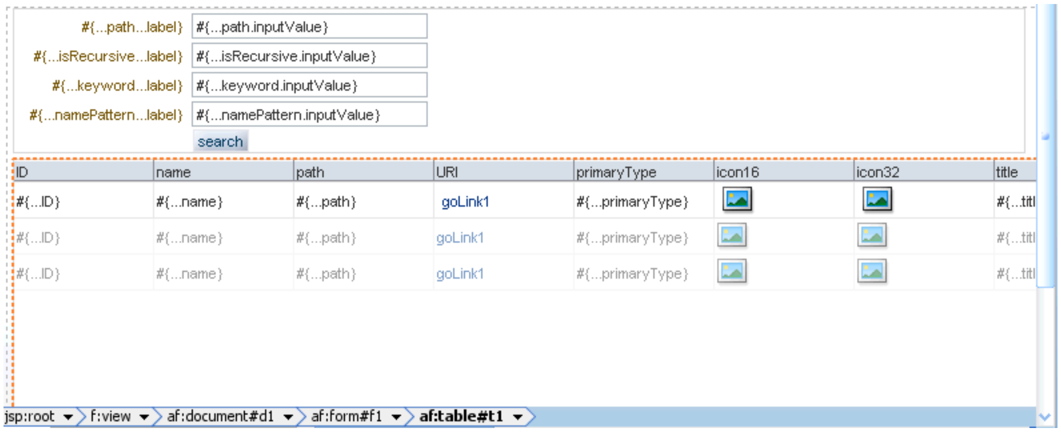


Form

#{...path...label}	#{...path.inputValue}
#{...isRecursive...label}	#{...isRecursive.inputValue}
#{...keyword...label}	#{...keyword.inputValue}
#{...namePattern...label}	#{...namePattern.inputValue}

5. To enable the display of search results in a read-only table, drag and drop the **Return** node onto the page. From the **Create** menu, choose **Table** and then **ADF Read-Only Table**. The Edit Table Columns dialog displays.
6. Click **OK**. A table similar to Figure 26–38 displays.

Figure 26–38 Table with Four Columns - search

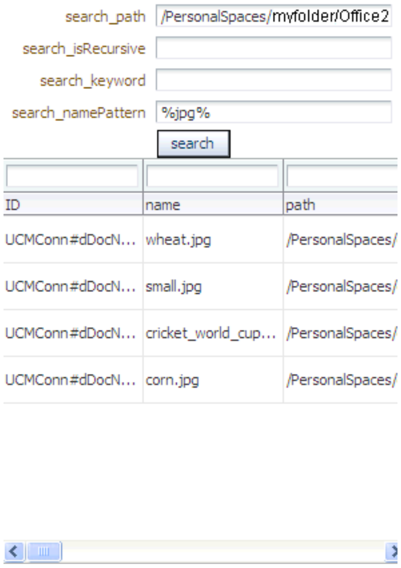


#{...path...label}	#{...path.inputValue}
#{...isRecursive...label}	#{...isRecursive.inputValue}
#{...keyword...label}	#{...keyword.inputValue}
#{...namePattern...label}	#{...namePattern.inputValue}

ID	name	path	URI	primaryType	icon16	icon32	title
#{...ID}	#{...name}	#{...path}	goLink1	#{...primaryType}	🖼	🖼	#{...titl
#{...ID}	#{...name}	#{...path}	goLink1	#{...primaryType}	🖼	🖼	#{...titl
#{...ID}	#{...name}	#{...path}	goLink1	#{...primaryType}	🖼	🖼	#{...titl

7. Run this page and specify / for **search_path** and %jpg% for **namePattern**. All .jpg files stored in the root of your repository display, as shown in Figure 26–39.

Figure 26–39 Search Results for .jpg Files



search_path	/PersonalSpaces/myfolder/Office2
search_isRecursive	
search_keyword	
search_namePattern	%jpg%

ID	name	path
UCMConn#dDocN...	wheat.jpg	/PersonalSpaces/
UCMConn#dDocN...	small.jpg	/PersonalSpaces/
UCMConn#dDocN...	cricket_world_cup...	/PersonalSpaces/
UCMConn#dDocN...	corn.jpg	/PersonalSpaces/

26.5.7.2 Adding Advanced Search Capabilities

In this section, you will add advanced search capabilities to your page that will enable you to perform search based on the last modified dates of items located in your file system repository.

To enable the advanced search function:

1. In the Application Navigator, open your page in which you intend to create the advanced search function. The page must be automatically exposed in new managed bean, where name=advancedSearch, class=AdvancedSearch, package=view. (In the Create JSF Page dialog > Page Implementation > Automatically Expose UI Components in a New Managed Bean)

   In this example the page is called advancedSearch.jspx.

2. Double-click the page to open it.

3. In the Component Palette, select **ADF Faces**.
4. From the list of **ADF Faces** - **Layout** components, drag **Panel Form Layout** onto the page.
5. From the Component Palette, drag **Input Date** into the **Panel Form Layout**.
6. In the Property Inspector, under the **Common** tab, set the **Label** to **Modified after**.
7. In the Application Navigator, under **portal.backing**, double-click **AdvancedSearch.java** to open it.
8. Add the following import declarations. These declarations are required for the `getPredicates` method, which will be added in the next step.

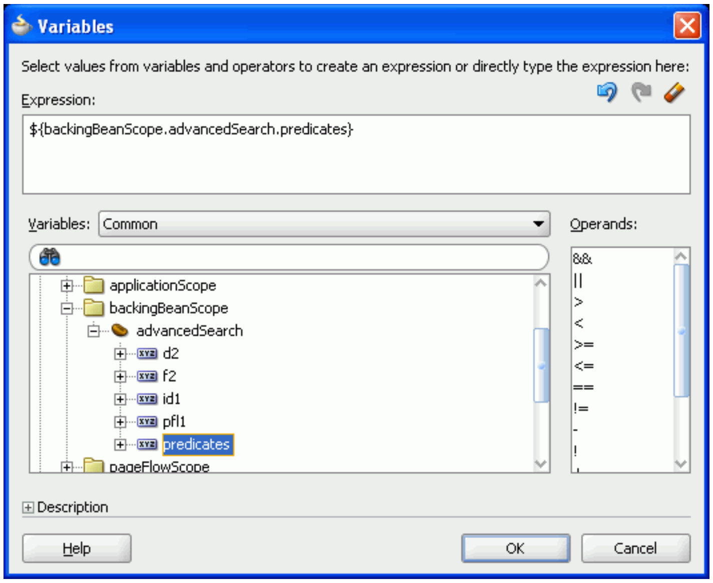
```
import java.util.ArrayList;
import java.util.Calendar;
import java.util.Date;
import java.util.List;
import oracle.vcr.datacontrol.search.Predicate;
import oracle.vcr.datacontrol.search.Operator;
```

9. Add the following method to enable the advanced search based on last modified dates of the items stored in the repository:

```
public List<Predicate> getPredicates() {
        ArrayList<Predicate> predicates = new ArrayList<Predicate>();
        if (id1.getValue() != null && !id1.getValue().equals(""))
{
            Calendar cal = Calendar.getInstance();
            cal.setTime((Date)id1.getValue());
            predicates.add(new Predicate("jcr:content/jcr:lastModified"
                                          , Operator.GREATER_THAN
                                          , cal));
        }
        // ... other predicates
        if (predicates.size()>0)
            return predicates;
        return null;
    }
```

10. From the Data Controls panel, drag the **advancedSearch** node onto the page. From the Create menu, choose **Methods** and then **ADF Button**. The Edit Action Binding dialog displays.
11. For **Path**, specify the path to the directory in which the search will be performed; for example, `/`. For **isRecursive** specify `true`, and **matchAny** specify `false`.
12. For predicates, select the arrow next to the **Value** field and then select **Show El Expression Builder**. The Variables dialog displays.
13. Expand **ADF Managed Beans**, **backingBeanScope**, **advancedSearch** and select **predicates**. This adds the expression `${backingBeanScope.advancedSearch.predicates}`, as shown in Figure 26–40, and click **OK**.

Figure 26–40 Variables Dialog - predicates



Select values from variables and operators to create an expression or directly type the expression here:

Expression:

${backingBeanScope.advancedSearch.predicates}

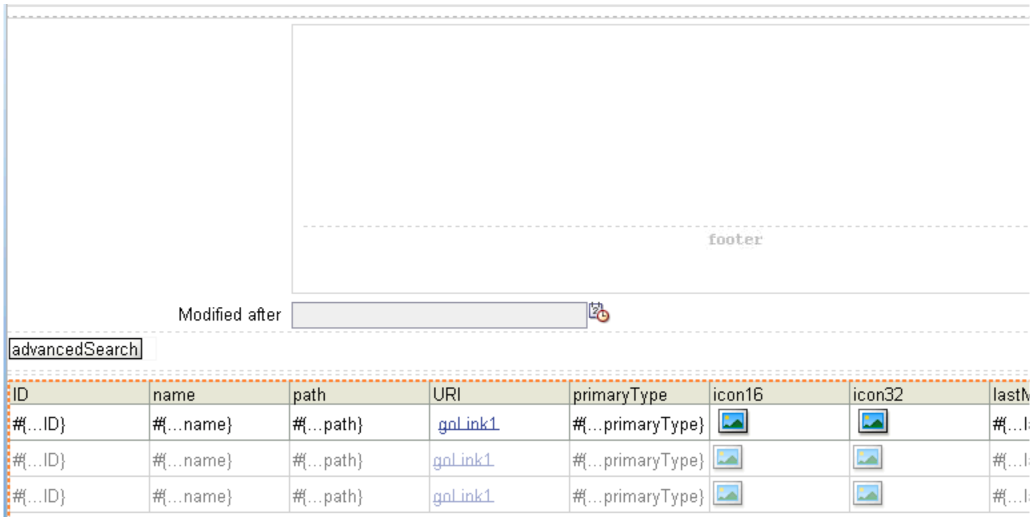
Variables: Common

14. Click **OK** in the Edit Action Binding dialog.

15. In the Data Controls panel, expand the **advancedSearch** node. Then drag **Return** and drop it onto the page, after the advancedSearch ADF button. From the Create menu, choose **Table** and then **ADF Read-only Table**.

16. In the Edit Table Columns dialog, edit labels of the columns, if needed. Then click **OK**. The Design view looks like Figure 26–41.

Figure 26–41 Advanced Search - Design View



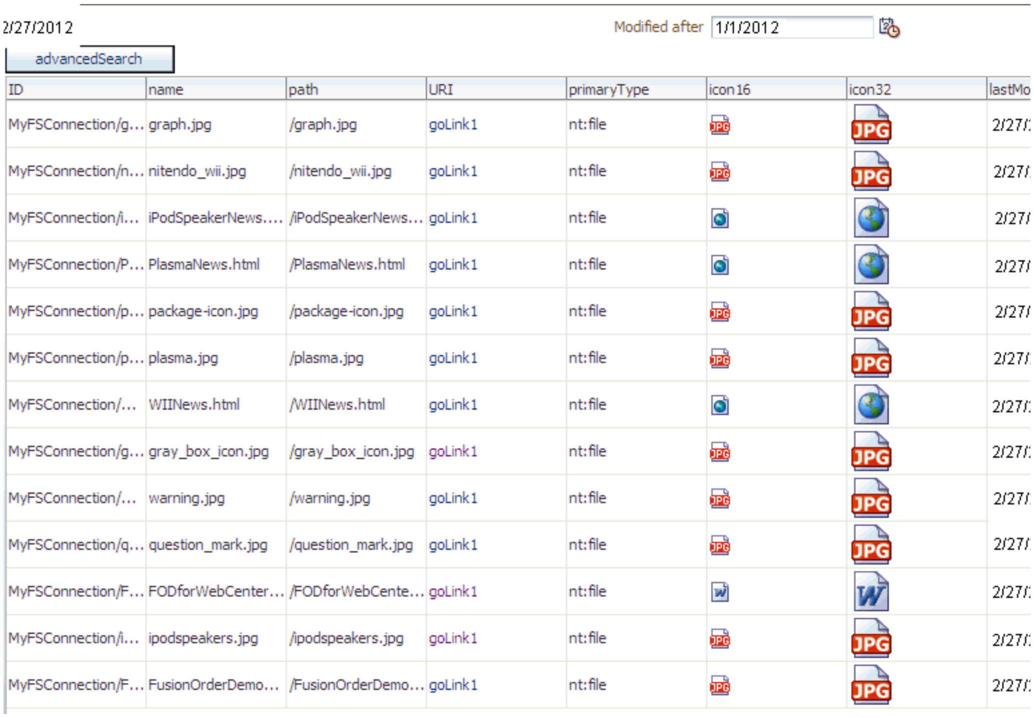
ID	name	path	URI	primaryType	icon16	icon32	lastM
#{...ID}	#{...name}	#{...path}	goLink1	#{...primaryType}	🖼	🖼	#{...l
#{...ID}	#{...name}	#{...path}	goLink1	#{...primaryType}	🖼	🖼	#{...l
#{...ID}	#{...name}	#{...path}	goLink1	#{...primaryType}	🖼	🖼	#{...l

17. In the Property Inspector, under the **Behavior** tab, set the `ContentDelivery` property to `immediate`.

18. To view the page in a browser, under the Application Navigator, right-click the page and choose **Run**. The `advancedSearch` page displays in the browser.

19. Enter a *last modified* date and click the **advancedSearch** button. The files modified after that date are displayed, as shown in Figure 26–42.

Figure 26–42 Advanced Search Results



2/27/2012 Modified after 1/1/2012

ID	name	path	URI	primaryType	icon16	icon32	lastMo
MyFSConnection/g...	graph.jpg	/graph.jpg	goLink1	nt:file	JPG	JPG	2/27/
MyFSConnection/n...	nitendo_wii.jpg	/nitendo_wii.jpg	goLink1	nt:file	JPG	JPG	2/27/
MyFSConnection/i...	iPodSpeakerNews....	/iPodSpeakerNews...	goLink1	nt:file	🌐	🌐	2/27/
MyFSConnection/P...	PlasmaNews.html	/PlasmaNews.html	goLink1	nt:file	🌐	🌐	2/27/
MyFSConnection/p...	package-icon.jpg	/package-icon.jpg	goLink1	nt:file	JPG	JPG	2/27/
MyFSConnection/p...	plasma.jpg	/plasma.jpg	goLink1	nt:file	JPG	JPG	2/27/
MyFSConnection/...	WIINews.html	/WIINews.html	goLink1	nt:file	🌐	🌐	2/27/
MyFSConnection/g...	gray_box_icon.jpg	/gray_box_icon.jpg	goLink1	nt:file	JPG	JPG	2/27/
MyFSConnection/...	warning.jpg	/warning.jpg	goLink1	nt:file	JPG	JPG	2/27/
MyFSConnection/q...	question_mark.jpg	/question_mark.jpg	goLink1	nt:file	JPG	JPG	2/27/
MyFSConnection/F...	FODforWebCenter...	/FODforWebCente...	goLink1	nt:file	W	W	2/27/
MyFSConnection/i...	ipodspeakers.jpg	/ipodspeakers.jpg	goLink1	nt:file	JPG	JPG	2/27/
MyFSConnection/F...	FusionOrderDemo...	/FusionOrderDemo...	goLink1	nt:file	JPG	JPG	2/27/

26.5.8 What Happens at Runtime

Clicking the **search** button at runtime invokes the `search` method and the values provided through the UI are used as the parameters for the search. At runtime, you can perform the wild (`%`) card search. For example, to search for files that have `.jpg` extension, enter `/` in the **search_path** field, enter `%jpg` in the namePattern field and then click **Search**. All files with the `.jpg` extension will display in the read-only table.

At runtime the JCR data control uses the given parameters to construct an `XPath` query for the given parameters. For the simple search example, the query is:

```
Non-recursive:
XPath query /jcr:root/element(*, nt:file)[jcr:like(ojcr:local-name(), '%jpg%')]

Recursive:
XPath query /jcr:root//element(*, nt:file)[jcr:like(ojcr:local-name(), '%jpg%')]
```

In the advanced search example, first a backing bean is added to the page, because the backing bean is required to construct the `predicate` parameter value of the `advancedSearch` method. Then the **Panel Form Layout UI** component is dropped onto the page. In this component, the `InputDate` component is dropped, which is used at runtime to supply the date-based search criterion. The `advancedSearch` method predicates parameter allows for a combination of predicates to be supplied to the `search` method. Each can specify the value of an item's properties that must apply for the search. In this example, only a modification date is tested in the predicates, but potentially multiple tests could be included, for example a modification date and a `mimeType`.

The backing bean's `getPredicates` method is hardcoded to construct the `predicates` method from the date provided by the page at runtime. At design time, the return value of the `predicates` method is bound into the predicates `advancedSearch` method parameter. At runtime this invokes the getPredicates method before invoking the advancedSearch method to construct the correct predicate value.

At runtime the JCR data control uses the given parameters to construct an XPath query for the given parameters. For this example the query is:

```
/jcr:root//element(*, nt:hierarchyNode)[jcr:content/@jcr:lastModified >
xs:dateTime('2009-02-15T00:00:00.000+05:30')]
```

26.5.9 Using Search Capabilities

Consider the following points while adding search capabilities:

- How certain operations work depends on the implementation of the adapter and the underlying repository. While read and query operations are similar, full text search works differently. Another example is, the file system and Oracle Portal adapters do not support search based on the primaryType attribute. The only supported way to search based on type is through the element (*, type) construct.
- If you use the Oracle Portal adapter, then the behavior of search functionality varies depending on whether Oracle Text is enabled or not. If Oracle Text is disabled, then the search is performed in the Oracle Portal content metadata. With Oracle Text turned on, all indexed content is searched, which includes the contents of files. This also applies to Content Server. That is, Content Server-based adapter performs full text index operation on its documents using Oracle Text.
- The Oracle Portal adapter does not support translations and only returns content in the base language of a page group. Searching across multiple page groups with different base languages is not supported.

27 Creating Content Presenter Display Templates

This chapter describes the out-of-the-box Content Presenter display templates, how to create new display templates, and how to make display templates available to users.

> **Note:** Content Presenter can only be used with Content Server-based content. No other content repository connection types are supported.

This chapter includes the following topics:

27.1 About Content Presenter Display Templates

A *Content Presenter display template* is a JSFF file (JSF page fragment) that defines how Content Presenter renders content items (including images and text) on a portal or Framework application page. WebCenter Portal provides several out-of-the-box display templates to get you started, but you can also create your own templates to solve specific display requirements.

Some typical situations where Content Presenter display templates provide value are:

- Providing different layouts for different parts of a page. For example, you may have articles from different sources on the same page, each requiring its own layout (for more information, see Section 27.3.3, "Defining Multiple-Item Display Templates").
- Presenting content based on the capabilities of the viewing device. You can provide display templates that respond to whether the viewing device is a standard monitor, tablet or smart phone (for more information, see Section 27.3.4, "Using Responsive Templates").

Making content available through Content Presenter display templates lets you solve complex display issues through a standardized template rather than doing each individual layouts by hand. By making display templates available to users you enable them to solve layout requirements based on predefined department or company standards without developer involvement.

> **Tip:** You can find sample display templates in `$ORACLE_HOME/jdeveloper/webcenter/samples/contentpresenter`. These sample files were installed as part of WebCenter Portal's extension for Oracle JDeveloper.

Display templates can use the full set of Rich ADF components, so you can quickly and easily create robust and attractive templates to display your content. Note, however, that you are not required to use these components in your template.

A Content Presenter display template can handle either single-content items, multiple-content items, or combinations of the two. For example, a multiple content item template might render tabs for each item and then call a single item template to render the details of a selected item.

Each content item is associated with a specific *content type* defined in the WebCenter Content repository. A content type defines the properties of the content item. Content types can map to WebCenter Content profile definitions and Site Studio region definitions.

> **Tip:** Oracle recommends that you use Content Presenter ADF templates to integrate Site Studio and WebCenter Portal instead of Site Studio region templates. The recommended flow is:
>
> - Develop region definitions in Site Studio
> - Develop ADF templates referencing region definitions using JDeveloper
> - Publish the templates and import them into Portal Server
> - Use Content Presenter to render the content and to enable users to contribute content

Content types are created on the content repository (WebCenter Portal Content Server). As a Content Presenter display template developer, you need to know the names of the properties defined for the associated content type so that you can define how to display the selected content item(s) on the page.

> **Tip:** One way to determine the properties for the existing content types defined in WebCenter Content is to use the Content Presenter Configuration dialog in a portal. For a detailed description of this technique, see Section 27.3.8, "Discovering Content Type Property Names."

At runtime, an authorized end user can choose a display template in the Content Presenter Configuration dialog. For more information about best practices and determining when and how to use Content Presenter templates, see the blog entry at:

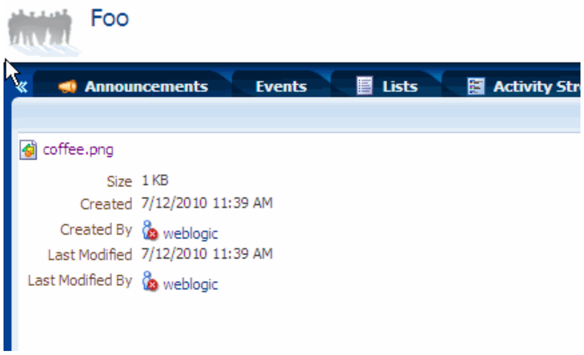
```
http://www.ateam-oracle.com/portal-and-content-content-integration-best-practices
```

27.2 Using the Out-of-the-Box Display Templates

WebCenter Portal provides several out-of-the-box Content Presenter display templates. These pre-built templates provide options for displaying single content items and multiple content items.

For example, the Default Document Details View template displays detailed information about any single content item including creation date, modification date, created by username, modified by username, and path. Figure 27.4 shows a content item displayed at runtime with this template.

Figure 27–1 Default Document Details View Display Template

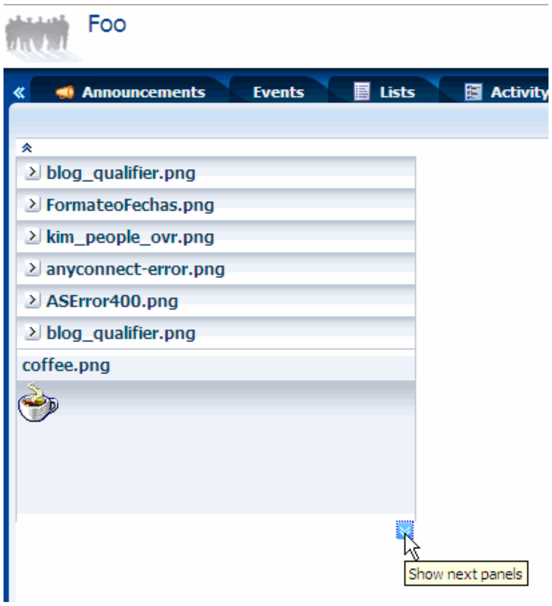


coffee.png

Size 1 KB
Created 7/12/2010 11:39 AM
Created By weblogic
Last Modified 7/12/2010 11:39 AM
Last Modified By weblogic

Several options are provided for displaying multiple content items, such as the Accordion View, which displays multiple content items in an accordion format. In this format, each item can be expanded to display its details, as shown in Figure 27–2. (Note that one item will always be open in an accordion view. That is, you cannot close all of the items, you can only change which single item is open at any time.)

Figure 27–2 Accordion View Display Template



blog_qualifier.png
FormateoFechas.png
kim_people_ovr.png
anyconnect-error.png
ASError400.png
blog_qualifier.png
coffee.png

For a complete list of out-of-the-box display templates, see Section 29.7.1, "Content Presenter Task Flow Parameters and Out-of-the-Box Display Templates."

27.3 Creating Content Presenter Display Templates

If the out-of-the-box display templates (see Section 27.2, "Using the Out-of-the-Box Display Templates") do not meet your needs, you can define custom Content Presenter templates.

> **Tip:** As well as creating new Content Presenter display templates, you can also copy one of the out-of-the-box templates and modify it.

This section discusses these topics:

- Section 27.3.1, "About Content Presenter Display Templates"
- Section 27.3.2, "Creating Single-Item Display Templates"
- Section 27.3.3, "Defining Multiple-Item Display Templates"
- Section 27.3.4, "Using Responsive Templates"
- Section 27.3.5, "Extending Responsive Templates"
- Section 27.3.6, "Using Image Renditions in Content Presenter Display Templates"
- Section 27.3.7, "Using EL Expressions to Retrieve Content Item Information"
- Section 27.3.8, "Discovering Content Type Property Names"
- Section 27.3.9, "Referencing External Files in Display Templates"
- Section 27.3.10, "Referencing Site Studio Region Elements in a Custom View"
- Section 27.3.11, "Using a Content Presenter Display Template"

27.3.1 About Content Presenter Display Templates

Depending on your needs, the approach you take to defining Content Presenter display templates will vary. Typically, you define display templates for specific single items of content, then define a multiple content item display template that includes calls to the single item display templates.

Template definitions can include calls to other display templates in any of the following ways:

- A single content item display template can call another single content item display template.
- A multiple content item display template can call a single content item display template (as shown in the examples below).
- A multiple content item display template can call another multiple content item display template.

The basic tasks for creating Content Presenter display templates include:

- Deciding whether to create a single or multiple item display template. See Section 27.3.2, "Creating Single-Item Display Templates" and Section 27.3.3, "Defining Multiple-Item Display Templates."
- Deciding what kind of information you want to display with content items. Consider also, for example, using WebCenter Portal's EL expressions in your template to retrieve and display this information. See Section 27.3.7, "Using EL Expressions to Retrieve Content Item Information," and Appendix G, "Expression Language Expressions" for more information about using EL expressions.

- Designing the look and feel of the template. In addition to standard JSFF constructs, display templates can use ADF components. See *Web User Interface Developer's Guide for Oracle Application Development Framework*.
- Exporting the template as a portal resource. See Section 27.5.1, "Export a Content Presenter Display Template as a Portal Resource."
- Configuring Content Presenter to use Coherence as the caching mechanism for production (optional, but recommended) and HA environments (required) as described in Section 27.7, "Configuring Coherence as the Caching Mechanism."

27.3.2 Creating Single-Item Display Templates

Examples of single content items for which you may want to create Content Presenter display templates are:

- Individual items to display with a specific look and feel on a page.
- Different views of a specific type of item (such as short and detailed views of an article).
- Different versions of a similar item (such as Press Releases that may be formatted differently for different groups and using a different set of properties).

The definition of a single content item display template uses the JSP tags listed in Table 27–1.

Table 27–1 Content Display Template Tags for Single Content Items

JSP Tag	Description	Example

`contentTemplateDef`	Required. Defines a single content item template.
	Attributes:
	`var` - Specifies the content node that will be rendered by this display template. In the template definition code, you can use the EL expressions described in Section 27.3.7.1, "Retrieving Basic Information About a Content Item" to retrieve required information about the node.
		`<dt:contentTemplateDef var="node">`
		`  <af:outputText value="#{node.name}" />`
		`</dt:contentTemplateDef>`

`renderProperty`	Optional. Retrieves and renders the string value(s) of the specified node property inline.
	Attributes:
	`id` - Identifies this component. This value must be unique within the closest parent component that is a naming container.
	`name` - Specifies the name of the property to get. If this is a system property (`cm_createdBy`, `cm_createdDate`, `cm_modifiedDate`, and `cm_path`) then the value on the node will be used. If not specified, then the `primaryProperty` will be used if defined.
	`node` - Specifies the node to use. This value can either be a bound attribute to a managed bean, or a request attribute variable.
	`blockSize` - Specifies the size of the blocks in bytes, to read the bytes of a binary property. Default is 2048 bytes.
	`startIndex` - Specifies the index (from 0) in the document's bytes at which to start printing. Defaults to 0.
	`endIndex` - Specifies the index (from 0) in the document's bytes at which to stop printing. Defaults to value of `blockSize`.
	`rendered` - Specifies whether or not this component should be rendered (during Render Response Phase), or processed on any subsequent form submit. The default value is `true`.
		`<!--`
		`  Handling of text-based primary`
		`  properties (HTML, text, etc.).`
		`-->`
		`<dt:contentTemplateDef var="node">`
		`    <cmf:renderProperty id="rp1"`
		`     name="#{node.primaryProperty.name}"`
		`      node="#{node}"/>`
		`</dt:contentTemplateDef>`

Table 27–1 (Cont.) Content Display Template Tags for Single Content Items

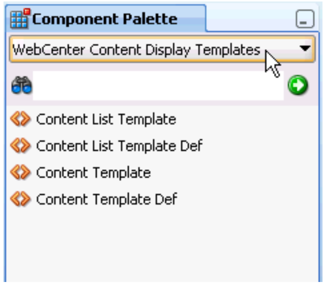
JSP Tag	Description	Example

`contentTemplate`	Optional. Nested under `contentTemplateDef`.
	Calls another single item template.
	Attributes:
	`node` - Required. Specifies the content repository node that should be displayed.
	`nodesHint` - Optional. When the display template is called in an iterating component, allows the pre-inclusion of all possible templates. This attribute is not needed when `contentTemplate` is used inside a `contentTemplateDef` tag.
	`view` - Optional. Specifies the target view name.
	`id` - Optional. Specifies the JSF component ID.
	`rendered` - Optional. Specifies whether the component should be rendered.
		`<dt:contentTemplateDef var="node">`
		`  <af:outputText value="#{node.name}" >`
		`  <dt:`**`contentTemplate`**` node="#{node}"`
		`     view="templates.pressrelease.item"`
		`     />`
		`  </af:outputText>`
		`</dt:contentTemplateDef>`

To create a display template for a single content item:

1. In JDeveloper, create a JSFF file:
   a. From the **File** menu, choose **New**.
   b. In the New Gallery dialog, expand **Web Tier**, select **JSF**, then **JSF Page Fragment**.
   c. Click **OK**.
   d. In the Create New JSF Page Fragment dialog, enter a name for the display template file.
   e. Set the Directory field to point to the `oracle/webcenter/portalapp/pages` folder of your portal Web project. This directory must be set from the correct root path. In JDeveloper, the root path is *PROJECT_NAME* > Web Content. On the file system, the root path is *PROJECT_ROOT*`/public_html`. For example: *PROJECT_ROOT*`/public_html/oracle/webcenter/portalapp/pages`. A good practice is to first create a subfolder in `pages` and store the JSFF in the subfolder.
2. Select **View**, then **Component Palette** to open the Component Palette.
3. From the dropdown list at the top of the Component Palette (Figure 27–3):
   - Select **WebCenter Content Display Templates** for a list of display template tags.
   - Select **WebCenter Content Management Faces** for the `renderProperty` tag.

Figure 27–3 Content Display Template Tags in Component Palette



4. In Source view, drag and drop the required display template tags from the Component Palette onto the page to define your template. Refer to Table 27–1 for information about each tag and required parameter values.

Example 27–1 and Example 27–2 show sample single content item display template definitions. These examples illustrate a use case where a certain kind of document (a press release) is produced by two different departments inside a company, and each department has defined its own content type and properties. These sample Content Presenter display templates allow these two different content types to be displayed in a consistent manner.

The template shown in Example 27–1 handles a press release that uses a property named `xHeading` to describe the heading of the press release document, and `xDestinationUrl` to describe the location of the document. To learn how you can retrieve these property names for a given content type, see Section 27.3.8, "Discovering Content Type Property Names."

Example 27–1 Sample Content Presenter Display Template for a Press Release Document

```
<?xml version = '1.0'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page"
          version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:dt="http://xmlns.oracle.com/webcenter/content/templates">
   <dt:contentTemplateDef var="node">
      <af:goImageLink text="#{node.propertyMap['xHeading'].value}"
                      id="gil1"
                      icon="#{node.icon.smallIcon}"
                      destination="#{node.propertyMap['xDestinationUrl'].value}"
                      targetFrame="_blank">
      </af:goImageLink>
   </dt:contentTemplateDef>
</jsp:root>
```

The template shown in Example 27–2 handles a press release that uses a property named `dDocTitle` to describe the heading of the press release document, and `xLinkUrl` to describe the location of the document.

Example 27–2 Sample Content Presenter Template for Another Press Release Document

```
<?xml version = '1.0'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page"
          version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:dt="http://xmlns.oracle.com/webcenter/content/templates">
   <dt:contentTemplateDef var="node">
```

```
        <af:goImageLink text="#{node.propertyMap['dDocTitle'].value}"
                        id="gil1"
                        icon="#{node.icon.smallIcon}"
                        destination="#{node.propertyMap['xLinkUrl'].value}"
                        targetFrame="_blank">
        </af:goImageLink>
   </dt:contentTemplateDef>
</jsp:root>
```

27.3.3 Defining Multiple-Item Display Templates

Examples of multiple content items for which you may want to create Content Presenter display templates are:

- A group of similar items that you want to display on a page, such as a list of books or an employee directory of pictures.
- Query results, such as all documents modified in the last week.
- A list of all documents in a WebCenter Content folder.

A Content Presenter display template can also combine both single and multiple items. For example, a multiple content item template might render tabs for each item and then call a single item template to render the details of a selected item. For an example of how to do this, see the A-Team blog entry "Enable Content Editing of Iterative Components."

The definition of a multiple content item display template uses the JSP tags listed in Table 27–2.

Table 27–2 Content Display Template Tags for Multiple Content Items

JSP Tag	Description	Example
contentListTemplateDef	Required. Defines the multiple content item template. **Attributes**: var - Specifies the content node that will be rendered by this display template. In the template definition code, you can use the EL expressions described in Section 27.3.7.1, "Retrieving Basic Information About a Content Item" to retrieve required information about the node.	<dt:**contentListTemplateDef** var="nodes"> <af:iterator value="#{nodes}" var="node"> <af:outputText value="#{node.name}" /> </af:iterator> </dt:**contentListTemplateDef**>
contentListTemplate	Optional. Nested under contentListTemplateDef. Calls another multiple item template. **Attributes**: nodes - Required. Provides the list of VCR nodes that should be displayed category - Required. Specifies the target template category. view - Required. Specifies the target view name. id - Optional. Specifies the JSF component ID. rendered - Optional. Specifies whether the component should be rendered.	<dt:contentListTemplateDef var="nodes"> <!-- Reuse the default bulleted list view, but indent it with a <blockquote> --> <f:verbatim> <blockquote> </f:verbatim> <dt:**contentListTemplate** nodes="#{nodes}" category="oracle.webcenter.content. templates.default.category" view="oracle.webcenter.content. templates.default.list.bulleted"/> <f:verbatim> </blockquote> </f:verbatim> </dt:contentListTemplateDef>
contentTemplate	Optional. Nested under contentListTemplateDef. Calls a single item template. **Attributes**: node - Required. Specifies the content repository node that should be displayed. nodesHint - Optional. When the display template is called in an iterating component, allows the pre-inclusion of all possible templates. This attribute is usually required when contentTemplate is used inside a contentListTemplateDef tag. view - Optional. Specifies the target view name. id - Optional. Specifies the JSF component ID. rendered - Optional. Specifies whether the component should be rendered.	<dt:contentListTemplateDef var="nodes"> <af:iterator rows="0" var="node" varStatus="iterator" value="#{nodes}"> <dt:**contentTemplate** node="#{node}" view="templates.pressrelease.listitem" nodesHint="#{nodes}"/> </af:iterator> </dt:contentListTemplateDef>

To define a display template for multiple content items:

1. In JDeveloper, create a JSFF file and open the Component Palette, as described in Step 1 through Step 3 in Section 27.3.2, "Creating Single-Item Display Templates."
2. In Source view, drag and drop the required display template tags from the Component Palette onto the page. Refer to Table 27–2 for information about each tag and required parameter values.

Example 27–3 shows a sample multiple content item display template definition.

Example 27–3 Sample display template definition for the display of multiple press releases (press-release-list-view.jsff)

This template definition iterates over the data items selected for display, and processes them according to the referenced view (`view="mycorp.content.templates.pressrelease.listitem"`).

```
<?xml version = '1.0'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:dt="http://xmlns.oracle.com/webcenter/content/templates">
   <dt:contentListTemplateDef var="nodes">
      <af:panelGroupLayout layout="scroll" id="nodeListPanel" valign="middle">
        <af:iterator rows="0" var="node" varStatus="iterator" value="#{nodes}">
           <dt:contentTemplate node="#{node}"
               view="mycorp.content.templates.pressrelease.listitem"
               nodesHint="#{nodes}"/>
        </af:iterator>
      </af:panelGroupLayout>
   </dt:contentListTemplateDef>
</jsp:root>
```

27.3.4 Using Responsive Templates

Using CSS3 media queries, you can render content to adapt to conditions such as screen resolution. The out-of-the-box Content Presenter templates "Articles View" and "Full Articles View" are examples of how CSS3 media queries can be used in a Content Presenter template for a responsive layout. For information about how these responsive templates can be extended, see Section 27.3.5, "Extending Responsive Templates." For information about Content Presenter's out-of-the-box display template parameters, see Section 29.7.1, "Content Presenter Task Flow Parameters and Out-of-the-Box Display Templates." For information about optimizing viewport settings for mobile devices such as smart phones and tablets, see the "Optimizing Portals for Mobile Devices" section in *Building Portals with Oracle WebCenter Portal*.

- Section 27.3.4.1, "Prerequisites"
- Section 27.3.4.2, "Displaying Multiple Articles"
- Section 27.3.4.3, "Using CSS3 Media Queries"

27.3.4.1 Prerequisites

The Articles View and Full Article View templates described in Section 27.3.4.2, "Displaying Multiple Articles," rely on the Site Studio `RD_ARTICLE` region definition. Consequently, Site Studio must be enabled in WebCenter Content to allow the Articles View and Full Article View Content Presenter templates to be used.

Follow the steps below to enable Site Studio and seed Content Server with the `RD_ARTICLE` region definition:

1. Enable Site Studio (see the "Understanding Site Studio Integration" section in *Building Portals with Oracle WebCenter Portal*).
2. Start (or restart) WebCenter Portal after Site Studio has been enabled (this will seed the `RD_ARTICLE` region definition).

27.3.4.2 Displaying Multiple Articles

The template definition in Example 27–4 iterates over the data items selected for display, and uses three style classes:

- **`article`** - applied to each content item
- **`article-3`** - applied to each content item that will be in the first column if the page is split into rows of three columns
- **`article-2`** - applied to each content item that will be in the first column if the page is split into rows of two columns

The style classes are defined in the `articles.css` style sheet.

Example 27–4 Sample display template definition for displaying multiple articles (articles.jsff)

```
<?xml version = '1.0'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:dt="http://xmlns.oracle.com/webcenter/content/templates"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:rah="http://xmlns.oracle.com/webcenter/resourcehandler"
          xmlns:tr="http://myfaces.apache.org/trinidad">
   <dt:contentListTemplateDef var="nodes">
      <af:resource type="css"
source="/oracle/webcenter/content/templates/seeded/articles.css"/>
      <af:iterator rows="0" var="node" varStatus="iterator" value="#{nodes}"
                   id="it0">
         <h:panelGroup styleClass="#{(iterator.index % 3 == 0) ? 'article-3 ' :
''}#{(iterator.index % 2 == 0) ? 'article-2 ' : ''}article"
                       id="pg1">
            <af:commandLink immediate="true" partialSubmit="true" id="cl2">
               <rah:resourceActionBehavior id="rah1"

serviceId="oracle.webcenter.content.presenter"
                                           resourceId="#{node.id}"
                                           resourceTitle="#{node.propertyMap['RD_
ARTICLE:TITLE'].asTextHtml}"
                                           useResourcePopup="never"/>
               <f:attribute name="taskFlowInstId"
                            value="a5fafea8-90e6-4972-997d-314401b6c98b"/>
               <f:attribute name="datasourceType" value="dsTypeSingleNode"/>
               <f:attribute name="datasource"

value="#{node.id.repositoryName}#dDocName:#{node.propertyMap['dDocName'].value}"/>
               <f:attribute name="templateView"

value="oracle.webcenter.content.templates.sitestudio.fullarticle"/>
               <f:attribute name="regionTemplate" value="#{false}"/>
               <af:outputText value="#{node.propertyMap['RD_
ARTICLE:IMAGE'].asTextHtml}"
                              escape="false" id="ot4"/>
               <tr:panelHeader text="#{node.propertyMap['RD_
ARTICLE:TITLE'].asTextHtml}"
                               id="ph1">
                  <af:outputText value="#{node.propertyMap['RD_
ARTICLE:SUMMARY'].asTextHtml}"
                                 escape="false" id="ot3"/>
               </tr:panelHeader>
            </af:commandLink>
         </h:panelGroup>
      </af:iterator>
   </dt:contentListTemplateDef>
</jsp:root>
```

27.3.4.3 Using CSS3 Media Queries

The style sheet in Example 27–5 uses media queries to render the content in different ways depending on the width of the browser.

Example 27–5 Style sheet using CSS3 Media Queries (articles.css)

```
/* Default styles */
.article {
  display: block;
  float: left;
  width: 31.623931623931625%;
  margin-left: 2.564102564102564%;
  margin-bottom: 1em;
}
.article-3 {
  margin-left: 0;
  clear: both;
}
.article img {
  width: 100%;
  margin: 0 0 .25em;
  float: none;
  padding-top: 0;
  display: block;
  border: 0;
}
.article h1 {
  font-size: 1.5em;
}

@media only screen and (max-width : 480px) {
  /* up to width of iPhone (excluding iPhone 5 in landscape) */
  .article {
    margin-top: .5em;
    float: left;
    display: inline;
    width: 100%;
    margin-left: 0;
  }
  .article-3 {
    width: 100%;
    clear: none;
  }
  .article img {
    margin-right: 4%;
    width: 48%;
    float: left;
  }
  .article {
    font-size: 1em;
  }
  .article h1 {
    font-size: 1.25em;
  }
}

@media only screen and (min-width : 481px) and (max-width : 780px) {
  /* up to the width of iPad in portrait and iPhone 5 in landscape */
  .article {
    display: block;
    float: left;
    width: 48.717948717948718%;
    margin-left: 2.564102564102564%;
    clear: none;
  }
  .article-3 {
    margin-left: 2.564102564102564%;
    clear: none;
  }
  .article-2 {
    margin-left: 0;
    clear: both;
  }
  .article h1 {
    font-size: 1.25em;
  }
}

@media only screen and (min-width : 769px) and (max-width : 1024px) {
  /* up to the width of iPad in landscape */
}

@media only screen and (min-width : 1025px) {
  /* desktop */
}
```

27.3.5 Extending Responsive Templates

These section describes the steps required to modify the out-of-the-box templates if they don't meet your local requirements. For information about optimizing viewport settings for mobile devices such as smart phones and tablets, see the "Optimizing Portals for Mobile Devices" section in *Building Portals with Oracle WebCenter Portal*.

This section includes the following subsections:

- Section 27.3.5.1, "Extending the Articles View Template"
- Section 27.3.5.2, "Extending the Full Article View Template"
- Section 27.3.5.3, "Adapting the Out-of-the-Box Templates"

27.3.5.1 Extending the Articles View Template

To extend the Articles View template follow the steps below:

1. Create an empty template for displaying multiple items (see Section 27.3.3, "Defining Multiple-Item Display Templates") and copy the contents of

articles.jsff (located in the JDEVELOPER/webcenter/samples/contentpresenter/ directory) into the empty template.

2. Embed the CSS used by artices.jsff into the new template by changing:

```
<af:resource type="css"
source="/oracle/webcenter/content/templates/seeded/articles.css"/>
```

To:

```
<af:resource type="css">
/* Default styles */
.article {
  display: block;
  float: left;
  width: 31.623931623931625%;
  margin-left: 2.564102564102564%;
  margin-bottom: 1em;
}
.article-3 {
  margin-left: 0;
  clear: both;
}
.article img {
  width: 100%;
  margin: 0 0 .25em;
  float: none;
  padding-top: 0;
  display: block;
  border: 0;
}
.article h1 {
  font-size: 1.5em;
}

@media only screen and (max-width : 480px) {
  /* up to width of iPhone */
  .article {
    margin-top: .5em;
    float: left;
    display: inline;
    width: 100%;
    margin-left: 0;
  }
  .article-3 {
    width: 100%;
    clear: none;
  }
  .article img {
    margin-right: 4%;
    width: 48%;
    float: left;
  }
  .article {
    font-size: 1em;
  }
  .article h1 {
    font-size: 1.25em;
  }
}
```

```
@media only screen and (min-width : 481px) and (max-width : 780px) {
  /* up to the width of iPad in portrait */
  .article {
    display: block;
    float: left;
    width: 48.71794871794871%;
    margin-left: 2.564102564102564%;
    clear: none;
  }
  .article-3 {
    margin-left: 2.564102564102564%;
    clear: none;
  }
  .article-2 {
    margin-left: 0;
    clear: both;
  }
  .article h1 {
    font-size: 1.25em;
  }
}

@media only screen and (min-width : 769px) and (max-width : 1024px) {
  /* up to the width of iPad in landscape */
}

@media only screen and (min-width : 1025px) {
  /* desktop */
}
</af:resource>
```

3. Edit the new template to adapt it to your requirements (see Section 27.3.5.3, "Adapting the Out-of-the-Box Templates").
4. Export the new template as a Portal Resource (see Section 27.5.1, "Export a Content Presenter Display Template as a Portal Resource").
5. Upload the new template to your WebCenter Portal or Framework application (see Section 27.5.2, "Upload the New Content Presenter Display Template").

27.3.5.2 Extending the Full Article View Template

Follow the steps below to extend the Full Article View template:

1. Create an empty template for displaying a single content item (see Section 27.3.2, "Creating Single-Item Display Templates") and copy the contents of `full-article.jsff` (located in the `JDEVELOPER/webcenter/samples/contentpresenter/` directory) into the empty template.
2. Embed the CSS used by `full-artice.jsff` into the new template by changing:

   ```
   <af:resource type="css"
   source="/oracle/webcenter/content/templates/seeded/articles.css"/>
   ```

   To:

   ```
   <af:resource type="css">
   /* Default styles */
   .full-article h1 {
     font-size: 1.5em;
   ```

```
}
.full-article-image img {
  margin-left: 4%;
  width: 48%;
  float: right;
}

@media only screen and (max-width : 480px) {
  /* up to width of iPhone */
  .full-article-image img {
    margin-left: 0;
    width: 100%;
    float: none;
  }
}

@media only screen and (min-width : 481px) and (max-width : 780px) {
  /* up to the width of iPad in portrait */
}

@media only screen and (min-width : 769px) and (max-width : 1024px) {
  /* up to the width of iPad in landscape */
}

@media only screen and (min-width : 1025px) {
  /* desktop */
}
</af:resource>
```

3. Edit the new template to adapt it your requirements (see Section 27.3.5.3, "Adapting the Out-of-the-Box Templates").
4. Export the new template as a Portal Resource (see Section 27.5.1, "Export a Content Presenter Display Template as a Portal Resource").
5. Upload the new template (see Section 27.5.2, "Upload the New Content Presenter Display Template").

27.3.5.3 Adapting the Out-of-the-Box Templates

This section describes changes you may want to make to the Articles View and Full Article View templates, and outlines how you could go about making those changes. For example:

- You may want to update the templates to support a responsive layout on older browsers like Internet Explorer 8.
- You may want to update the templates to work with a different region definition.

These extensions are described in the following sections:

- Section 27.3.5.3.1, "Supporting Responsive Layouts for Older Browsers"
- Section 27.3.5.3.2, "Using Different Region Definitions"
- Section 27.3.5.3.3, "Updating the Layout in a Template"

27.3.5.3.1 Supporting Responsive Layouts for Older Browsers

The current responsive templates rely on CSS3 media queries, which are not supported by older browsers, so you may want to use a third-party JavaScript library that can take the media queries and use JavaScript to enable a responsive design.

To do this:

- Create and deploy a custom Shared Library for WebCenter Portal containing the third-party JavaScript library (see Section 55.2, "Developing Task Flows, Data Controls, and Managed Beans for WebCenter Portal").
- Add a reference to a third-party JavaScript library to the template (where `path/to/3rd/party/library.js` is the path to the JavaScript file within the Custom Shared Library):

```
<af:resource type="javascript" source="path/to/3rd/party/library.js"/>
```

27.3.5.3.2 Using Different Region Definitions

This section shows you how you can modify the region definitions in your responsive template, For example, you might have a region definition called `RD_NEWS` with four elements: `TITLE`, `LEAD`, `IMAGE`, and `BODY` (see Section 27.3.10, "Referencing Site Studio Region Elements in a Custom View"). You could then update the templates to reference this new region definition by changing references of `RD_ARTICLES` to `RD_NEWS` and changing the references of `SUMMARY` to `LEAD`.

News View

This template displays a list of news items (of type `RD_NEWS`) based on the Articles View template:

```
<?xml version = '1.0'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:dt="http://xmlns.oracle.com/webcenter/content/templates"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:rah="http://xmlns.oracle.com/webcenter/resourcehandler"
          xmlns:tr="http://myfaces.apache.org/trinidad">
   <dt:contentListTemplateDef var="nodes">
      <af:resource type="css"
source="/oracle/webcenter/content/templates/seeded/articles.css"/>
      <af:iterator rows="0" var="node" varStatus="iterator" value="#{nodes}"
                   id="it0">
         <h:panelGroup styleClass="#{(iterator.index % 3 == 0) ? 'article-3 ' :
''}#{(iterator.index % 2 == 0) ? 'article-2 ' : ''}article"
                       id="pg1">
            <af:commandLink immediate="true" partialSubmit="true" id="cl2">
               <rah:resourceActionBehavior id="rah1"

serviceId="oracle.webcenter.content.presenter"
                                           resourceId="#{node.id}"
                                           resourceTitle="#{node.propertyMap['RD_
NEWS:TITLE'].asTextHtml}"

                                           useResourcePopup="never"/>
               <f:attribute name="taskFlowInstId"
                            value="a5fafea8-90e6-4972-997d-314401b6c98b"/>
               <f:attribute name="datasourceType" value="dsTypeSingleNode"/>
               <f:attribute name="datasource"

value="#{node.id.repositoryName}#dDocName:#{node.propertyMap['dDocName'].value}"/>
               <f:attribute name="templateView"
                            value="oracle.webcenter.content.templates.newsitem"/>
               <f:attribute name="regionTemplate" value="#{false}"/>
               <af:outputText value="#{node.propertyMap['RD_
NEWS:IMAGE'].asTextHtml}"
```

```
                              escape="false" id="ot4"/>
               <tr:panelHeader text="#{node.propertyMap['RD_
NEWS:TITLE'].asTextHtml}"
                               id="ph1">
                  <af:outputText value="#{node.propertyMap['RD_
NEWS:LEAD'].asTextHtml}"
                                 escape="false" id="ot3"/>
               </tr:panelHeader>
            </af:commandLink>
         </h:panelGroup>
      </af:iterator>
   </dt:contentListTemplateDef>
</jsp:root>
```

News Item View

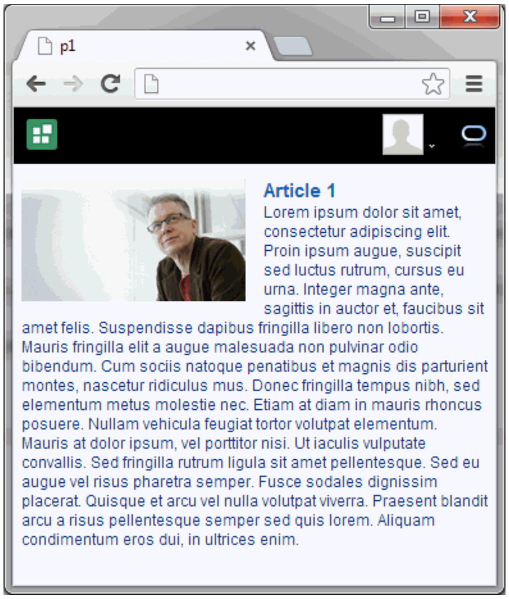
This template displays a full news item (`View ID: oracle.webcenter.content.templates.newsitem`) based on the Full Articles View template:

```
<?xml version = '1.0'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:dt="http://xmlns.oracle.com/webcenter/content/templates"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:tr="http://myfaces.apache.org/trinidad">
     <dt:contentTemplateDef var="node">
        <af:resource type="css"
source="/oracle/webcenter/content/templates/seeded/articles.css"/>
        <af:panelGroupLayout id="psl1" layout="vertical">
            <tr:panelHeader text="#{node.propertyMap['RD_NEWS:TITLE'].asTextHtml}"
                            styleClass="full-article" id="ph1">
                <tr:panelGroupLayout id="pgl1" styleClass="full-article-image">
                    <af:outputText value="#{node.propertyMap['RD_
NEWS:IMAGE'].asTextHtml}"
                                   escape="false" id="ot4"/>
                </tr:panelGroupLayout>
                <af:outputText value="#{node.propertyMap['RD_
NEWS:BODY'].asTextHtml}"
                               escape="false" id="ot3"/>
            </tr:panelHeader>
        </af:panelGroupLayout>
    </dt:contentTemplateDef>
</jsp:root>
```

27.3.5.3.3 Updating the Layout in a Template

You might want to change the layout of the templates to better suit your content. For example, in the single column layout the Articles View template will flow the text of an article summary under the image if the text is sufficiently long:

Figure 27–4 Article with Wide Layout

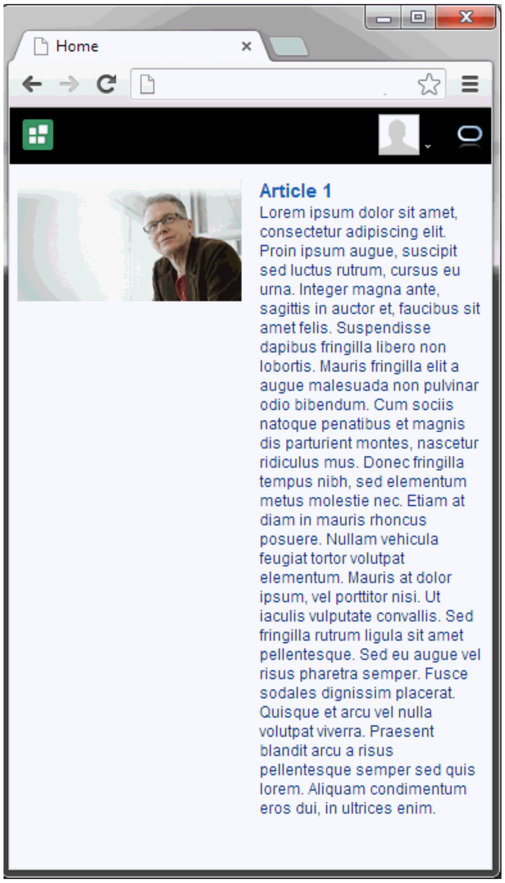


Article 1

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin ipsum augue, suscipit sed luctus rutrum, cursus eu urna. Integer magna ante, sagittis in auctor et, faucibus sit amet felis. Suspendisse dapibus fringilla libero non lobortis. Mauris fringilla elit a augue malesuada non pulvinar odio bibendum. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Donec fringilla tempus nibh, sed elementum metus molestie nec. Etiam at diam in mauris rhoncus posuere. Nullam vehicula feugiat tortor volutpat elementum. Mauris at dolor ipsum, vel porttitor nisi. Ut iaculis vulputate convallis. Sed fringilla rutrum ligula sit amet pellentesque. Sed eu augue vel risus pharetra semper. Fusce sodales dignissim placerat. Quisque et arcu vel nulla volutpat viverra. Praesent blandit arcu a risus pellentesque semper sed quis lorem. Aliquam condimentum eros dui, in ultrices enim.

You could change this so that the text doesn't flow under the image:

Figure 27–5 Article with Narrow Layout



Article 1

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin ipsum augue, suscipit sed luctus rutrum, cursus eu urna. Integer magna ante, sagittis in auctor et, faucibus sit amet felis. Suspendisse dapibus fringilla libero non lobortis. Mauris fringilla elit a augue malesuada non pulvinar odio bibendum. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Donec fringilla tempus nibh, sed elementum metus molestie nec. Etiam at diam in mauris rhoncus posuere. Nullam vehicula feugiat tortor volutpat elementum. Mauris at dolor ipsum, vel porttitor nisi. Ut iaculis vulputate convallis. Sed fringilla rutrum ligula sit amet pellentesque. Sed eu augue vel risus pharetra semper. Fusce sodales dignissim placerat. Quisque et arcu vel nulla volutpat viverra. Praesent blandit arcu a risus pellentesque semper sed quis lorem. Aliquam condimentum eros dui, in ultrices enim.

To do this, you could create a new template based on the Articles View template, add a style class to the block of text (`article-text`), and set the display CSS property for this style class to `table-cell` for the narrow layout:

```
<?xml version = '1.0'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:dt="http://xmlns.oracle.com/webcenter/content/templates"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:rah="http://xmlns.oracle.com/webcenter/resourcehandler"
          xmlns:tr="http://myfaces.apache.org/trinidad">
   <dt:contentListTemplateDef var="nodes">
      <af:resource type="css">
      /* Default styles */
      .article {
        display: block;
        float: left;
        width: 31.623931623931625%;
        margin-left: 2.564102564102564%;
        margin-bottom: 1em;
      }
      .article-3 {
        margin-left: 0;
        clear: both;
      }
      .article img {
        width: 100%;
        margin: 0 0 .25em;
        float: none;
        padding-top: 0;
        display: block;
        border: 0;
      }
      .article h1 {
        font-size: 1.5em;
      }

      @media only screen and (max-width : 480px) {
        /* up to width of iPhone */
        .article {
          margin-top: .5em;
          float: left;
          display: inline;
          width: 100%;
          margin-left: 0;
        }
        .article-3 {
          width: 100%;
          clear: none;
        }
        .article img {
          margin-right: 4%;
          width: 48%;
          float: left;
        }
        .article {
          font-size: 1em;
        }
        .article h1 {
          font-size: 1.25em;
        }
        /* Set the display CSS property to table-cell for the article-text style
class in the narrow layout */
        .article-text {
          display: table-cell;
        }
      }

      @media only screen and (min-width : 481px) and (max-width : 780px) {
        /* up to the width of iPad in portrait */
        .article {
          display: block;
          float: left;
          width: 48.717948717948718;
          margin-left: 2.564102564102564%;
          clear: none;
        }
        .article-3 {
          margin-left: 2.564102564102564%;
          clear: none;
        }
        .article-2 {
          margin-left: 0;
          clear: both;
        }
        .article h1 {
          font-size: 1.25em;
        }
      }

      @media only screen and (min-width : 769px) and (max-width : 1024px) {
        /* up to the width of iPad in landscape */
      }

      @media only screen and (min-width : 1025px) {
        /* desktop */
      }
      </af:resource>
      <af:iterator rows="0" var="node" varStatus="iterator" value="#{nodes}"
                   id="it0">
         <h:panelGroup styleClass="#{(iterator.index % 3 == 0) ? 'article-3 ' :
''}#{(iterator.index % 2 == 0) ? 'article-2 ' : ''}article"
                       id="pg1">
            <af:commandLink immediate="true" partialSubmit="true" id="cl2">
               <rah:resourceActionBehavior id="rah1"

serviceId="oracle.webcenter.content.presenter"
                                           resourceId="#{node.id}"
                                           resourceTitle="#{node.propertyMap['RD_
ARTICLE:TITLE'].asTextHtml}"
                                           useResourcePopup="never"/>
               <f:attribute name="taskFlowInstId"
                            value="a5fafea8-90e6-4972-997d-314401b6c98b"/>
               <f:attribute name="datasourceType" value="dsTypeSingleNode"/>
               <f:attribute name="datasource"

value="#{node.id.repositoryName}#dDocName:#{node.propertyMap['dDocName'].value}"/>
               <f:attribute name="templateView"
```

```
value="oracle.webcenter.content.templates.sitestudio.fullarticle"/>
               <f:attribute name="regionTemplate" value="#{false}"/>
               <af:outputText value="#{node.propertyMap['RD_
ARTICLE:IMAGE'].asTextHtml}"
                              escape="false" id="ot4"/>
               <tr:panelHeader text="#{node.propertyMap['RD_
ARTICLE:TITLE'].asTextHtml}"
                               id="ph1" styleClass="article-text">
                  <af:outputText value="#{node.propertyMap['RD_
ARTICLE:SUMMARY'].asTextHtml}"
                                 escape="false" id="ot3"/>
               </tr:panelHeader>
            </af:commandLink>
         </h:panelGroup>
      </af:iterator>
   </dt:contentListTemplateDef>
</jsp:root>
```

27.3.6 Using Image Renditions in Content Presenter Display Templates

In some cases you may want to use different renditions of an image in different circumstances. For example, you might want to use a large, high resolution image when the page containing the image is displayed using a desktop browser. However, if the same page is displayed on a mobile device, a large, high resolution image might not be appropriate given the smaller screen size and possible slower download speed. For mobile devices it would be better to display a smaller, lower resolution version, or rendition, of the image. Content Presenter display templates provide the capability of specifying which rendition of an image to display under which circumstances.

To enable the use of different image renditions, you can use EL expressions in your Content Presenter display templates to determine which image renditions to use when.

Note: Image renditions are not supported through CMIS.

This section includes the following topics:

- Section 27.3.6.1, "Prerequisites"
- Section 27.3.6.2, "Retrieving Image Rendition Information for Image Documents"
- Section 27.3.6.3, "Retrieving Image Renditions for Site Studio Region Elements"

27.3.6.1 Prerequisites

For full image rendition support, the WebCenter Content where your images are checked in must have Digital Asset Management (DAM) enabled. If DAM is not enabled, there is limited support for separate `web` and `thumbnail` renditions only. For information about enabling DAM, see the "Enabling Digital Asset Manager" section in *Administering Oracle WebCenter Portal*.

When DAM is enabled, different renditions are automatically created when an image is checked in, determined by the rendition set specified during check in. DAM provides some built-in rendition sets but the WebCenter Content administrator can also create new rendition sets. The individual renditions can then be referenced by name in Content Presenter display templates by using the appropriate EL expression.

For more information about DAM and rendition sets, see the "Working with Image and Video Conversions" chapter of *Managing Oracle WebCenter Content*.

Note: WebCenter Portal supports multiple renditions for images only, not video.

In addition, the following other prerequisites must also be met:

- You must be using WebCenter Content Release 11*g*R1 (11.1.1.9.0) or later.
- WebCenter Portal and WebCenter Content must be using the same OHS front-end.
- The `webContextRoot` parameter must be set in line with the common OHS front-end so that WebCenter Portal can find WebCenter Content objects, for example, `/cs`.
- Single sign-on must be enabled across WebCenter Portal and WebCenter Content.

27.3.6.2 Retrieving Image Rendition Information for Image Documents

To retrieve image rendition information for image documents in your Content Presenter display template, use the following EL expression:

```
node.renditionsMap['renditionName:renditionProperty']
```

Where:

- *`renditionName`* is:
  - for DAM implementations, the name of the rendition from the appropriate rendition set. For example, `web`, `thumbnail`, `preview`, or `lowres`.
  - for non-DAM implementations, either `web` or `thumbnail`.

  Note: The *`renditionName`* is not case sensitive, therefore `preview` refers to the same rendition as `Preview`.

- *`renditionProperty`* is the required rendition information.

  In most cases, you will want to retrieve the URL of the image rendition so that the rendition can be displayed on a page. To do this use the `url` property.

  You can also retrieve other information about the rendition, such as `name`, `type`, `width`, `height`, `resolution`, `size`, or `contentType`.

  Note: For `web` and `thumbnail` renditions, only `size`, `contentType`, and `url` are applicable; `name` returns the name of the native file, not of the web or thumbnail rendition.

For example to display the `preview` rendition of an image, add the following to your template:

```
<af:image source="#{node.renditionsMap['preview:url']}" shortDesc="Preview
rendition" id="imageContent3"/>
```

> **Note:** Wherever possible, `url` points to a static rendition URL for the image rendition on the WebCenter Content. If the static URL cannot be determined, the `url` uses the WebCenter Portal `showProperty` servlet.

Example 27–6 shows a Content Presenter display template that displays a carousel of images. If the carousel is displayed on a desktop device (`rendered="#{DeviceAgent.desktop}`), then the `a200` rendition is used for the images (`node.renditionsMap['a200:url']`). If the carousel is displayed on a mobile device (`rendered="#{DeviceAgent.mobile}`), then the smaller `thumbnail` rendition is used (`node.renditionsMap['thumbnail:url']`).

Example 27–6 Content Presenter Template Using Image Renditions

```
<?xml version='1.0' encoding='utf-8'?>
<!-- Copyright (c) 2014 Oracle and/or its affiliates.
All rights reserved. -->

<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:dt="http://xmlns.oracle.com/webcenter/content/templates"
          xmlns:f="http://java.sun.com/jsf/core">
  <dt:contentListTemplateDef var="nodes">
    <af:carousel id="c1"
                 value="#{nodes}"
                 var="node"
                 emptyText="#{templateBundle.EMPTY_NODES}"
                 inlineStyle="#{DeviceAgent.desktop ? '' : 'height:200px;'}">
      <f:facet name="nodeStamp">
        <af:carouselItem id="ci1"
                         text="#{node.isFolder ? node.name : (empty
node.propertyMap['dDocTitle'] ?
                               node.name :
node.propertyMap['dDocTitle'].value.stringValue)}"
                         shortDesc="#{not empty
node.propertyMap['xComments'].value.stringValue ?

node.propertyMap['xComments'].value.stringValue :
                                    node.primaryProperty.value.binaryValue.name}">
          <af:image id="cimg1"
                    source="#{node.primaryProperty.isImage ?
node.renditionsMap['a200:url'] :
                            node.icon.largeIcon}"
                    shortDesc="#{node.primaryProperty.value.binaryValue.name}"
                    rendered="#{DeviceAgent.desktop}"/>
          <af:image id="cimg2"
                    source="#{node.primaryProperty.isImage ?
node.renditionsMap['thumbnail:url'] : node.icon.largeIcon}"
                    shortDesc="#{node.primaryProperty.value.binaryValue.name}"
                    rendered="#{DeviceAgent.mobile}"/>

                </af:carouselItem>
            </f:facet>
        </af:carousel>
    </dt:contentListTemplateDef>
</jsp:root>
```

27.3.6.3 Retrieving Image Renditions for Site Studio Region Elements

The handling of image renditions for images in Site Studio region definitions is determined by way the region definitions are defined in Site Studio. You can either have a region definition that includes a single region element that defines the original image or a region definition that includes separate region elements for each image rendition. Your Content Presenter display template must use the appropriate EL expression according to how the region definition is set up.

For example, your region definition could have a single region element (`myimage`) for the original image, therefore to display a particular image rendition, you must use an EL expression where you can specify which rendition to retrieve from the WebCenter Content, for example, `highres` or `lowres`. Alternatively, if your region definition has separate region elements for the different image renditions, say one element (`desktop`) for a rendition suitable for desktop browsers and one (`mobile`) for a rendition more suited to mobile devices, you can use an EL expression that refers directly to the region element that defines the rendition that you want to use.

> **Tip:** If you anticipate adding further image renditions in the future, for example for new devices, it makes sense to create region definitions with single image region elements so that as new renditions are added, they can be included in your Content Presenter display templates without having to create new region elements.

- If the region definition includes a single region element that defines the original image, you can also specify which rendition of the image you want to use:

  ```
  node.propertyMap['regionDefinitionName:elementName/Rendition:renditionName'].as
  TextHtml
  ```

- To reference a region element within a region definition that defines a specific image rendition, use the following EL expression:

  ```
  node.propertyMap['regionDefinitionName:elementName'].asTextHtml
  ```

Where:

- *`regionDefinitionName`* is the name of the region definition.
- *`elementName`* is the name of the region element.
- *`renditionName`* is:
  - for DAM implementations, the name of the rendition from the appropriate rendition set. For example, `web`, `thumbnail`, `highres` or `lowres`.
  - for non-DAM implementations, either `web` or `thumbnail`.

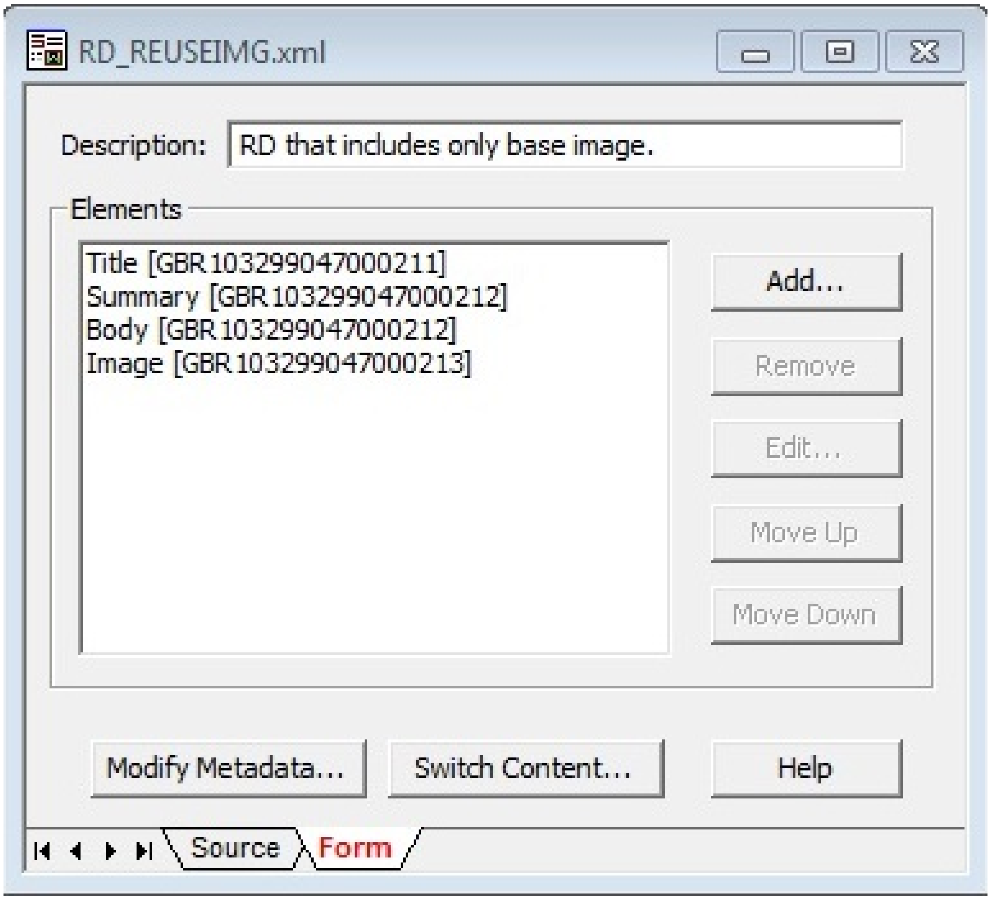
> **Note:** The *`renditionName`* is not case sensitive, therefore `preview` refers to the same rendition as `Preview`.

The EL expressions return an HTML `img` tag with a `src` element that points to the URL of the appropriate image rendition.

> **Note:** Wherever possible, the `src` URL points to a static rendition URL for the image rendition on the WebCenter Content. If the static URL cannot be determined, the `url` uses the WebCenter Portal `showProperty` servlet.

Figure 27–6 shows a Site Studio region definition (RD_REUSEIMG) for an article. The definition includes region elements for the title, summary, body and image of the article. The single image region element defines the original image (Image).

Figure 27–6 Region Definition with Single Image Region Element



RD_REUSEIMG.xml

Description: RD that includes only base image.

Elements

Title [GBR103299047000211]
Summary [GBR103299047000212]
Body [GBR103299047000212]
Image [GBR103299047000213]

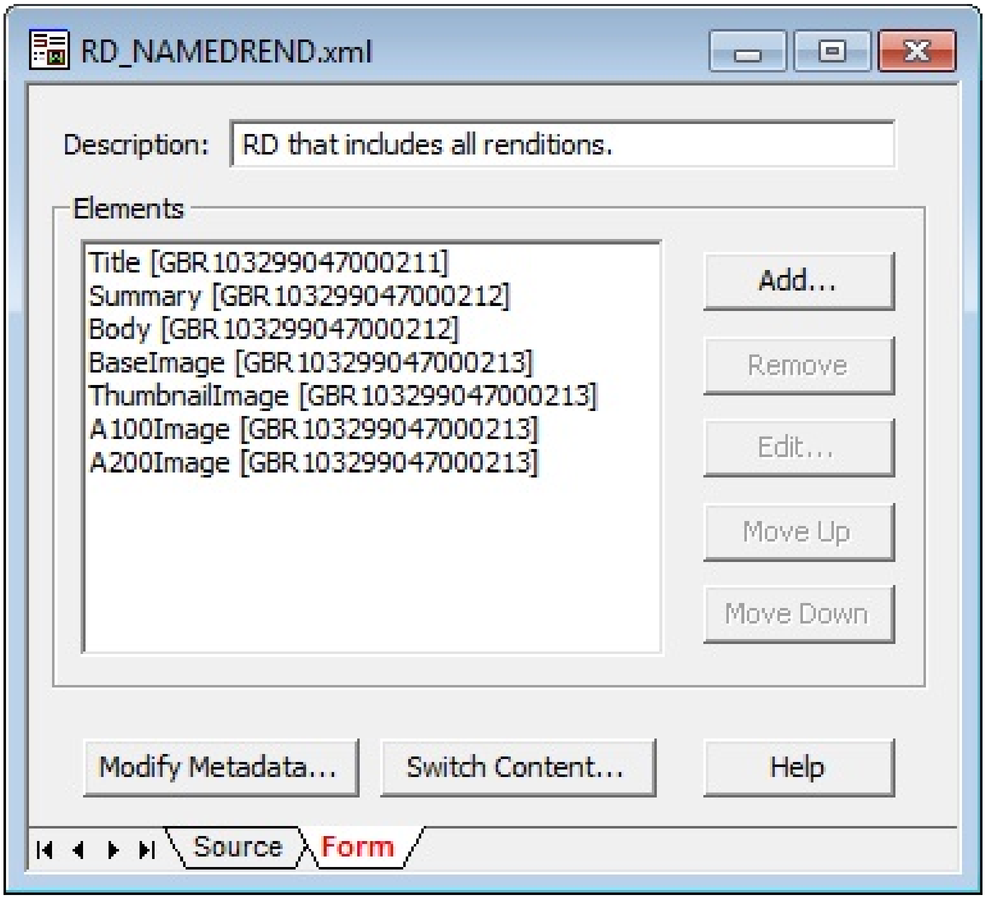
To use a lower resolution rendition (lowres) of the image on a mobile device, use the following code:

```
<af:outputText value="#{node.propertyMap['RD_
REUSEIMG:Image/Rendition:lowres'].asTextHtml}" escape="false" id="olmaget"
rendered="#{DeviceAgent.mobile}"/>
```

Note: If the specified *renditionName* does not exist for the image, the image's primary rendition is used instead.

Figure 27–7 shows a different region definition (RD_NAMEDREND) for a different article that includes separate region elements for the different possible renditions of the article image: BaseImage, ThumbnailImage, A100Image, and A200Image.

Figure 27–7   Region Definition with Region Elements for Named Renditions



RD_NAMEDREND.xml

Description: RD that includes all renditions.

Elements

Title [GBR103299047000211]
Summary [GBR103299047000212]
Body [GBR103299047000212]
BaseImage [GBR103299047000213]
ThumbnailImage [GBR103299047000213]
A100Image [GBR103299047000213]
A200Image [GBR103299047000213]

To use the `ThumbnailImage` region element to render the image on a mobile device, use the following code:

```
<af:outputText value="#{node.propertyMap['RD_
NAMEDREND:ThumbnailImage'].asTextHtml}" escape="false" id="olmaget"
rendered="#{DeviceAgent.mobile}"/>
```

Note: If you use an EL expression with a specified *`renditionName`* for an region element that explicitly references a particular image rendition (rather than the original image), the rendition defined by the region element is returned (not the rendition specified by *`renditionName`*).

Within a WYSIWYG or static list region element you can reference a specific rendition of an image using the `node.propertyMap['`*`regionDefinitionName`*`:`*`elementName`*`']` EL expression. Alternatively, you can reference original images in the WYSIWG or static list region elements and then use the `node.propertyMap['`*`regionDefinitionName`*`:`*`elementName`*`/Rendition:`*`renditionName`*`']` EL expression to use a specific rendition for all images within the element.

Example 27–7 shows how a particular rendition (`Preview`) is used for images within a static list region element (`paragraph`).

Example 27–7 Using Image Renditions within a Static List Region Element

```
<af:iterator value="#{node.propertyMap['RD_MYREGION:paragraph/Rendition:Preview'].values}"
             var="row"
             id="i1"
             rendered="#{DeviceAgent.desktop}">
  <af:showDetailItem text="#{row.nestedValue[0].value}" id="sdi1" stretchChildren="first">
    <af:panelGroupLayout layout="horizontal" id="tt" inlineStyle="padding:5px;">
      <af:outputText escape="false" value="#{row.nestedValue[1].value}" id="ld1"/>
      <af:outputText escape="false" value="#{row.nestedValue[2].value}" id="ld2"/>
    </af:panelGroupLayout>
  </af:showDetailItem>
</af:iterator>
```

In Example 27–8 `RD_MYREGION:body` corresponds to a WYSIWYG region element. All images within that WYSIWYG element will be rendered using the `A100` rendition.

Example 27–8 Using Image Renditions within a WYSIWYG Region Element

```
<af:outputText value="#{node.propertyMap['RD_MYREGION:body/Rendition:A100'].asTextHtml}"
               escape="false" id="ot5"/>
```

Note: If the WYSIWYG or static list element references an element that defines a particular image rendition, that rendition supersedes any rendition specified using the `Rendition:`*`renditionName`* syntax.

27.3.7 Using EL Expressions to Retrieve Content Item Information

This section describes the EL expressions that you can use in your Content Presenter display template definitions to retrieve and display specific information about content items.

Use the EL expressions described in the following tables as you define your Content Presenter display templates as explained in Section 27.3.2, "Creating Single-Item Display Templates" and Section 27.3.3, "Defining Multiple-Item Display Templates." These expressions are used with the JSP tags described in Table 27–1 and Table 27–2.

This section contains the following subsections:

- Section 27.3.7.1, "Retrieving Basic Information About a Content Item"
- Section 27.3.7.2, "Working with Content Item Properties and Values"
- Section 27.3.7.3, "Working with Content Item Icons and URLs"
- Section 27.3.7.4, "Working with Image Renditions"
- Section 27.3.7.5, "Working with Group Portal Information"

27.3.7.1 Retrieving Basic Information About a Content Item

The EL expressions listed in Table 27–3 let you display basic information about a content item in a display template.

Table 27–3 EL Expressions for Retrieving Basic Content Information

EL Expression	Description
`#{node.createdBy}`	Returns the user name of the node's creator.
`#{node.createdDate}`	Returns the node's creation date.
`#{node.hasParentNode}`	Returns `true` if the current node has a valid parent node ID, or a node that has no parent.
`#{node.icon}`	Returns the icon service defined in the current web application.
`#{node.id}`	Returns the node's identifier.
`#{node.isFolder}`	Returns `true` if this node is associated with a folder or container.
`#{node.isInherited}`	Returns `true` if this node is inherited by another object class definition.
`#{node.modifiedBy}`	Returns the user name of the node's last modifier.
`#{node.modifiedDate}`	Returns the node's last modification date.
`#{node.name}`	Returns the node's name.
`#{node.parentId}`	Returns the parent node's identifier.
`#{node.path}`	Returns the node's path.
`#{node.primaryProperty}`	Returns the node's primary property, if available.
`#{node.propertyMap}`	Creates and returns a map of wrapped property objects, keyed by property name. Properties can be accessed as `#{node.propertyMap['myProp']}` or `#{node.propertyMap.myProp}`.
`#{node.url}`	Returns an instance of the node property URL service for the primary property of this node (if any). By default, it resolves to `#{node.url.renderUrl}`. This is a shortcut for `#{node.primaryProperty.url}`.

27.3.7.2 Working with Content Item Properties and Values

Use the EL expression described in Table 27–4 and Table 27–5 to perform actions on content item node properties and property values.

> **Tip:** To determine the names of the properties defined for a given content type, see Section 27.3.8, "Discovering Content Type Property Names."

Table 27–4 EL Expressions for Content Item Node Properties

EL Expression	Description
`#{node.propertyMap['myProp'].asTextHtml}`	Returns this property as text or HTML if the type is text or HTML. If `isHTML` or `isPlainText` is `true`, the text or HTML is returned as a string.
`#{node.propertyMap['myProp'].hasValue}`	Returns `true` if a value is associated with this property.
`#{node.propertyMap['myProp'].icon}`	Returns the icon service defined in the current web application.
`#{node.propertyMap['myProp'].indexedName}`	Returns the indexed name of a multi-valued property. For example, if a multi-valued node property named `color` contains `blue`, `red`, `orange`, the indexed name of the `red` value is `color[1]`. The following EL expression references the color `orange` in this list: `#{node.propertyMap['color[2]'].value.stringValue}`
`#{node.propertyMap['myProp'].isAudio}`	Returns `true` if the property's mime type is '`audio/`'.

Table 27–4 (Cont.) EL Expressions for Content Item Node Properties

EL Expression	Description
`#{node.propertyMap['myProp'].isBinary}`	Returns `true` if the current property is of type `Property.BINARY`.
`#{node.propertyMap['myProp'].isBoolean}`	Returns `true` if the current property is of type `Property.BOOLEAN`.
`#{node.propertyMap['myProp'].isCalendar}`	Returns `true` if the current property is of type `Property.CALENDAR`.
`#{node.propertyMap['myProp'].isDouble}`	Returns `true` if the current property is of type `Property.DOUBLE`.
`#{node.propertyMap['myProp'].isExcel}`	Returns `true` if the property's mime type is '`application/vnd.ms-excel`', '`application/excel`', '`application/x-excel`', or '`application/x-msexcel`'.
`#{node.propertyMap['myProp'].isGIF}`	Returns `true` if the property's mime type is '`image/gif`'.
`#{node.propertyMap['myProp'].isHTML}`	Returns `true` if the property's mime type is '`text/html`'.
`#{node.propertyMap['myProp'].isImage}`	Returns `true` if the property's mime type is '`image/`'.
`#{node.propertyMap['myProp'].isJPEG}`	Returns `true` if the property's mime type is '`image/jpeg`'.
`#{node.propertyMap['myProp'].isLink}`	Returns `true` if the current property is of type `Property.LINK`.
`#{node.propertyMap['myProp'].isLong}`	Returns `true` if the current property is of type `Property.LONG`.
`#{node.propertyMap['myProp'].isMSWord}`	Returns `true` if the property's mime type is '`application/vnd.ms-word`' or '`application/msword`'.
`#{node.propertyMap['myProp'].isMultiValued}`	Returns `true` if this property is multi-valued.
`#{node.propertyMap['myProp'].isNested}`	Returns `true` if the current property is of type `Property.NESTED`.
`#{node.propertyMap['myProp'].isPDF}`	Returns `true` if the property's mime type is '`application/pdf`'.
`#{node.propertyMap['myProp'].isPlainText}`	Returns `true` if the property's mime type is '`text/plain`'.
`#{node.propertyMap['myProp'].isPNG}`	Returns `true` if the property's mime type is '`image/png`'.
`#{node.propertyMap['myProp'].isPowerPoint}`	Returns `true` if the property's mime type is '`application/vnd.ms-powerpoint`', '`application/mspowerpoint`', or '`application/x-mspowerpoint`'.
`#{node.propertyMap['myProp'].isPrimaryProperty}`	Returns `true` if this property is the primary property.
`#{node.propertyMap['myProp'].isRequired}`	Returns `true` if this property is required/mandatory.
`#{node.propertyMap['myProp'].isRetricted}`	Returns `true` if this property is restricted.
`#{node.propertyMap['myProp'].isRichText}`	Returns `true` if the property's mime type is '`text/richtext`'.
`#{node.propertyMap['myProp'].isString}`	Returns `true` if the current property is of type `Property.STRING`.
`#{node.propertyMap['myProp'].isTextBased}`	Returns `true` if this property is text-based (`isHTML`, `isPlainText`, `isString`, `isCalendar`, `isBoolean`, `isDouble`, `isLong`).
`#{node.propertyMap['myProp'].isVideo}`	Returns `true` if the property's mime type is '`video/`'.
`#{node.propertyMap['myProp'].isXML}`	Returns `true` if the property's mime type is '`text/xml`'.

Table 27–4 (Cont.) EL Expressions for Content Item Node Properties

EL Expression	Description
`#{node.propertyMap['myProp'].isZip}`	Returns `true` if the property's mime type is '`application/zip`'.
`#{node.propertyMap['myRefNode'].linkAsNode}`	Returns the `myRefNode` property as a node, where `myRefNode` is a link property type. Properties can be referenced in EL expressions. **Example**: `#{node.propertyMap['myRefNode'].linkAsNode.primaryProperty.url.renderUrl}`
`#{node.propertyMap['myProp'].name}`	Returns the property's name.
`#{node.propertyMap['myProp'].nestedProperty}`	Retrieves nested properties for this single-valued property, and returns a list of properties.
`#{node.propertyMap['myProp'].type}`	Returns the data type of this property value. For example: `String`, `Integer`, `Long`, and so on.
`#{node.propertyMap['myProp'].url}`	Returns a URL service for this property.
`#{node.propertyMap['myProp'].value}`	Returns the value service for this property.

`#{node.propertyMap['myProp'].nestedProperties}`	Returns elements from a static list. For example:
	`<af:iterator var="listItem"`
	`  value="#{node.propertyMap['ARTICLE_RGD:Paragraphs'].nestedProperties}"`
	`  varStatus="vs">`
	`  <af:outputText id="ot1" value='#{listItem[0].value}'/>`
	`  <af:outputText id="ot3" value="#{listItem[1].value}"/>`
	`  </af:iterator>`

`#node.propertyMap['regionDefName:elementName'].asTextHtml}`	Returns Site Studio data as HTML text. For example: `#node.propertyMap['RD_NEWS:LEAD'].asTextHtml}` The element name (`LEAD`) is prefixed by the Region Definition name (`RD_NEWS`). See also Section 27.3.10, "Referencing Site Studio Region Elements in a Custom View."

Table 27–5 EL Expressions for Content Item Node Property Values

EL Expression	Description
`#{node.propertyMap['myProp'].value.binaryValue}`	Returns custom attributes for a binary property type or attachment. Attributes available on `binaryValue` are: ■ `contentType` – Returns the mime type of the binary content (for example, `text` or `html`). ■ `name` – Returns the filename of the binary content (for example, `index.html`). ■ `size` – Returns the size of the binary content, or `-1` if the size is unavailable.
`#{node.propertyMap['myProp'].value.booleanValue}`	Returns the value of this property as `java.lang.Boolean`.
`#{node.propertyMap['myProp'].value.calendarValue}`	Returns the value of this property as `java.util.Calendar`.
`#{node.propertyMap['myProp'].value.doubleValue}`	Returns the value of this property as `java.lang.Double`.

Table 27–5 (Cont.) EL Expressions for Content Item Node Property Values

EL Expression	Description
`#{node.propertyMap['myProp'].value.longValue}`	Returns the value of this property as `java.lang.Long`.
`#{node.propertyMap['myProp'].value.orderedPosition}`	Returns the "index" of the property when the property is multi-valued. **Example**: `#{node.propertyMap['address[0]'].value.orderedPosition},`
`#{node.propertyMap['myProp'].value.stringValue}`	Returns the value of this property as `java.lang.String`. **Example**: `#{node.propertyMap['firstName'].value.stringValue}`

27.3.7.3 Working with Content Item Icons and URLs

Table 27–6 and Table 27–7 describe EL expressions for working with icons and URLs associated with content items and properties.

Table 27–6 EL Expressions for Content Item Node or Property Icons

EL Expression	Description

`#{node.icon.largeIcon}`
`#{node.propertyMap['myDoc'].icon.largeIcon}`
	Returns a URL to an image resource for a large icon.
	Example:
	`<af:image source="#{node.propertyMap['projectFolder'].largeIcon}"/>`

`#{node.icon.smallIcon}`
`#{node.propertyMap['myDoc'].icon.smallIcon}`
	Returns a URL to an image resource for a small icon.
	Example:
	`<af:image source="#{node.icon.smallIcon}" />`

Table 27–7 EL Expressions for Content Item Node URLs

EL Expression	Description
`#{node.url.downloadUrl}`	Creates a URL to the binary content. Forces a download, and the underlying operating system renders the content based on the content type. **Example**: `<af:goLink destination="#{node.url.downloadUrl}" targetFrame="_blank"/>`
`#{node.url.renderUrl}`	Creates a URL to the binary content. Allows the browser to render the content based on the content type. By default, `#{node.url}` resolves to `#{node.url.renderUrl}`. **Example**: `<af:goLink destination="#{node.url.renderUrl}" targetFrame="_blank"/>`

27.3.7.4 Working with Image Renditions

Table 27–8 lists the EL expressions available to retrieve information about a particular rendition of an image, including the URL to render the image using that rendition.

Table 27–9 lists the EL expressions available to retrieve different image renditions for Site Studio region elements.

For more information about image renditions, see Section 27.3.6, "Using Image Renditions in Content Presenter Display Templates."

Table 27–8 EL Expressions for Image Renditions of Image Documents

EL Expression	Description
`#{node.renditionsMap['`*`renditionName`*`:url']}`	Returns the URL of the image rendition. For example: `http://mymachine.example.com:8888/cs/groups/personalspaces/@pewebcenter/@799c4d7d-255c-46c8-80f5-0d06c848dd65/documents/document/awrf/mdax/~edisp/~extract/ID_001642~3~staticrendition/preview.gif` Wherever possible, `url` points to a static rendition URL for the image rendition on the WebCenter Content. If the static URL cannot be determined, the `url` uses the WebCenter Portal `showProperty` servlet.
`#{node.renditionsMap['`*`renditionName`*`:name']}`	Returns the name of the rendition, for example `web`, `thumbnail`, or `highres`. For `web` and `thumbnail` renditions, `name` returns the name of the native file, not of the web or thumbnail rendition.
`#{node.renditionsMap['`*`renditionName`*`:type']}`	Returns the file type of the image rendition, for example, `preview`. The `type` property is not valid for `web` and `thumbnail` renditions.
`#{node.renditionsMap['`*`renditionName`*`:width']}`	Returns the width of the image rendition in pixels, for example `250`. The `width` property is not valid for `web` and `thumbnail` renditions.
`#{node.renditionsMap['`*`renditionName`*`:height']}`	Returns the height of the image rendition in pixels, for example `34`. The `height` property is not valid for `web` and `thumbnail` renditions.
`#{node.renditionsMap['`*`renditionName`*`:resolution']}`	Returns the resolution (DPI) of the image rendition, for example `96 dpi`. The `resolution` property is not valid for `web` and `thumbnail` renditions.
`#{node.renditionsMap['`*`renditionName`*`:size']}`	Returns the file size of the image rendition, for example, `3133`.
`#{node.renditionsMap['`*`renditionName`*`:contentType']}`	Returns the MIME type of the image rendition, for example. `image/gif`.

Table 27–9 EL Expressions for Image Renditions of Site Studio Region Elements

EL Expression	Description
`#{node.propertyMap['`*`regionDefinitionName`*`:`*`elementName`*`'].asTextHtml}`	Returns an HTML `img` tag with the `src` element set to the URL of the image defined in the specified element. For example: `<img src="http://mymachine.example.com:9400/cs/idcplg?IdcService=GET_FILE&amp;dDocName=id_038497&amp;RevisionSelectionMethod=LatestReleased" alt="S3-1" class="">` Use this EL to reference a Site Studio region element that defines a specific rendition of an image. Wherever possible, the URL points to a static rendition URL for the image rendition on the WebCenter Content. If the static URL cannot be determined, the `url` uses the WebCenter Portal `showProperty` servlet.
`#{node.propertyMap['`*`regionDefinitionName`*`:`*`elementName`*`/Rendition:`*`renditionName`*`'].asTextHtml}`	Returns an HTML `img` tag with the `src` element set to the URL of the specified image rendition of the image defined in the specified element. For example: `<img src="/cs/groups/wc081512c/@sb5cdcaa4610341a8bb8387effdf21790/documents/document/awrf/mdm4/~edisp/~extract/ID_038497~1~staticrendition/preview.gif" alt="S3-1" class="">` If the specified image rendition does not exist for the image, then the URL of the original image is returned. Use this EL to reference a Site Studio region element that defines the original image for which you want to display the specified *`renditionName`*. Wherever possible, the URL points to a static rendition URL for the image rendition on the WebCenter Content. If the static URL cannot be determined, the `url` uses the WebCenter Portal `showProperty` servlet.

27.3.7.5 Working with Group Portal Information

Table 27–10 and Table 27–11 provide EL expressions you can use to work with group portal information in your content presenter template.

Table 27–10 EL Expressions for Basic Group Portal Information

EL Expression	Description

`#{spaceContext.currentSpace.metadata.createdBy}`
`#{spaceContext.space[portalName].metadata.createdBy}`
	Returns the user who created the current or specified group portal.

`#{spaceContext.currentSpace.metadata.creationDate}`
`#{spaceContext.space[portalName].metadata.creationDate}`
	Returns a `java.util.Calendar` object representing the date and time on which the current or specified portal was created.

`#{spaceContext.currentSpace.metadata.customAttributes[attributeName]}`
`#{spaceContext.space[portalName].metadata.customAttributes[attributeName]}`
	Returns the value of a specific custom attribute of the name `attributeName` for the portal.

Table 27–10 (Cont.) EL Expressions for Basic Group Portal Information

EL Expression	Description

`#{spaceContext.currentSpace.metadata.defaultLanguage}`
`#{spaceContext.space[portalName].metadata.defaultLanguage}`
	Returns the default language for the current or specified portal.

`#{spaceContext.currentSpace.metadata.description}`
`#{spaceContext.space[portalName].metadata.description}`
	Returns the description associated with the current portal with the display name in the language in which the portal was created. If the portal name has been translated, the translated name is not shown.
	Example: `#{spaceContext.space['FinanceProject'].metadata.description}`
	Evaluates to conglomeration of all teams involved in financial activities.

`#{spaceContext.currentSpace.metadata.displayName}`
`#{spaceContext.space[portalName].metadata.displayName}`
	Returns the display name associated with the current or specified portal in the language in which the portal was created. If the portal name has been translated, the name in which the portal was created will be shown.
	Example:
	If a group portal called "Web20Portal" has the display name "Web 2.0 Portal", then:
	`#{spaceContext.space['Web20Portal'].metadata.displayName}`
	will evaluate to "Web 2.0 Portal".

`#{spaceContext.currentSpace.metadata.guid}`
`#{spaceContext.space[portalName].metadata.guid}`
	Returns the unique ID associated with the current or specified portal.

`#{spaceContext.space[portalName].metadata.icon}`
`#{spaceContext.currentSpace.metadata.icon}`
	Returns a URL to the icon associated with the current or specified portal.

`#{spaceContext.currentSpace.metadata.keywords}`
`#{spaceContext.space[portalName].metadata.keywords}`
	Returns a comma-separated list of searchable keywords associated with the current or specified portal.

`#{spaceContext.currentSpace.metadata.lastUpdatedDate}`
`#{spaceContext.space[portalName].metadata.lastUpdatedDate}`
	Returns the `java.util.Calendar` object representing the date-time on which the current or specified portal was last updated.

`#{spaceContext.space[portalName].metadata.logo}`
`#{spaceContext.currentSpace.metadata.logo}`
	Returns the path to the image associated with the logo of the current or specified portal.

`#{spaceContext.currentSpace.metadata.name}`
`#{spaceContext.space[portalName].metadata.name}`
	Returns the name of the current or specified portal used generally at the back end of the portal and is used with the pretty URL.

`#{spaceContext.currentSpace.metadata.groupSpaceURI}`
`#{spaceContext.space[portalName].metadata.groupSpaceURI}`
	Returns the pretty URL of the current or specified portal.

Table 27–10 (Cont.) EL Expressions for Basic Group Portal Information

EL Expression	Description

`#{spaceContext.currentSpace.metadata.closed}`
`#{spaceContext.space[portalName].metadata.closed}`
	Returns Boolean value indicating whether the portal has been kept closed.

`#{spaceContext.currentSpace.metadata.discoverable}`
`#{spaceContext.space[portalName].metadata.discoverable}`
	Returns Boolean value indicating whether users will be able to discover the existence of the portal by searching for it or getting it listed in My Portals.

`#{spaceContext.currentSpace.metadata.offline}`
`#{spaceContext.space[portalName].metadata.offline}`
	Returns Boolean value indicating whether the portal has been taken offline.

`#{spaceContext.currentSpace.metadata.publishRSS}`
`#{spaceContext.space[portalName].metadata.publishRSS}`
	Returns Boolean value, indicating whether the portal publishes RSS feeds.

`#{spaceContext.currentSpace.metadata.selfRegistration}`
`#{spaceContext.space[portalName].metadata.selfRegistration}`
	Returns a Boolean value indicating whether users are allowed to subscribe themselves to the portal.

`#{spaceContext.currentSpace.metadata.unsubscriptionApprovalRequired}`
`#{spaceContext.space[portalName].metadata.unsubscriptionApprovalRequired}`
	Returns a Boolean value representing whether approval is required to unsubscribe from the current or specified portal.

Table 27–11 EL Expressions for Portal UI Information

EL Expression	Description

`#{spaceContext.space[portalName].metadata.uiMetadata.gsSiteTemplateId}`
`#{spaceContext.currentSpace.metadata.uiMetadata.gsSiteTemplateId}`
	Returns the ID of the page template associated with the current or specified portal.

`#{spaceContext.space[portalName].metadata.uiMetadata.rcForGSPages}`
`#{spaceContext.currentSpace.metadata.uiMetadata.rcForGSPages}`
	Returns the ID of the resource catalog associated with the current or specified portal.

`#{spaceContext.space[portalName].metadata.uiMetadata.rcForGSSiteTemplates}`
`#{spaceContext.currentSpace.metadata.uiMetadata.rcForGSSiteTemplates}`
	Returns the ID of the resource catalog associated with the page template of the current portal.

`#{spaceContext.space[portalName].metadata.uiMetadata.gsSiteStructureId}`
`#{spaceContext.currentSpace.metadata.uiMetadata.gsSiteStructureId}`
	Returns the ID of the navigation model associated with the current portal.

`#{spaceContext.space[portalName].metadata.uiMetadata.skin}`
`#{spaceContext.currentSpace.metadata.uiMetadata.skin}`
	Returns the ADF Faces skin family associated with the current portal.

Table 27–11 (Cont.) EL Expressions for Portal UI Information

EL Expression	Description

`#{spaceContext.space[portalName].metadata.uiMetadata.footerHidden}`
`#{spaceContext.currentSpace.metadata.uiMetadata.footerHidden}`
	Returns the Boolean value representing whether the footer of the portal is hidden.

`#{spaceContext.space[portalName].metadata.uiMetadata.copyrightMessage}`
`#{spaceContext.currentSpace.metadata.uiMetadata.copyrightMessage}`
	Returns the copyright message used by the portal.

`#{spaceContext.space[portalName].metadata.uiMetadata.privacyPolicyUrl}`
`#{spaceContext.currentSpace.metadata.uiMetadata.privacyPolicyUrl}`
	Returns the URL to the privacy policy document followed.

27.3.8 Discovering Content Type Property Names

As a Content Presenter display template developer, you will need to know the names of the properties defined for the associated content type so that you can define how to display the selected content item(s) on the page.

Each content item is associated with a specific *content type* defined in the WebCenter Content repository. Content types can map to WebCenter Content profile definitions and Site Studio region definitions. Types are created on the WebCenter Content and define the properties of the content item. The property names of a content item's content type, however, are different than the display names, and need to be obtained from the Content Server. For more information, see "Defining Content Types" in *Managing Oracle WebCenter Content*.

> **Note:** You can also use REST services to obtain content type property names. For more information see Chapter 31, "Content Management REST API.".

27.3.9 Referencing External Files in Display Templates

In some cases, a display template needs to reference an external file, like a CSS file. All such references must be either an absolute path or a path that is relative to the root of the web application. For example:

- **absolute path** – `http://host:port/mypath/file.css`
- **relative path** – `/webcenter/mypath/file.css`

Do not use local references to external files. Local references to external files do not work because they are not included when you upload a Content Presenter display template to a WebCenter Portal application, as explained in Section 27.5, "Making Content Presenter Display Templates Available."

27.3.10 Referencing Site Studio Region Elements in a Custom View

You can use custom display templates to display Site Studio Region Definition elements. For example, you might have a Site Studio Region Definition called `RD_NEWS` with four elements: `TITLE`, `LEAD`, `IMAGE`, and `BODY`. A Content Presenter display template can reference these elements using the node property EL expression like this:

```
#node.propertyMap['RD_NEWS:LEAD'].asTextHtml}
```

Example 27–9 illustrates how these Site Studio Region elements can be included in a `contentTemplateDef` definition:

Example 27–9 Referencing Site Studio Region Elements in a Template

```
<dt:contentTemplateDef var="node">
   <af:panelGroupLayout layout="vertical" id="pgl3">
     <af:panelGroupLayout layout="horizontal" valign="top" inlineStyle="background-color:#FFF;
padding:10px;" id="pgl4">
         <af:panelGroupLayout layout="vertical" id="pgl2" valign="top">
            <af:outputText value="#{node.propertyMap['dInDate'].value.calendarValue}" id="ot3"
styleClass="bodytext" converter="javax.faces.DateTime"/>
          </af:panelGroupLayout>
          <af:spacer width="10px;" id="s1" inlineStyle="background-color:#DDD; color:white;"/>
          <af:panelGroupLayout layout="vertical" id="pgl1" valign="top">
             <af:outputText value="#{node.propertyMap['xTargetGroup'].value}" id="ot12"
inlineStyle="background-color:#0A9FC0; color:white; text-align:left; padding:5px;"/>
            <af:goLink text="#{node.propertyMap['RD_NEWS:TITLE'].asTextHtml}" id="gil1"
                destination="#{'/faces/home/news-viewer?news_
id='}#{node.propertyMap['dDocName'].value}" styleClass="newstitle"/>
           <af:outputText value="#{node.propertyMap['RD_NEWS:LEAD'].asTextHtml}" id="ot2"
styleClass="bodytext"/>
         </af:panelGroupLayout>
       <af:panelGroupLayout layout="vertical" id="pgl32" valign="top" styleClass="newsimage">
         <af:outputText value="#{node.propertyMap['RD_NEWS:IMAGE'].asTextHtml}" escape="false"
id="ot1"  inlineStyle="max-width:100px;"/>
       </af:panelGroupLayout>
     </af:panelGroupLayout>
     <af:panelGroupLayout layout="horizontal" id="aaaa">
     </af:panelGroupLayout>
   </af:panelGroupLayout>
</dt:contentTemplateDef>
```

More On OTN

For a complete, end-to-end example illustrating how to reference Site Studio Region elements in multiple templates, see the WebCenter Architecture Team blog entry at: `http://www.ateam-oracle.com/content-presenter-cmis-complete`

27.3.11 Using a Content Presenter Display Template

For information on using a display template in a Content task flow, see Section 29.5, "Adding a Content Task Flow to a Page." See also Section 29.7.1, "Content Presenter Task Flow Parameters and Out-of-the-Box Display Templates." For information on integrating a display template into a Portal Framework application, see the following section Section 27.5, "Making Content Presenter Display Templates Available."

> **Note:** If you display a wiki page in a Portal Framework application using a Content Presenter display template, by default any links within that wiki page are displayed in the Document Viewer. If you want to display wiki page links using Content Presenter, you must edit the `adf-config.xml` file. For more information, see Section 30.3.5, "Displaying Wiki Page Links Within Content Presenter."

27.4 Adding the Content Presenter Task Flow to a Page

You can add a Content Presenter task flow at design time or runtime. For information about how to add Content Presenter at design time (using JDeveloper), see Chapter 29, "Adding Content Task Flows and Document Components to a Portal Page." For information about how to add Content Presenter at runtime, see the "Publishing Content Using Content Presenter" chapter in *Building Portals with Oracle WebCenter Portal*.

27.5 Making Content Presenter Display Templates Available

This section explains how to make a Content Presenter display template available to Content Presenter in a portal or Framework application.

- Section 27.5.1, "Export a Content Presenter Display Template as a Portal Resource"
- Section 27.5.2, "Upload the New Content Presenter Display Template"
- Section 27.5.3, "Test the New Content Presenter Display Template"

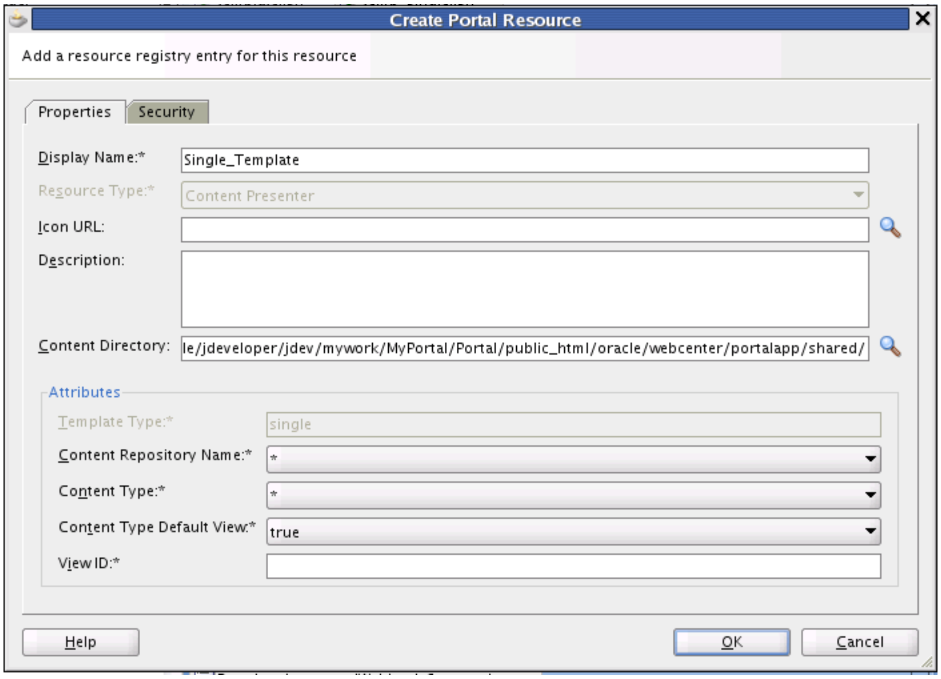
> **Note:** If you are using a locally configured JDev environment to develop a Portal Framework application, all you need to do to use a Content Presenter display template in your application is to export it as a portal resource, as explained in Section 27.5.1, "Export a Content Presenter Display Template as a Portal Resource." You do not need to perform the upload task as explained in Section 27.5.2, "Upload the New Content Presenter Display Template."

27.5.1 Export a Content Presenter Display Template as a Portal Resource

This section explains how to export a Content Presenter display template as a portal resource. This procedure is a prerequisite to adding a Content Presenter display template to a portal and to Content Presenter at runtime.

1. Create a Content Presenter display template, as explained previously in Section 27.3, "Creating Content Presenter Display Templates."
2. In the Application Navigator, right-click the Content Presenter display template file (a JSFF file) and select **Create Portal Resource**.
3. Fill in the Create Portal Resource dialog. This dialog differs depending on whether you are creating a single or multiple-item template. The dialog for a single-item template is shown in Figure 27–8. The dialog for a multiple-item template is shown in Figure 27–9.

Figure 27–8 Create Portal Resource Dialog for a Single-Item Template



Display Name:* Single_Template

Resource Type:* Content Presenter

Icon URL:

Description:

Content Directory: le/jdeveloper/jdev/mywork/MyPortal/Portal/public_html/oracle/webcenter/portalapp/shared/

Attributes

Template Type:* single

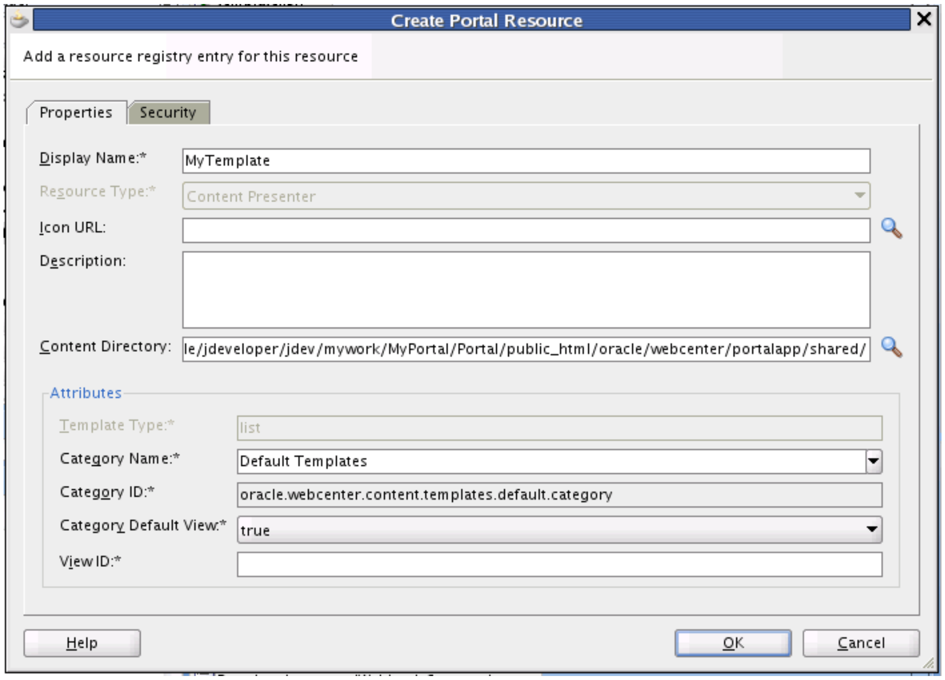
Content Repository Name:* *

Content Type:* *

Content Type Default View:* true

View ID:*

Figure 27–9 Create Portal Resource Dialog for a Multiple-Item Template



Display Name:* MyTemplate

Resource Type:* Content Presenter

Icon URL:

Description:

Content Directory: le/jdeveloper/jdev/mywork/MyPortal/Portal/public_html/oracle/webcenter/portalapp/shared/

Attributes

Template Type:* list

Category Name:* Default Templates

Category ID:* oracle.webcenter.content.templates.default.category

Category Default View:* true

View ID:*

The default settings in the Create Portal Resource dialog are generally sufficient; however, you must enter a unique value in the View ID field. The Display Name is the name that appears in the display template drop down menu at runtime.

The View ID parameter is intended to be human-readable; therefore, it is not automatically generated for you. For example, you can use the View ID to programmatically refer to one template from another. For example, a multiple content item template could render tabs for each item and also call on a single item template to be used below the selected tab to render the details of that item. As another example, you can include one template in another by passing the View ID as a parameter to the Content Presenter task flow. For a detailed example illustrating this, see the WebCenter Architecture Team blog entry at: `http://www.ateam-oracle.com/content-presenter-cmis-complete`. See also Section 27.3.10, "Referencing Site Studio Region Elements in a Custom View."

Additional Attributes in the Create Portal Resource dialog for a **single item template** include:

- **Template Type** – Reflects whether the template is single or multi-item template.
- **Content Repository Name** – By default, the portal resource uses the repository associated with the application's default content connection. If you intend to export the portal resource for use in a portal, you must pick the repository that matches the one used by the portal connection name(s).
- **Content Type** – Lets you pick a content type for which the template will be valid. The list of content types displayed in the menu depends on the selected content repository.
- **Content Type Default View** – If set to true, specifies that the display template is the default template to use for the given combination of repository and content type.
- **View ID** – A unique value that is used to refer to the template programmatically, as discussed previously in this section.

Additional Attributes in the Create Portal Resource dialog for a **multiple item template** include:

- **Template Type** – Reflects whether the template is single or multi-item template.
- **Category Name** – A name given to a category of display templates. Can be any name that describes the category or you can use the **Default Templates** category name.
- **Category ID** – An ID for the category. If you select **Default Templates** as the category name, this field will become read-only and populate with **oracle.webcenter.content.templates.default.category**. If you are creating a new category, this value can be any unique string. For example: **oracle.webcenter.content.templates.pressrelease.category**. If two resources have the same ID, they will be grouped together in the user interface.
- **View ID** – A unique value that is used to refer to the template programmatically, as discussed previously in this section.

Note: For more information on other fields in the Create Portal Resource dialog, see Section 9.6.3, "How to Export a Portal Resource from JDeveloper."

4. Click **OK** in the dialog when you are finished.
5. Right-click the Content Presenter display template (JSFF) file again, and this time select **Export Portal Resource**.

6. In the Export Portal Resource dialog, enter or browse to a directory in which to place the exported portal resource (JSPX) file. You can place this file anywhere on your file system.
7. Click **OK** in the Export Portal Resource dialog.

Now that your Content Presenter display template is exported as a portal resource, the next step is to upload it to your portal. After uploading the display template portal resource, it will be available in the list of display templates when you add a Content Presenter to your portal page.

27.5.2 Upload the New Content Presenter Display Template

You can upload a new display template to any deployed portal or Framework application that includes the Resource Manager. To upload a Content Presenter display template to a portal or Framework application, an application administrator performs the following steps:

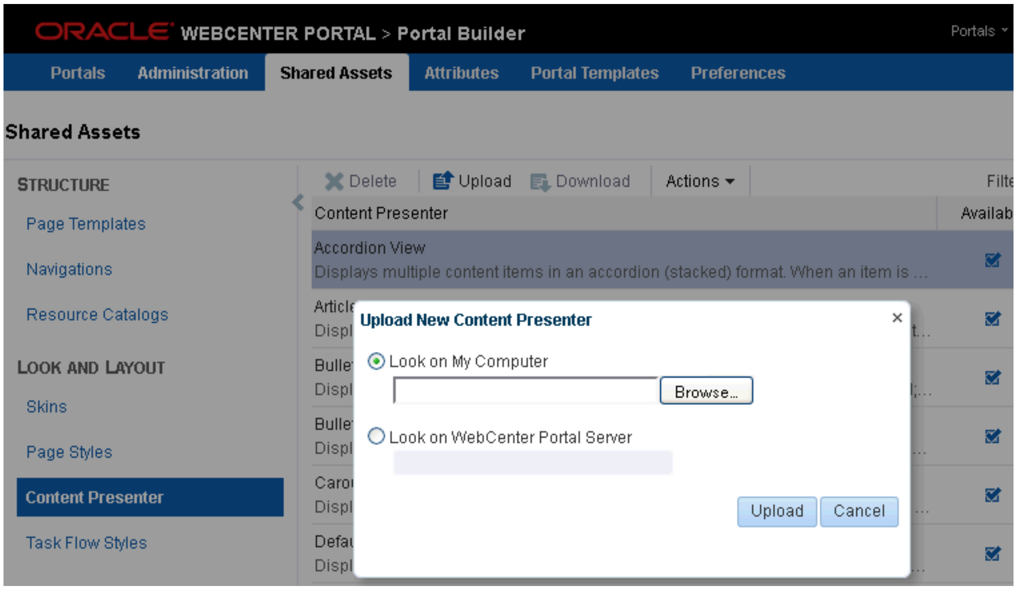
Note: The content repository connection names and details must be the same between the design time portal or Framework application in which you developed the Content Presenter display template and the destination application. Also, any references to external files in the display template must either be absolute or relative path references. See Section 27.3.9, "Referencing External Files in Display Templates."

Note: Uploading from the scope of a specific portal within WebCenter Portal instance is different than uploading from the application scope of the portal's administration tools. For more information, see the section on application-level versus portal-level resources in Section 55.1.5, "Editing WebCenter Portal Assets in JDeveloper."

1. Open your portal or Framework application.
2. Click **Administration**.

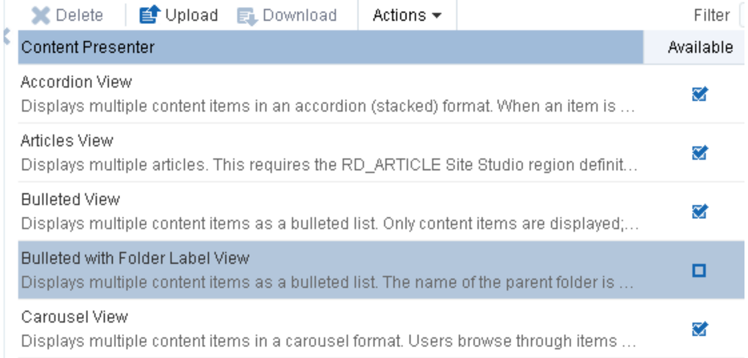
   Note that you must have administrator privileges.
3. Select **Shared Assets**.
4. Under Look and Layout, click **Content Presenter**.
5. Select **Upload**, as shown in Figure 27–10.

Figure 27–10 Uploading the Display Template Portal Resource



6. In the Upload New Content Presenter dialog, navigate to the portal resource file you saved on your file system.
7. After you've selected the template file, click **OK**. If the operation is successful, an Information dialog appears with the message "Resource uploaded successfully."
8. Locate your Content Presenter display template in the list of Content Presenter templates and select it as shown in Figure 27–11.

Figure 27–11 Toggling the Show/Hide State of a Template



Content Presenter	Available
Accordion View Displays multiple content items in an accordion (stacked) format. When an item is ...	☑
Articles View Displays multiple articles. This requires the RD_ARTICLE Site Studio region definit...	☑
Bulleted View Displays multiple content items as a bulleted list. Only content items are displayed;...	☑
Bulleted with Folder Label View Displays multiple content items as a bulleted list. The name of the parent folder is ...	□
Carousel View Displays multiple content items in a carousel format. Users browse through items ...	☑

9. To make the template visible to users and available for use in Content Presenter, check the **Available** check box.

The new Content Presenter display template is now ready to be used with Content Presenter in a portal or Framework application.

27.5.3 Test the New Content Presenter Display Template

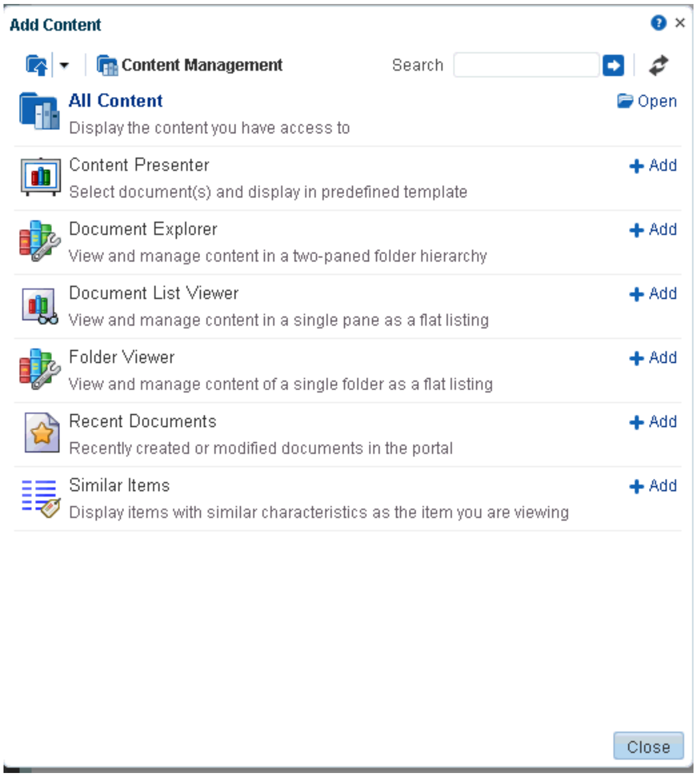
This section explains how to test your Content Presenter display template with Content Presenter.

1. If it is not currently running, start the portal or Framework application to which you added a Content Presenter display template. This application must have a

WebCenter Content connection that Content Presenter can use. For portals, if you just completed the setup procedures described in the previous sections, click **Back to return to the Portal** link in the upper right corner of the Administration page.

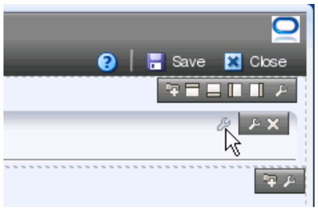
2. Navigate to the portal or Framework application in which you want to use the new Content Presenter display template. Note that you'll need to be able to edit it.
3. Optionally, create a new page to test the display template. Select **Create a New Page** from the Page Actions menu. Then select **Save** and **Close**.
4. In the new or existing page, select **Edit Page** from the Page Actions menu.
5. Select an **Add Content** button in the part of the page where you want to add Content Presenter.
6. In the Add Content dialog, open the **Content Management** folder, as shown in Figure 27–12.

Figure 27–12 Opening the Content Management Folder


Add Content
Content Management
Search
All Content
Open
Display the content you have access to
Content Presenter
Add
Select document(s) and display in predefined template
Document Explorer
Add
View and manage content in a two-paned folder hierarchy
Document List Viewer
Add
View and manage content in a single pane as a flat listing
Folder Viewer
Add
View and manage content of a single folder as a flat listing
Recent Documents
Add
Recently created or modified documents in the portal
Similar Items
Add
Display items with similar characteristics as the item you are viewing
Close

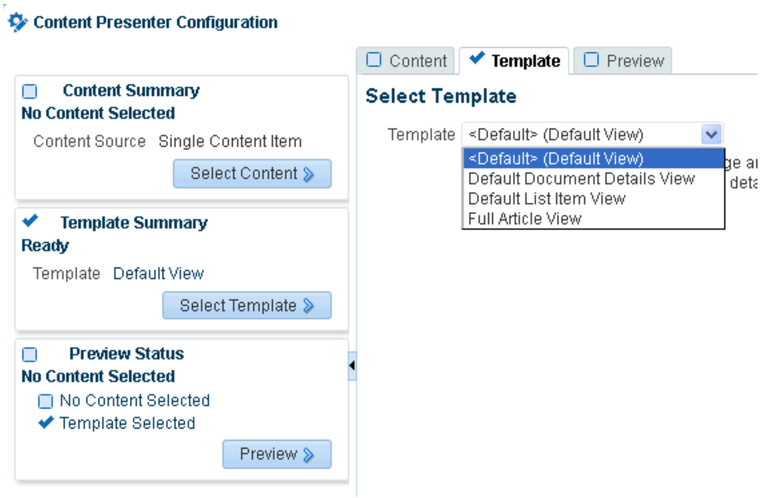
7. In the Add Content dialog, click the **Add** button next to Content Presenter.
8. Close the Add Content dialog.
9. Select the task flow **Edit** icon in the Content Presenter tool bar (see Figure 27–13).

Figure 27–13 Selecting the Edit Icon



10. If this is a new page, select one or more Content items on the Content tab.
11. In the Content Presenter Configuration window, select the Template tab.
12. From the Template menu, select your Content Presenter display template, as shown in Figure 27–14.

Figure 27–14 Selecting the Content Presenter Display Template



Content Presenter Configuration

□ Content Summary
No Content Selected
Content Source Single Content Item
Select Content

✓ Template Summary
Ready
Template Default View
Select Template

□ Preview Status
No Content Selected
□ No Content Selected
✓ Template Selected
Preview

□ Content ✓ Template □ Preview

Select Template

Template <Default> (Default View)

<Default> (Default View)
Default Document Details View
Default List Item View
Full Article View

The Content Presenter template will be applied to the Content Presenter instance. For more information on using Content Presenter and display templates, see Section 29.2, "Understanding the Documents Task Flows" and Section 27.2, "Using the Out-of-the-Box Display Templates."

27.6 What Happens at Runtime?

This section includes these topics:

- Section 27.6.1, "Runtime Overview"
- Section 27.6.2, "Identifying Display Templates for Selected Content Items"

27.6.1 Runtime Overview

After you have defined a Content Presenter display template, you can add a Content Presenter task flow to a page in your application, specifying the content and display template in the Content Presenter task flow parameters (see Section 29.6, "Modifying Content Task Flow Parameters" and Section 27.2, "Using the Out-of-the-Box Display Templates").

If you integrate the Documents Service in your application (see Chapter 28, "Integrating Documents"), end users of your application can select content and your

Content Presenter display templates in the Content Presenter Configuration dialog to include content on editable pages of the application, as described in the "Publishing Content Using Content Presenter" chapter in *Building Portals with Oracle WebCenter Portal*. To understand how Content Presenter identifies which display templates to expose in the Content Presenter Configuration dialog, see Section 27.6.2, "Identifying Display Templates for Selected Content Items."

27.6.2 Identifying Display Templates for Selected Content Items

At runtime, after a user selects content in the Content Presenter Configuration dialog, Content Presenter checks the Resource Manager to identify the display templates that are suitable for the selected content item(s), then exposes the list of valid templates on the Template page in the Content Presenter Configuration dialog for the user to select. See also Chapter 9, "Introduction to Portal Resource Management." Note that uploaded templates must also be "available" in the list of resources for them to be selectable. See Section 27.5.2, "Upload the New Content Presenter Display Template" for more information.

For *single content item* templates, Content Presenter generates a list of valid templates using the following precedence order:

1. Check the Resource Manager for template definitions matching the content item's content repository and content type.
2. Add template definitions matching the default content repository (*) and specified content type.
3. Add template definitions matching inherited content types.
4. Add template definitions matching the default content repository (*) and default content type (*).

For *multiple content item* templates, Content Presenter generates a list of valid templates using the following precedence order:

1. Check the Resource Manager for template definitions associated with the selected template category.
2. Add template definitions associated with the default category (*).

For example, if the user selects multiple content items (such as the children of a folder, or the results of a search), the Content Presenter Configuration dialog shows a list of categories and the list of templates associated with that category and the default category, based on the repository of the content items.

> **Note:** When a user selects a template in the Content Presenter Configuration dialog, that template is used to display the selected content item(s) in the running application. If that template is later deleted from the Resource Manager for any reason, Content Presenter will automatically select a "closest match" template to display the content item(s) using the precedence order above.

27.7 Configuring Coherence as the Caching Mechanism

Content Presenter, by default, is configured to use a local (in-memory) cache. However, using Coherence for any type of production environment is strongly recommended, and is a requirement for High Availability (HA) environments. This section describes how to enable Coherence as the caching mechanism for Framework applications.

> **Note:** Your Coherence license may or may not support multi-node environments depending on the license option you have purchased. To check what your license agreement provides, see the "Oracle Coherence" section in *Licensing Information*.

You can enable content caching with Coherence for both WebCenter Portal and Framework applications by modifying the Coherence configuration file. For WebCenter Portal, only the steps described in the "Modifying Cache Settings for Content Presenter" section in *Administering Oracle WebCenter Portal* are required. For Framework applications, however, an additional step is required to add the configuration file to the application (EAR) classpath or server's system classpath.

This section contains the following subsections:

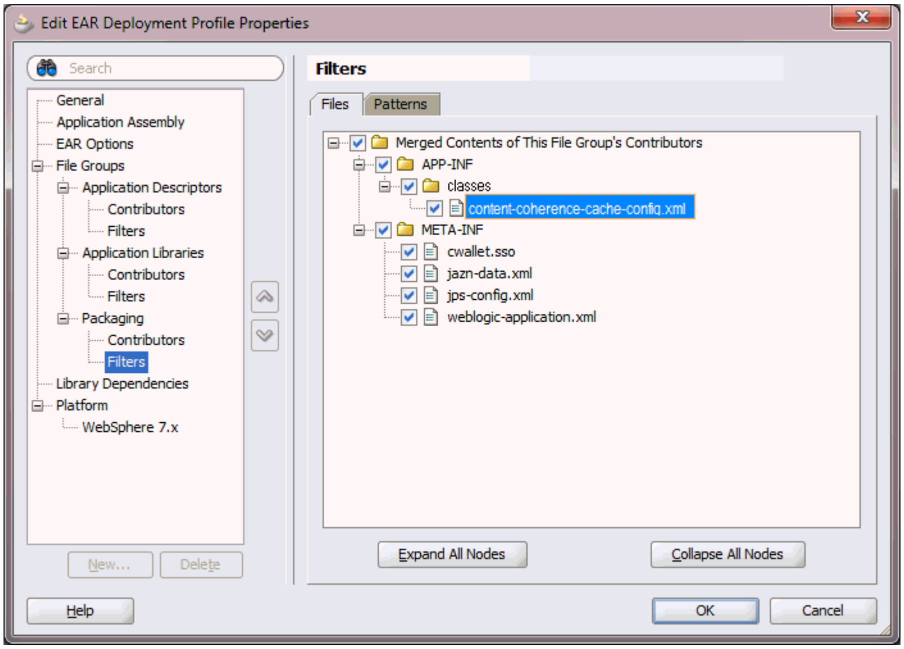
- Section 27.7.1, "Adding the Coherence Configuration File to the EAR Classpath"
- Section 27.7.2, "Verifying the Coherence Configuration"

27.7.1 Adding the Coherence Configuration File to the EAR Classpath

The following steps show how to add the XML file in the EAR classpath.

1. Complete the steps described in the "Modifying Cache Settings for Content Presenter" section in *Administering Oracle WebCenter Portal*.
2. Under the application's `src` directory (for example, `WebCenterPortalCoherence/src`), create a directory named `APP-INF/classes` and place the `content-coherence-cache-config.xml)` in it.
3. Open the application's Application Properties and select **Deployment**.
4. Edit the profile contained in the EAR file (see Figure 27–15).

Figure 27–15 Adding the XML File to the EAR Classpath



☑ Merged Contents of This File Group's Contributors
☑ APP-INF
☑ classes
☑ content-coherence-cache-config.xml
☑ META-INF
☑ cwallet.sso
☑ jazn-data.xml
☑ jps-config.xml
☑ weblogic-application.xml

5. Add a new File Group named `Packaging`. Leave the **Type** as `Packaging`.

6. Make sure `classes` and `content-coherence-cache-config.xml` file are selected in the Filters pane.
7. Deploy the application and restart the managed server on which it was deployed. After deploying your application, Coherence should be enabled.

27.7.2 Verifying the Coherence Configuration

After restarting the managed server where your application is deployed, connect to it by entering `jconsole` from the command line and choosing the process corresponding to `WC_Spaces` to open JConsole. In JConsole, check for Coherence in the MBeans tab. You should also see something like the following output in the `WC_Spaces-diagnostic.log` file:

```
2013-06-26 14:45:47.321/1278.178 Oracle Coherence GE 3.6.0.4 &lt;Info&gt;
(thread=[ACTIVE] ExecuteThread: '1' for queue: 'weblogic.kernel.Default
(self-tuning)', member=n/a): Loaded cache configuration from
"zip:/oracle/app/admin/domains/webcenter/servers/WC_CustomPortal/tmp/_WL_
user/WebCenterPortalCoherence_application1_
V2.0/i092wg/APP-INF/lib/portal-coherence.jar!/content-coherence-cache-config.xml"
```

27.8 Optimizing Performance for Content Presenter Display Templates

When content nodes are retrieved for display in a Content Presenter display template, most content item node property values are retrieved immediately along with the node, but some are loaded later only if needed. Other than the performance difference, the selective loading of node property values is transparent to the user or developer.

As a Content Presenter display template developer, you can optimize performance of your template if you are aware when different property values are loaded. For example, a typical list display template will render faster if you refer only to properties that are immediately loaded when the node is first retrieved and avoid properties that are loaded later when needed.

A secondary consideration is dependent on how the node is retrieved: through search versus fetched by parent ID. A property that may be loaded immediately on node retrieval for searches (such as "Results of a Query") may be loaded later for other retrieval methods (such as "Contents Under a Folder"). Table 27–12 shows whether or not node properties are loaded immediately upon node retrieval, by retrieval mechanism.

For information about the node properties listed in Table 27–12, see *Configuration Reference for Oracle WebCenter Content*.

Table 27–12 Loading of Node Properties By Node Retrieval Mechanism

	Loaded When Node Is First Retrieved?		
OCS Global Profile Properties	**GET BY PARENT ID ("Contents Under a Folder")**	**SEARCH ("Results of a Query")**	**GET BY UUID ("Single Content Item" and "List of Items")**
`VaultFileSize`	**N**	Y	Y
`dCheckoutUser`	Y	**N**	Y
`dCreateDate`	Y	Y	Y
`dDocAccount`	Y	Y	Y
`dDocAuthor`	Y	Y	Y
`dDocName`	Y	Y	Y

Table 27–12 (Cont.) Loading of Node Properties By Node Retrieval Mechanism

	Loaded When Node Is First Retrieved?		
OCS Global Profile Properties	**GET BY PARENT ID ("Contents Under a Folder")**	**SEARCH ("Results of a Query")**	**GET BY UUID ("Single Content Item" and "List of Items")**
`dDocTitle`	Y	Y	Y
`dDocType`	Y	Y	Y
`dFormat`	Y	Y	Y
`dID`	Y	Y	Y
`dInDate`	Y	Y	Y
`dIsCheckedOut`	Y	**N**	Y
`dOutDate`	Y	Y	Y
`dReleaseDate`	Y	**N**	Y
`dReleaseState`	Y	**N**	Y
`dRevClassID`	Y	**N**	Y
`dRevLabel`	Y	Y	Y
`dRevRank`	Y	**N**	Y
`dRevisionID`	Y	Y	Y
`dSecurityGroup`	Y	Y	Y
`dStatus`	Y	**N**	Y
`dWebExtension`	Y	Y	Y
`dWorkflowState`	**N**	**N**	Y
`idcPrimaryFile`	Y	Y	Y
`idcRenditions`	**N**	**N**	Y
`xCollectionID`	Y	Y	Y
`xComments`	Y	Y	Y
`xForceFolderSecurity`	Y	Y	Y
`xHidden`	Y	Y	Y
`xInihibitUpdate`	Y	Y	Y
`xReadOnly`	Y	Y	Y

27.9 Content Presenter Tips, Tutorials and Examples

The following supplementary tutorials and examples further illustrate how Content Presenter can be used:

- *Using Content Presenter Templates* - describes how to build a region definition in Site Builder, and then use that region definition as the basis for a Content Presenter template (rather than a Site Studio region template), and finally, add the template to a Portal Framework application page.

  `http://yonaweb.be/webcenter_tutorial/using_content_presenter_templates`

- *UCM, Site Studio and Templates* - describes the components (Content Server, Site Studio, and Content Presenter) that drive content interactions in WebCenter Portal.

`http://www.ateam-oracle.com/portal-and-content-components-part-1-ucm-site-studio-and-templates-2-of-7`

- *Content Presenter-CMIS-Complete* - steps you through using Content Presenter-based pages and complex CMIS and custom templates to create a filterable content list viewer.

  `http://www.ateam-oracle.com/content-presenter-cmis-complete`

- *Portal and Content - Content Integration - Best Practices* - highlights some of the best practices to consider when integrating content into your portal.

  `http://www.ateam-oracle.com/portal-and-content-content-integration-best-practices/`

28 Integrating Documents

This chapter describes how to integrate documents into a Portal Framework application to both add content to the application, and to provide end users with content and documents task flows built into the application to manage, display, and search documents at runtime.

> **Note:** For a description of the other ways to integrate content into a WebCenter Portal Framework application, see Chapter 24, "Introduction to Integrating and Publishing Content."

This chapter includes the following topics:

- Section 28.1, "Introduction to Documents in WebCenter Portal Framework Applications"
- Section 28.2, "Setting Up Connections"
- Section 28.3, "Setting Security for the Documents Tool"
- Section 28.4, "Using the Documents Tool with Other WebCenter Services"
- Section 28.5, "Setting Parameters to Upload Files to Content Repositories"

28.1 Introduction to Documents in WebCenter Portal Framework Applications

The Documents tool provides features for accessing, adding, and managing folders and files; configuring and viewing file and folder properties; and searching file and folder content in WebCenter Content, Oracle Portal, SharePoint, or, in development environments, File System content repositories. It provides these features through documents task flows, document components (links, inline frames, and images), wikis, and blogs.

> **Note:** The availability of SharePoint as a content repository requires the installation of the SharePoint adapter, as described in Section 25.2.3.1, "Installing the Oracle WebCenter Adapter for SharePoint." Administration for SharePoint is performed using WLST commands, not Oracle Enterprise Manager Fusion Middleware Control Console.

To integrate documents into a Portal Framework application, your WebCenter Portal administrator must set up a connection to the content repository that contains the documents you want to manage. If the content repository you wish to use requires authentication, ensure that you set up an external application when you configure the connection to your content repository, as discussed in Section 28.2, "Setting Up Connections."

28.2 Setting Up Connections

Before you can use the Documents tool and task flows, you must first set up the connection to the WebCenter Content, Oracle Portal, or SharePoint content repository that contains the documents you want to manage. You can reuse connections you have created or create new ones.

> **Note:** While you can set up the connections to back-end servers at design time in Oracle JDeveloper, you can also later add, delete, or modify connections in your deployed environment using Enterprise Manager Fusion Middleware Control. For more information, refer to the *Administering Oracle WebCenter Portal*.

The choices made for application security and content repository connection authentication need to be compatible. For example, if the connection is configured to use External Application with only Public credentials defined, then there is no requirement for the application to enforce user authentication. For detailed information about connection configuration, see Section 25.2, "Configuring Content Repository Connections."

28.3 Setting Security for the Documents Tool

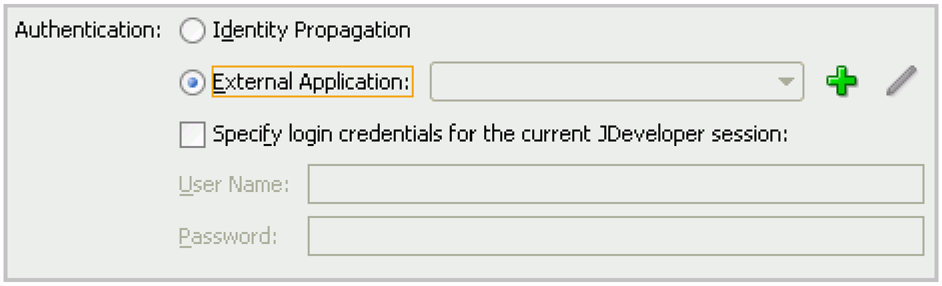
The documents task flows support the same security options that are supported by the content repository connections. This service can also use an external application with dedicated user accounts to access remote content repositories, such as an Oracle WebCenter Content or Oracle Portal. For more information about using security with content repositories, see Section 26.4, "Securing a Content Repository Data Control." For information about using external applications, see Section 74.13, "Working with External Applications."

If you are using a content repository that handles its own authentication, such as Oracle Portal or Oracle WebCenter Content, you can associate that content repository with an external application definition to allow for credential provisioning. You can modify your connection to your content repository to use an external application without shared or public credentials. When you do this, the External Application - Change Password task flow is automatically integrated to allow your end users to provide their credentials.

To register an external application for an existing content repository connection:

1. In the Application Resources pane, right-click your connection name and choose **Properties**.
2. In the Edit Content Repository Connection dialog box, under **Authentication**, select **External Application** (Figure 28–1).

Figure 28–1 Selecting External Application in the Content Repository Connection Dialog



Authentication: ○ Identity Propagation

● External Application:

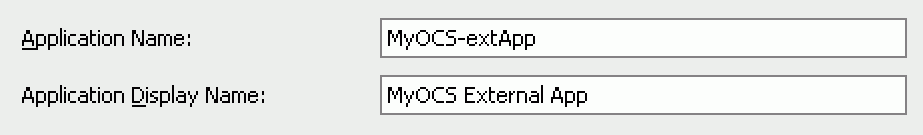
□ Specify login credentials for the current JDeveloper session:

User Name:

Password:

3. Click the green + (plus) sign to start the Register External Application wizard.
4. On the Name page, enter an **Application Name** and **Application Display Name**, (Figure 28–2) then click **Next**.

Figure 28–2 Naming the External Application

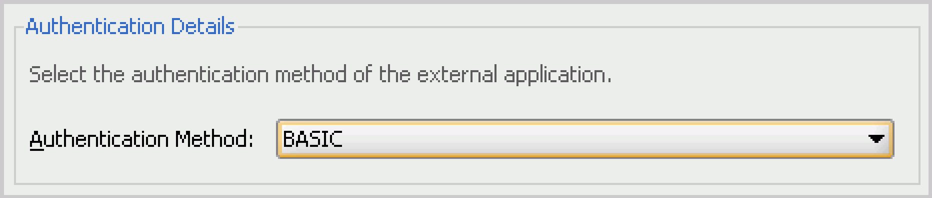


Application Name: MyOCS-extApp

Application Display Name: MyOCS External App

5. On the General page, under **Authentication Details**, choose **BASIC** from the **Authentication Method** list (Figure 28–3), then click **Next**.

Figure 28–3 Choosing the BASIC Authentication Method



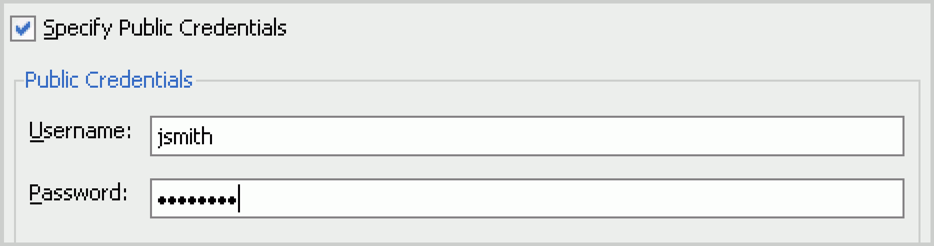
Authentication Details

Select the authentication method of the external application.

Authentication Method: BASIC

6. On the Additional Fields page, click **Next**.
7. On the Shared Credentials page, click **Next**.
8. On the Public Credentials page, select **Specify Public Credentials**, then enter the **Username** and **Password** for the content repository (Figure 28–4).

Figure 28–4 Specifying the Public Credentials



☑ Specify Public Credentials

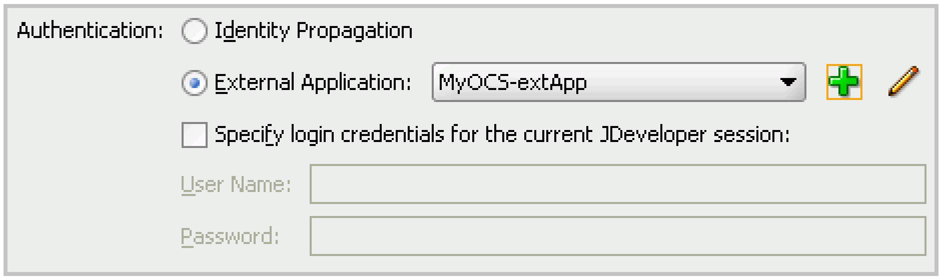
Public Credentials

Username: jsmith

Password: •••••••••

9. Click **Finish**. Notice that your connection now uses the external application for authentication (Figure 28–5).

Figure 28–5 Using the New External Application



Authentication: ○ Identity Propagation

● External Application: MyOCS-extApp

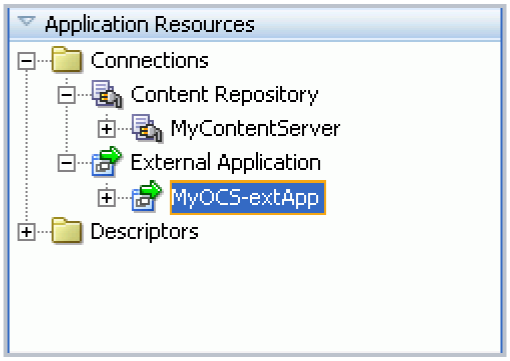
□ Specify login credentials for the current JDeveloper session:

User Name:

Password:

10. In the Edit Content Repository Connection dialog box, click **OK**. In the Application Resources panel, notice that the external application now appears (Figure 28–6).

Figure 28–6 External Application in the Application Resources Panel



```
Application Resources
⊟ Connections
    ⊟ Content Repository
        ⊞ MyContentServer
    ⊟ External Application
        ⊞ MyOCS-extApp
⊞ Descriptors
```

If you do not apply security and the content repository requires a login to access the content, the user will not be able to authenticate and thus will see only public content at runtime.

28.4 Using the Documents Tool with Other WebCenter Services

You can use the Documents tool with a variety of other WebCenter services. For example, you can add tags to documents in your content repository, search across your application and retrieve documents in the results, or track recent changes to the content repository.

You can see an example of how to use the Documents tool with the Tags service in Section 44.3.3, "Optional Way to Show Tags on Pages."

To learn more about how you can use these services together, refer to Chapter 4, "Preparing Your Application for WebCenter Portal Tools and Services,"

> **Note:** When you integrate the Documents tool with the Search service, the Search service returns results from *all* content repository connections.

28.5 Setting Parameters to Upload Files to Content Repositories

The Document Manager, Document Explorer, and Folder Viewer task flows allow you to upload files into content repositories. WebCenter Portal Framework uses Apache MyFaces Trinidad to handle file upload from a browser to the application server.

To change the default settings of Apache MyFaces Trinidad, you can add three parameters to the `web.xml` file. To edit this file, open the **ViewController** project of your application. Under **Web Content**, open the `web.xml` file. In the Overview, navigate to **Application > Context Initialization Parameters**, then click the green plus sign (**+**) to add the parameters and their values (as described in Table 28–1) or simply update the code in the Source view. After you have made your changes, save the `web.xml` file, then restart Oracle JDeveloper.

Table 28–1 Apache MyFaces Trinidad Parameters

Parameter	Description
`org.apache.myfaces.trinidad.UPLOAD_MAX_MEMORY`	The maximum amount of memory in bytes that a single file can use when uploaded
`org.apache.myfaces.trinidad.UPLOAD_MAX_DISK_SPACE`	The maximum amount of disk space in bytes that a single file can use when uploaded
`org.apache.myfaces.trinidad.UPLOAD_TEMP_DIR`	The directory in which the file being uploaded is temporarily stored

For more information, see the Apache MyFaces Trinidad documentation at `http://myfaces.apache.org/trinidad/devguide/fileUpload.html`.

29

Adding Content Task Flows and Document Components to a Portal Page

This chapter describes how to add content to a page in a Portal Framework application using the content task flows and document components. In a Portal Framework application, you can add content from one or more connected content repositories to the application, using Content Presenter or the documents task flows to display the content in a variety of ways. As you develop your application, you can view, edit, and manage that content using the content task flows, in the same way that end users of the application will do.

Note:

- For a description of the other ways to integrate content into a WebCenter Portal Framework Application, see Chapter 24, "Introduction to Integrating and Publishing Content."
- For information about viewing, editing, and managing content in content task flows, see the "Working with Documents" part in *Using Oracle WebCenter Portal*.

This chapter includes the following topics:

29.1 Understanding the Content Presenter Task Flow

Content Presenter enables you to precisely customize the selection and presentation of content in a WebCenter Portal application.

The Content Presenter task flow is available only when the connected content repository is WebCenter Content and your WebCenter Portal administrator has completed the prerequisite configuration.

See Also:

- "Prerequisites to Configuring WebCenter Content" in *Administering Oracle WebCenter Portal*
- Section 25.2.1, "Creating a Content Repository Connection Based on the Oracle Content Server Adapter"

The Content Presenter task flow allows you to select a single item of content, contents under a folder, a list of items, query for content, or select content based on the results of a Personalization Conductor scenario, and then select a template to render the content on a page in a WebCenter Portal application.

Content Presenter has no dependency on the Documents tool for adding or managing the content it displays.

To add the Content Presenter task flow to a page, see Section 29.4, "Adding a Selected Folder or File to a Page" and Section 29.5, "Adding a Content Task Flow to a Page."

Note: If a page is based on a page template that includes a Content Presenter task flow to display a content item, the page template developer must manually modify the task flow properties to display the content in the page template, as follows:

- `datasource`: `*connection_name*#dDocName:*content_ID*`
- `datasourceType`: `dsTypeSingleNode`
- `taskFlowInstId`: A unique identifier

For more information about Content Presenter task flow properties, see Table 29–4, " Content Presenter Task Flow Parameters"

For information about creating a page template, see Section 11.3, "Creating a Page Template."

29.2 Understanding the Documents Task Flows

The documents task flows provide a variety of formats to display folders and files, including wikis and blogs, on a page in a Portal Framework application. You can choose the task flows appropriate for your application to provide features for accessing, adding, and managing folders and files; configuring and viewing file and folder properties; and searching file and folder content in WebCenter Content, Oracle Portal, or SharePoint content repositories.

Note: The availability of SharePoint as a content repository requires the installation of the SharePoint adapter, as described in Section 25.2.3.1, "Installing the Oracle WebCenter Adapter for SharePoint." Administration for SharePoint is performed using WLST commands, not Oracle Enterprise Manager Fusion Middleware Control Console.

To add a documents task flow to a page in a Portal Framework application, your WebCenter Portal administrator must first integrate the Documents tool into the application by establishing a content repository connection, as described in Chapter 28, "Integrating Documents" and Chapter 25, "Configuring Content Repository Connections."

Using documents task flows and document components (such as links, previews, and images), you can add content to the application, and also provide end users with content and documents task flows built into the application to manage, display, and search documents at runtime.

Table 29–1 provides an overview of the documents task flows.

Table 29–1 Documents Task Flows

	Folder and File Listings	Individual Folders	Individual Files
Document Explorer task flow. Displays folders and files in two panes, combining the functionality of the Document Navigator and Folder Viewer task flows. It provides in-place previewing and editing, and robust management capabilities with an interface that should be familiar to users of Windows Explorer. Size: medium to full page width. See Figure 29–1.	X	X	
Document List Viewer task flow. Displays folders and files in a single pane as a flat listing. It provides preview and editing in separate window, and some management capabilities. Size: narrow to medium page width. See Figure 29–2.	X	X	
Document Manager task flow. Displays folders and files as specified by its `layout` property: `explorer`, `table`, or `treeTable`. The `explorer` layout is identical to the Document Explorer task flow, without the properties `showDocuments`, `showFolders`, and `treeNavCollapsed`. See Figure 29–3, Figure 29–4, and Figure 29–5.	X	X	
Document Navigator task flow. Displays a nested hierarchy of folders and files in a single pane, providing expand and collapse on folders to show the full hierarchy. Size: narrow to medium page width. See Figure 29–6.	X	X	
Folder Viewer task flow. Displays the contents of a folder in a single pane as a flat listing, providing in-place preview and editing, and robust document management capabilities with a straightforward interface that should be familiar to Windows users. Size: medium to full page width. See Figure 29–7.	X	X	
Recent Documents task flow. Displays a list of the files most recently created or modified files in the current folder. See Figure 29–8.	X		
Document Viewer task flow. Displays a preview of a file, or file properties for files that do not support a preview. See Figure 29–9 and Figure 29–10.		X[1]	X
Document Mini Properties task flow. Displays the Basic properties of a file in a read-only view. See Figure 29–11.		X[1]	X
Document Properties task flow. Displays both Basic and Advanced properties of a file, along with an **Edit** button to allow you to modify property values. See Figure 29–12.		X[1]	X

Table 29–1 (Cont.) Documents Task Flows

	Folder and File Listings	Individual Folders	Individual Files
Rich Text Editor task flow. Displays an HTML or wiki document in the Rich Text Editor.		X	X
Document Upload task flow. Displays the Upload dialog to allow users to upload new documents to the page.		X	X
Document Version History task flow. Displays a list of versions of a file, allowing for deletion of a selected version. See Figure 29–13 and Figure 29–14.			X
AutoVue task flow. Displays AutoVue markup for a file in a table of hyperlinked markup names (see the "Collaborating on Documents Using Oracle AutoVue" section in *Using Oracle WebCenter Portal*).			X

[1] To show folder information in a Document Viewer, Document Mini Properties, or Document Properties task flow, you must set the task flow's `resourceID` property to the ID of the target folder. See Section 29.7, "Content Task Flow Parameters."

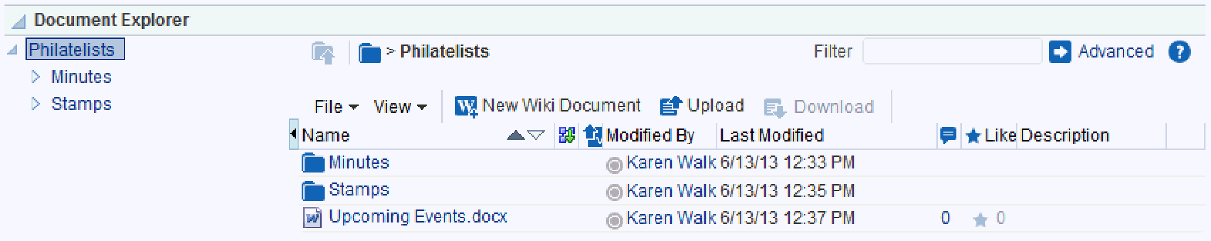
To add a documents task flow to a page, see Section 29.4, "Adding a Selected Folder or File to a Page" and Section 29.5, "Adding a Content Task Flow to a Page."

For detailed information about each documents task flow, click the links below to display the pertinent sections in *Building Portals with Oracle WebCenter Portal*

- "Understanding the Document Explorer Task Flow"

  Figure 29–1 shows an example of the Document Explorer task flow. For information about setting properties for this task flow, see Section 29.7.2, "Document Explorer Task Flow Parameters."

Figure 29–1 Document Explorer Task Flow

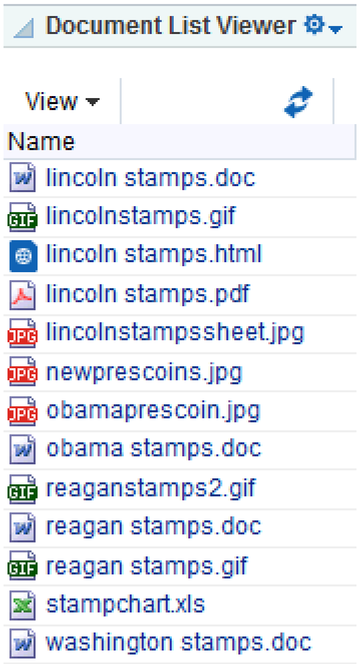


Name	Modified By	Last Modified		Like	Description
Minutes	Karen Walk	6/13/13 12:33 PM			
Stamps	Karen Walk	6/13/13 12:35 PM			
Upcoming Events.docx	Karen Walk	6/13/13 12:37 PM	0	0	

- "Understanding the Document List Viewer Task Flow"

  Figure 29–2 shows an example of the Document List Viewer task flow. For information about setting properties for this task flow, see Section 29.7.3, "Document List Viewer Task Flow Parameters."

Figure 29–2 Document List Viewer Task Flow

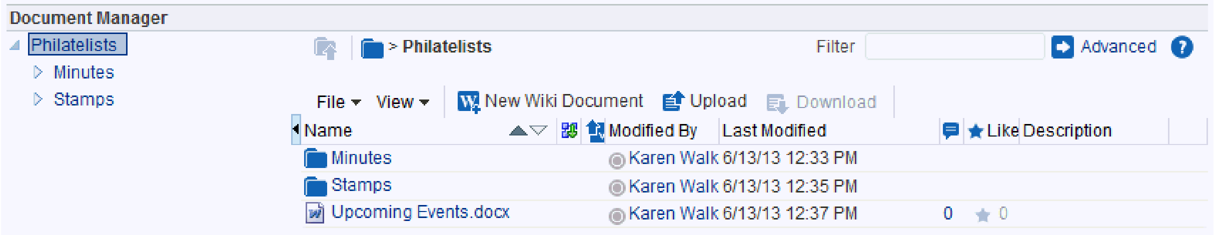


- lincoln stamps.doc
- lincolnstamps.gif
- lincoln stamps.html
- lincoln stamps.pdf
- lincolnstampssheet.jpg
- newprescoins.jpg
- obamaprescoin.jpg
- obama stamps.doc
- reaganstamps2.gif
- reagan stamps.doc
- reagan stamps.gif
- stampchart.xls
- washington stamps.doc

- "Understanding the Document Manager Task Flow"

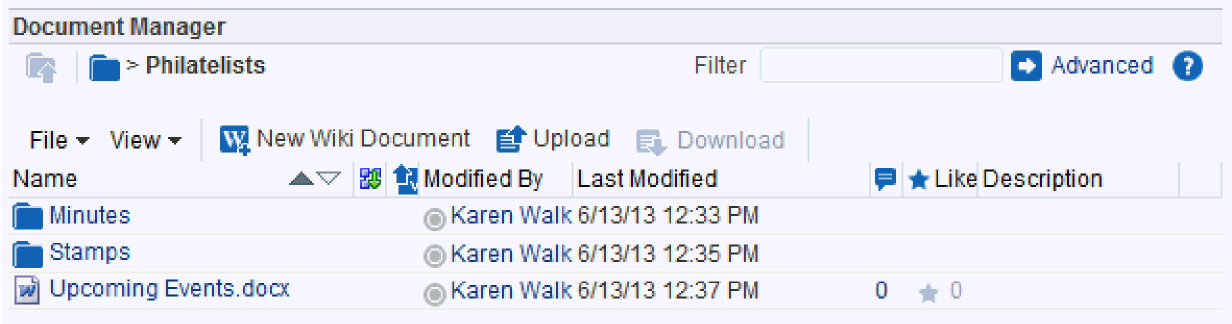
  Figure 29–3, Figure 29–4, and Figure 29–5 show examples of the three different layouts for the Document Manager task flow. The `explorer` layout (default) is identical to the Document Explorer task flow, without the properties `showDocuments`, `showFolders`, and `treeNavCollapsed`. For information about setting properties for this task flow, see Section 29.7.4, "Document Manager Task Flow Parameters."

Figure 29–3 Document Manager Task Flow: Explorer Layout



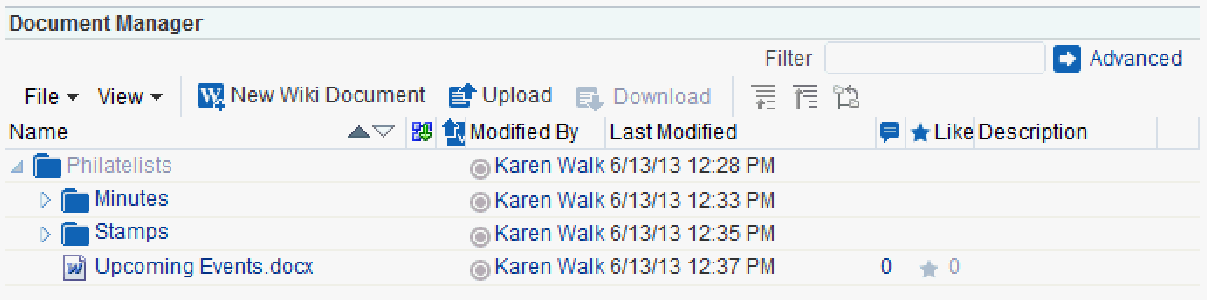
Name	Modified By	Last Modified	💬	★ Like	Description
Minutes	Karen Walk	6/13/13 12:33 PM			
Stamps	Karen Walk	6/13/13 12:35 PM			
Upcoming Events.docx	Karen Walk	6/13/13 12:37 PM	0	★ 0	

Figure 29–4 Document Manager Task Flow: Table Layout



Name	Modified By	Last Modified	💬	★ Like	Description
Minutes	Karen Walk	6/13/13 12:33 PM			
Stamps	Karen Walk	6/13/13 12:35 PM			
Upcoming Events.docx	Karen Walk	6/13/13 12:37 PM	0	★ 0	

Figure 29–5 Document Manager Task Flow: TreeTable Layout



Document Manager

Filter Advanced

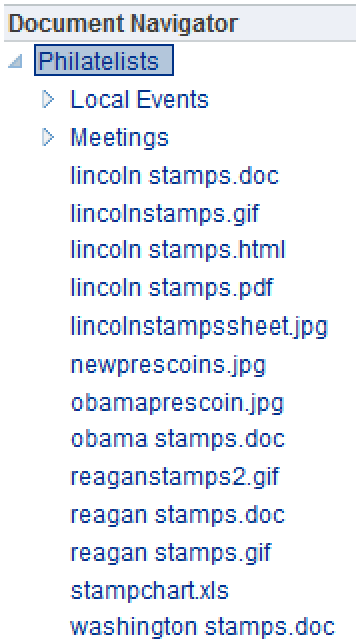
File ▾ View ▾ New Wiki Document Upload Download

Name	Modified By	Last Modified		★ Like	Description
◢ Philatelists	Karen Walk	6/13/13 12:28 PM			
▷ Minutes	Karen Walk	6/13/13 12:33 PM			
▷ Stamps	Karen Walk	6/13/13 12:35 PM			
Upcoming Events.docx	Karen Walk	6/13/13 12:37 PM	0	★ 0	

- "Understanding the Document Navigator Task Flow"

  Figure 29–6 shows an example of the Document Navigator task flow. For information about setting properties for this task flow, see Section 29.7.5, "Document Navigator Task Flow Parameters."

Figure 29–6 Document Navigator Task Flow



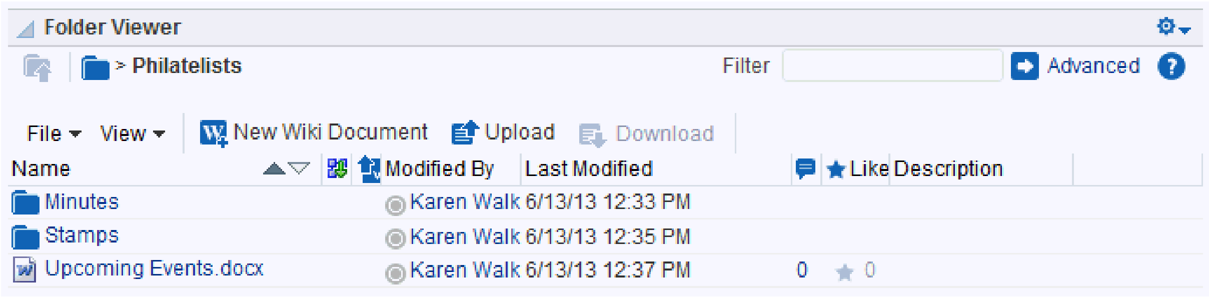
Document Navigator

◢ Philatelists
- ▷ Local Events
- ▷ Meetings
- lincoln stamps.doc
- lincolnstamps.gif
- lincoln stamps.html
- lincoln stamps.pdf
- lincolnstampssheet.jpg
- newprescoins.jpg
- obamaprescoin.jpg
- obama stamps.doc
- reaganstamps2.gif
- reagan stamps.doc
- reagan stamps.gif
- stampchart.xls
- washington stamps.doc

- "Understanding the Folder Viewer Task Flow"

  Figure 29–7 shows an example of the Folder Viewer task flow. For information about setting properties for this task flow, see Section 29.7.6, "Folder Viewer Task Flow Parameters."

Figure 29–7 Folder Viewer Task Flow

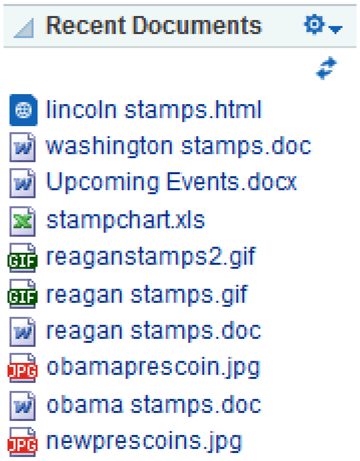


Name	Modified By	Last Modified		Like	Description
Minutes	Karen Walk	6/13/13 12:33 PM			
Stamps	Karen Walk	6/13/13 12:35 PM			
Upcoming Events.docx	Karen Walk	6/13/13 12:37 PM	0	0	

- "Understanding the Recent Documents Task Flow"

  Figure 29–7 shows an example of the Recent Documents task flow. For information about setting properties for this task flow, see Section 29.7.7, "Recent Documents Task Flow Parameters."

Figure 29–8 Recent Documents Task Flow

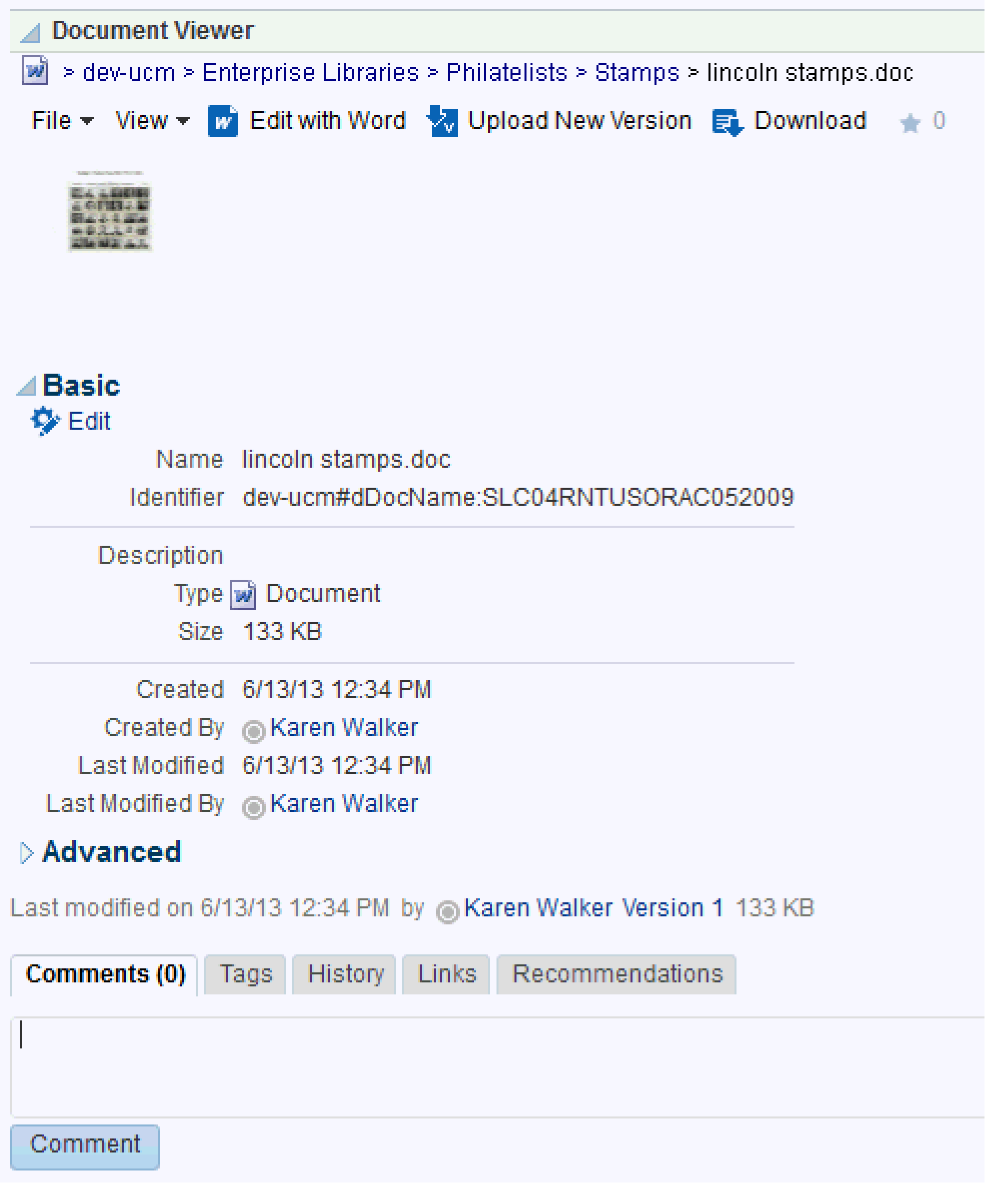


lincoln stamps.html
washington stamps.doc
Upcoming Events.docx
stampchart.xls
reaganstamps2.gif
reagan stamps.gif
reagan stamps.doc
obamaprescoin.jpg
obama stamps.doc
newprescoins.jpg

- "Understanding the Document Viewer Task Flow"

  Figure 29–9 and Figure 29–10 show examples of the Document Viewer task flow for different file types. For information about setting properties for this task flow, see Section 29.7.8, "Document Viewer Task Flow Parameters."

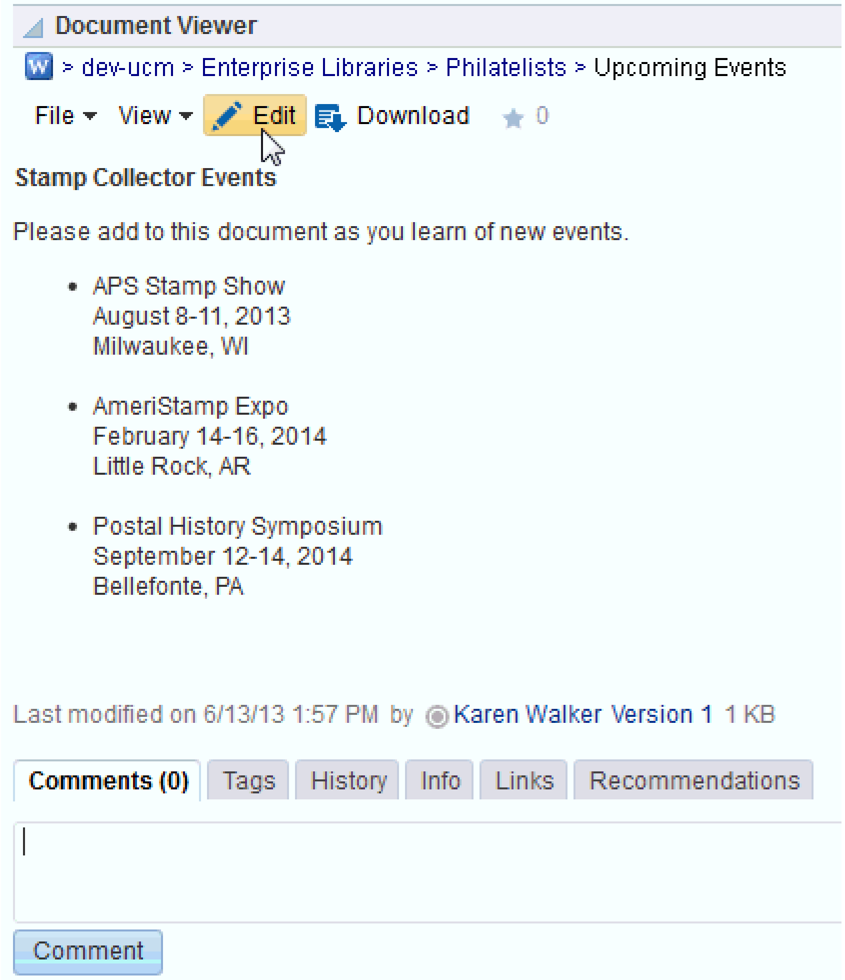
Figure 29–9 Document Viewer Task Flow for Word File


Document Viewer
> dev-ucm > Enterprise Libraries > Philatelists > Stamps > lincoln stamps.doc
File
View
Edit with Word
Upload New Version
Download
0
Basic
Edit

Name	lincoln stamps.doc
Identifier	dev-ucm#dDocName:SLC04RNTUSORAC052009
Description	
Type	Document
Size	133 KB
Created	6/13/13 12:34 PM
Created By	Karen Walker
Last Modified	6/13/13 12:34 PM
Last Modified By	Karen Walker

Last modified on 6/13/13 12:34 PM by Karen Walker Version 1 133 KB

Figure 29–10 Document Viewer Task Flow for Wiki Document


Document Viewer
> dev-ucm > Enterprise Libraries > Philatelists > Upcoming Events
File
View
Edit
Download
0

Stamp Collector Events

Please add to this document as you learn of new events.

- APS Stamp Show
  August 8-11, 2013
  Milwaukee, WI

- AmeriStamp Expo
  February 14-16, 2014
  Little Rock, AR

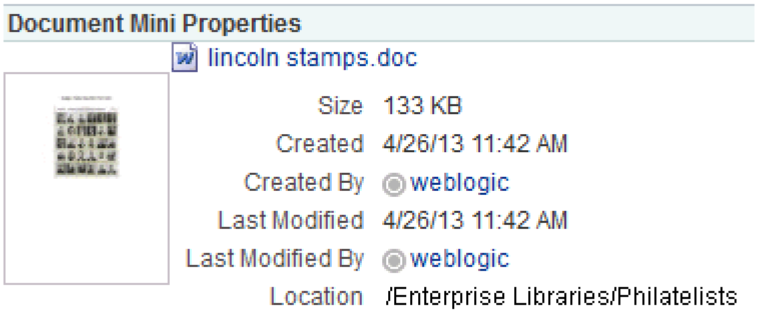
- Postal History Symposium
  September 12-14, 2014
  Bellefonte, PA

Last modified on 6/13/13 1:57 PM by Karen Walker Version 1 1 KB

- "Understanding the Document Mini Properties Task Flow"

  Figure 29–11 shows an example of the Document Mini Properties task flow. For information about setting properties for this task flow, see Section 29.7.9, "Document Mini Properties Task Flow Parameters."

Figure 29–11 Document Mini Properties Task Flow

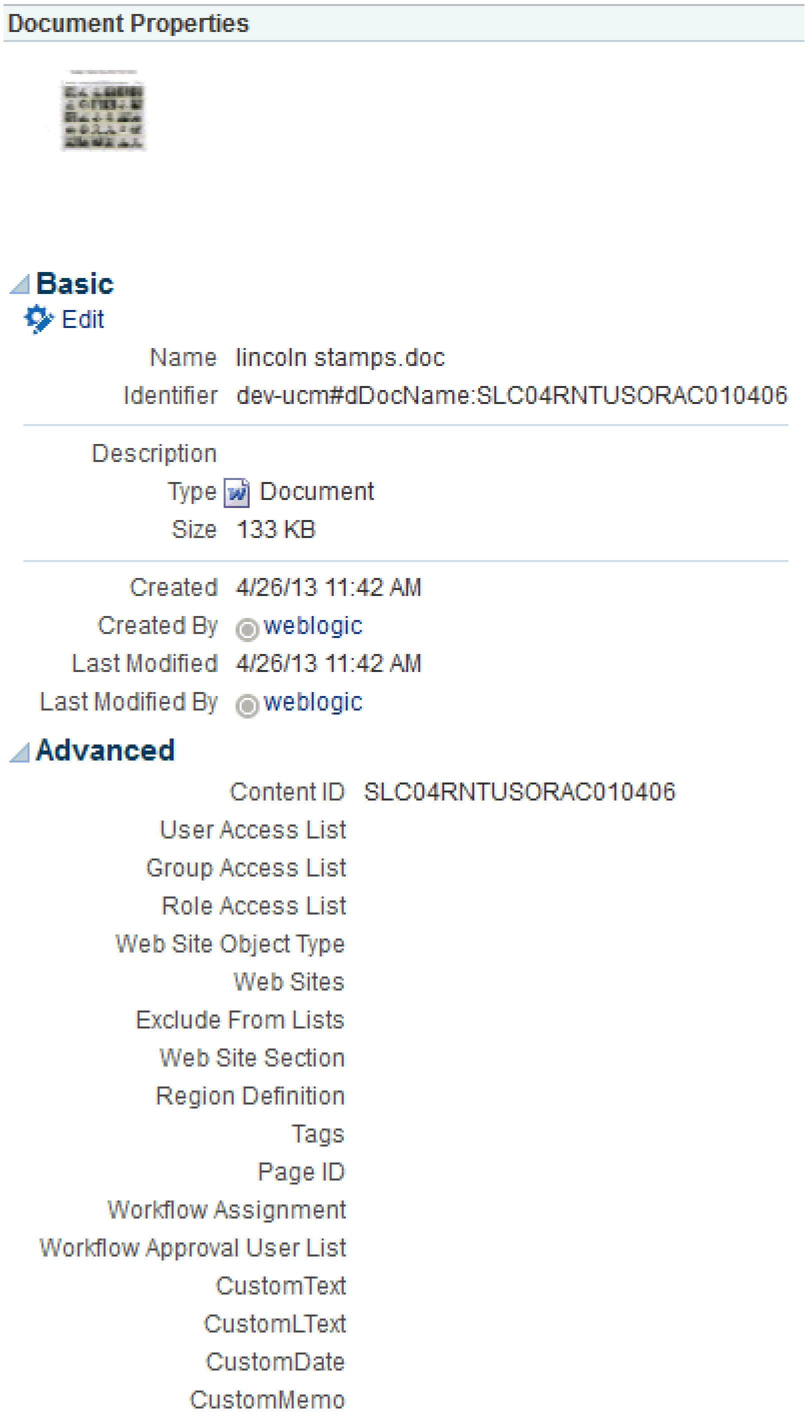


Size	133 KB
Created	4/26/13 11:42 AM
Created By	weblogic
Last Modified	4/26/13 11:42 AM
Last Modified By	weblogic
Location	/Enterprise Libraries/Philatelists

- "Understanding the Document Properties Task Flow"

  Figure 29–12 shows an example of the Document Properties task flow. For information about setting properties for this task flow, see Section 29.7.10, "Document Properties Task Flow Parameters."

Figure 29–12 Document Properties Task Flow



Document Properties

Basic

Edit

Name	lincoln stamps.doc
Identifier	dev-ucm#dDocName:SLC04RNTUSORAC010406
Description	
Type	Document
Size	133 KB
Created	4/26/13 11:42 AM
Created By	weblogic
Last Modified	4/26/13 11:42 AM
Last Modified By	weblogic

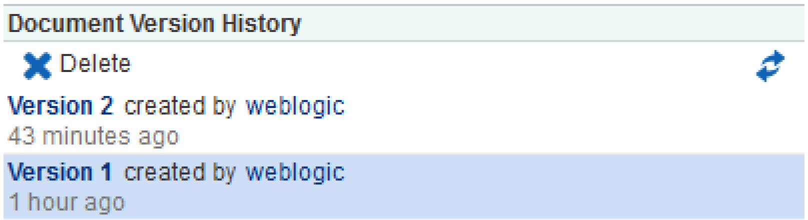
Advanced

Content ID	SLC04RNTUSORAC010406
User Access List	
Group Access List	
Role Access List	
Web Site Object Type	
Web Sites	
Exclude From Lists	
Web Site Section	
Region Definition	
Tags	
Page ID	
Workflow Assignment	
Workflow Approval User List	
CustomText	
CustomLText	
CustomDate	
CustomMemo	

- "Understanding the Document Version History Task Flow"

  Figure 29–13 and Figure 29–14 show examples of the Document Version History task flow, where the `horizontalLayout` property is set to format vertically or horizontally, respectively. For information about setting properties for this task flow, see Section 29.7.13, "Document Version History Task Flow Parameters."

Figure 29–13 Version History Task Flow for File: Vertical Layout



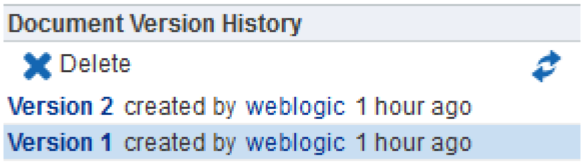
Document Version History

Delete

Version 2 created by weblogic
43 minutes ago

Version 1 created by weblogic
1 hour ago

Figure 29–14 Version History Task Flow for File: Horizontal Layout



Document Version History

Delete

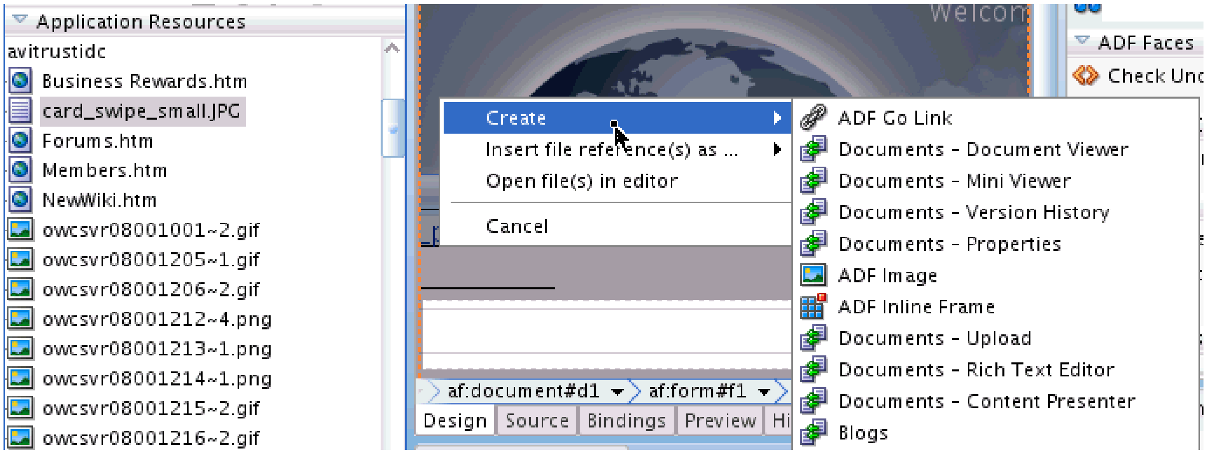
Version 2 created by weblogic 1 hour ago

Version 1 created by weblogic 1 hour ago

29.3 Understanding Document Components

The Documents tool provides features for adding document components to a portal page. As described in Section 29.4, "Adding a Selected Folder or File to a Page", you can add a document component to a page as a container for a selected folder or file (Figure 29–15).

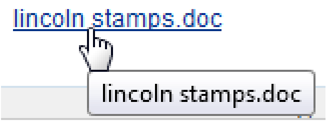
Figure 29–15 Adding a File to Portal Page



Document components enable you to display an individual file on a page in a variety of ways, depending on the file type:

- A **Link** displays the name of a selected file as a link, which end users can click to display the file content in its native application (Figure 29–16).

Figure 29–16 Link Component (for Microsoft Word file)

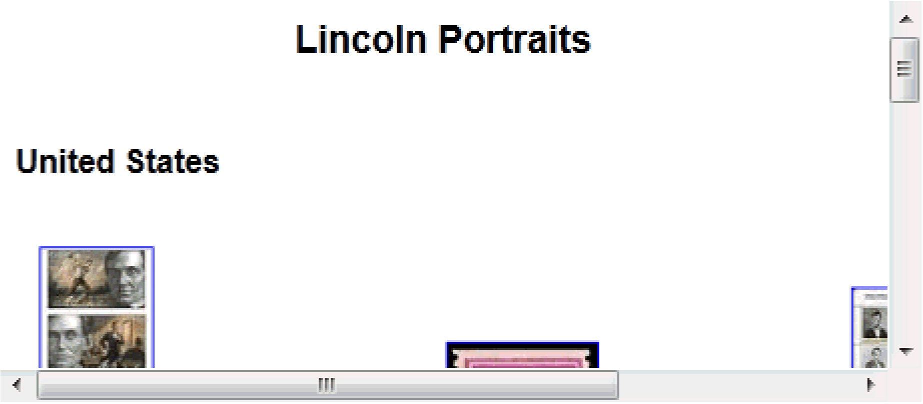


lincoln stamps.doc

lincoln stamps.doc

- An **Inline Frame** displays the content of a selected file as a preview on the page (Figure 29–17).

Figure 29–17 Inline Frame Component (for HTML file)



- An **Image** displays a selected file as an image on the page (Figure 29–18).

Figure 29–18 Image Component (for JPEG file)

To add a document component to a page in a Portal Framework application, you must first integrate the Documents tool into the application by establishing a connection to a content repository, as described in Chapter 28, "Integrating Documents."

Table 29–2 shows the document components available for the different content types.

Table 29–2 Components for Folders and FIles

Content Type	Document Components
Folder	Link (ADF Go Link)
Documents of various types (XML, PDF, JAVA, TXT, DOC, XLS, HTM)	Link (ADF Go Link)
Documents that can be rendered in a browser (HTML, flash, PDF and image)	Inline frame (ADF Inline Frame)
Images (PNG, JPG, GIF)	Link (ADF Go Link) Inline frame (ADF Inline Frame) Image (ADF Image)

To display a folder or file using one of these document components, see Section 29.4, "Adding a Selected Folder or File to a Page."

29.4 Adding a Selected Folder or File to a Page

This section describes how to display an individual folder or file from a connected content repository on a page, as shown inFigure 29–19 and Figure 29–20, by choosing the required container for the selected folder or file. If you want to add a content task flow to a page, independent of a specific folder or file, refer to Section 29.5, "Adding a Content Task Flow to a Page."

Figure 29–19 Adding a Folder to Portal Page

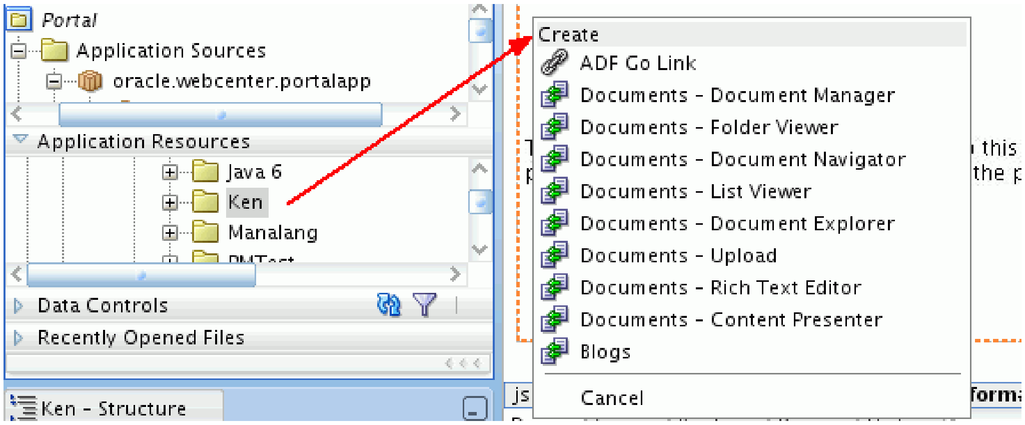


Figure 29–20 Adding a File to Portal Page

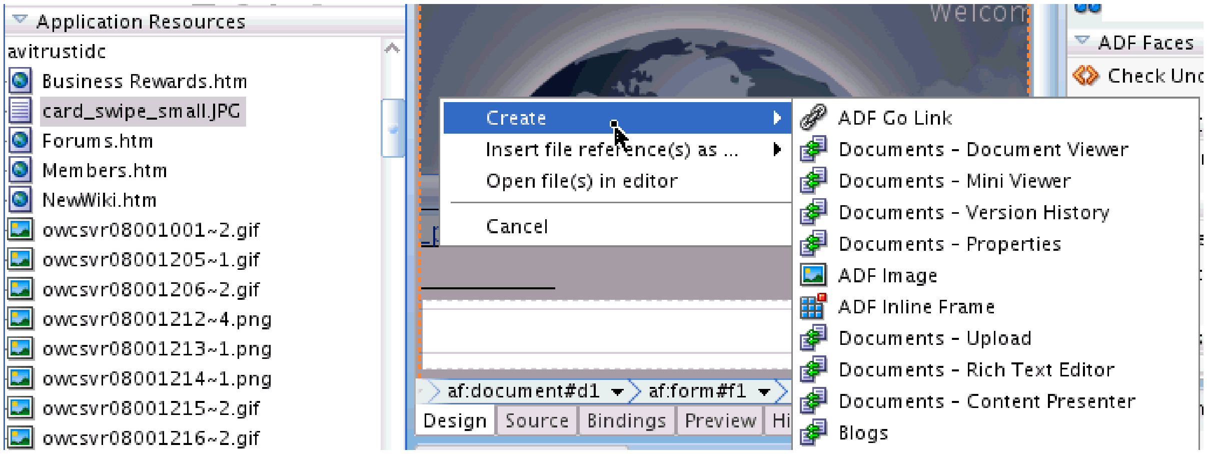


Table 29–3 lists all containers available for displaying folders and files on a portal page:

Table 29–3 Containers for Adding Individual Folders and Files to a Page

Root Folder	Folders	Individual Files
■ Document Explorer ■ Document List Viewer ■ Document Manager ■ Document Navigator ■ Folder Viewer ■ Recent Documents ■ Document Viewer[1] ■ Document Mini Properties[1] ■ Document Properties[1] ■ Document Upload ■ Rich Text Editor	■ Content Presenter ■ Document Explorer ■ Document List Viewer ■ Document Manager ■ Document Navigator ■ Folder Viewer ■ Document Viewer[1] ■ Document Mini Properties[1] ■ Document Properties[1] ■ Document Upload ■ Rich Text Editor	■ Content Presenter ■ Document Viewer ■ Document Mini Properties ■ Document Properties ■ Rich Text Editor ■ Document Upload ■ Document Version History ■ AutoVue ■ Link component ■ Inline Frame component ■ Image component

[1] To show folder information in a Document Viewer, Document Mini Properties, or Document Properties task flow, you must set the task flow's `resourceID` parameter to the ID of the target folder. See Section 29.7, "Content Task Flow Parameters."

For more information about any of the containers listed in Table 29–3, see Section 29.1, "Understanding the Content Presenter Task Flow," Section 29.2, "Understanding the Documents Task Flows," and Section 29.3, "Understanding Document Components."

Note: When an item that is stored in a content repository is dropped onto a page, the Portal Framework application instructs the browser to check whether the content is up-to-date before a cached copy, if available, displays in the browser. The default content validation process supports collaboration use cases that require real-time content exchange.

For static content or content that does not change frequently, content validation checks incur an unnecessary performance overhead. For static content, the following is recommended:

- **Oracle Content Server**: Use Content Presenter to display static content stored in WebCenter Content. Content Presenter shows only the latest released version of content; it does not show any unreleased content that is in workflow

- **Other content repositories**, such as SharePoint: Ask your administrator to override the default content cache setting by editing the Web Tier `mod_wl_ohs` configuration file (`mod_wl_ohs.conf`). This is fully explained in "Setting the Cache-Control Response Header" in the white paper "Integrating the SharePoint 2007 Adapter with WebCenter Spaces" available from Oracle Technology Network at `http://www.oracle.com/technetwork/middleware/webcenter/owcs-ps3-sharepoint-wcs-wp-335282.pdf`.

To add a selected folder or file to a page in a Portal Framework application (see Section 6.1, "Creating a New WebCenter Portal Framework Application"):

1. Follow the steps in Section 4.2.1, "How to Prepare Your Application to Consume Tools and Services" to implement security.

2. If you want to add a documents task flow, create a content repository connection, which adds the Documents tool to your application (see Chapter 28, "Integrating Documents").

3. Create or open a page in your application where you want to add the task flow (see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application").

4. Consider whether or not you want to allow end users of your application to edit the task flow that displays the folder or file:

   - To enable runtime editing of the page, see Chapter 18, "Enabling Runtime Editing of Pages Using Composer."

   - To allow end users of your application to customize a Content Presenter or Document List Viewer task flow using the **Edit** action, add the task flow inside a Show Detail Frame Component (see Section 18.1.6, "How to Enable Component Customization Using Show Detail Frame Components").

5. In the **Application Resources** panel, navigate to **Connections**, then **Content Repository**.

6. Locate the name of your connection, then expand it if desired to navigate to a specific folder or file.

7. Drag the folder or file to the page, and release the mouse button to display a menu of available task flows and document components, as shown in Figure 29–21 (root folder), Figure 29–22 (subfolder), and Figure 29–23 (individual file).

Figure 29–21 Adding a Content Repository Root Folder to Portal Page

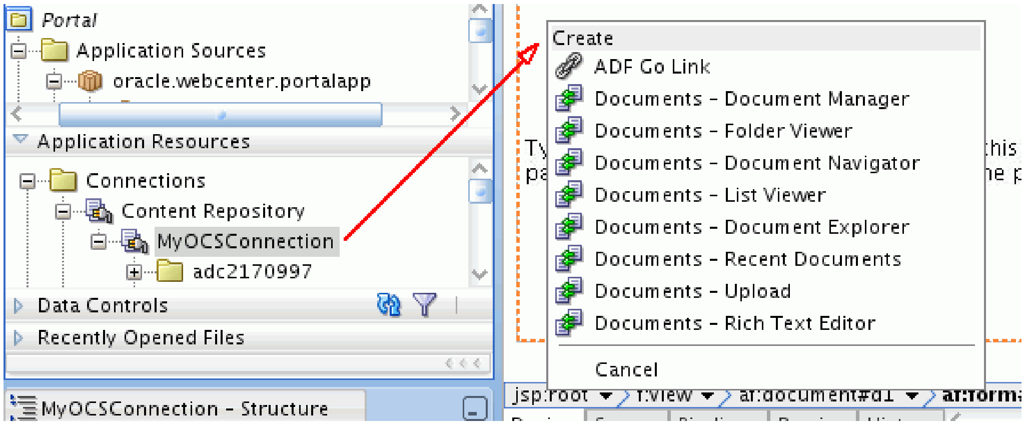


Figure 29–22 Adding a Subfolder to Portal Page

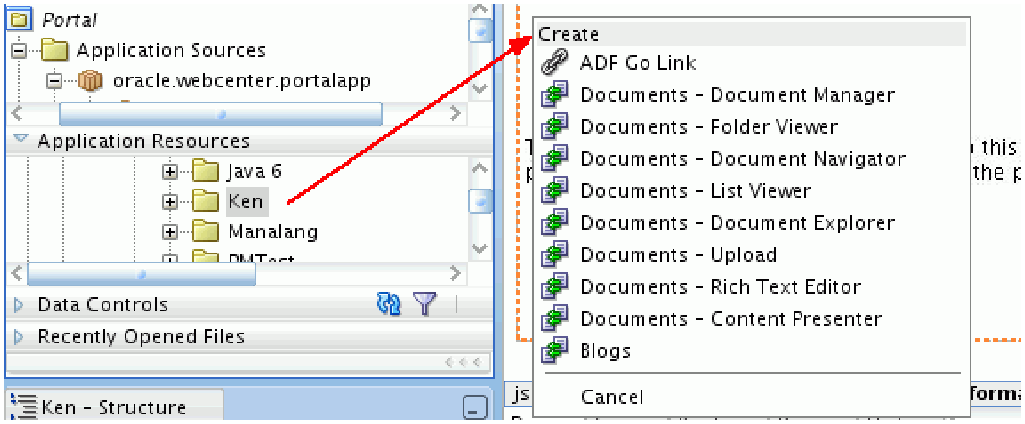
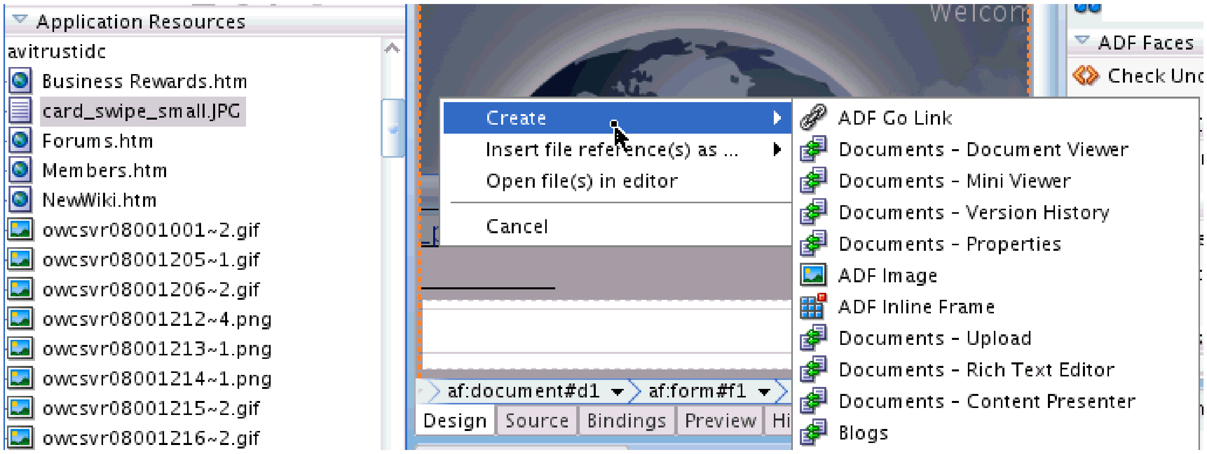

Portal
Application Sources
oracle.webcenter.portalapp
Application Resources
Java 6
Ken
Manalang
Data Controls
Recently Opened Files
Ken - Structure
Create
ADF Go Link
Documents - Document Manager
Documents - Folder Viewer
Documents - Document Navigator
Documents - List Viewer
Documents - Document Explorer
Documents - Upload
Documents - Rich Text Editor
Documents - Content Presenter
Blogs
Cancel

Figure 29–23 Adding a File to Portal Page



8. Choose the content task flow or document component that you want to use. If the folder or file you are adding to your page does not support a particular task flow, the task flow does not display in this menu.

> **Note:** The Content Presenter task flow is available only when the connected content repository is WebCenter Content. When you select the Content Presenter task flow, the folder or file displays in a default display template for its type.
>
> The Document Viewer, Document Mini Properties, and Document Properties task flows are not available in the **Create** menu for a folder. To show folder information in one of these task flows, you must first add an empty task flow to the page and then set the task flow's resource ID parameter to the ID of the target folder.

9. In the Edit Task Flow Binding dialog that displays when you select a task flow, click **OK** to accept the default task flow parameters, or modify the parameters as desired. For more information, see Section 29.7, "Content Task Flow Parameters."

10. Save your page and the page definition file, then run your page to your browser by right-clicking the page (not the page definition file) and choosing **Run**.

For information about viewing, editing, and managing content in content task flows, see the "Working with Content in a Portal" part in *Building Portals with Oracle WebCenter Portal*.

29.5 Adding a Content Task Flow to a Page

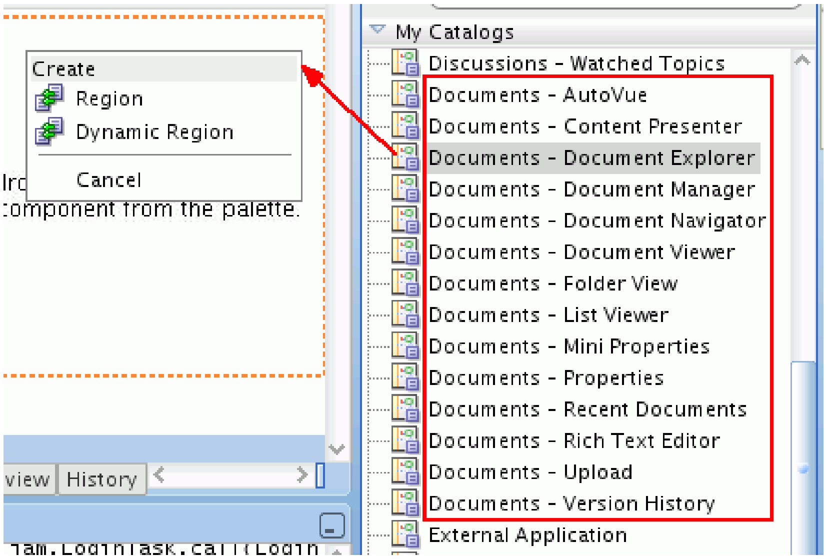
You may want to add an empty content task flow to a page, containing no folders or files. For example, in cases where you do not have a content repository connection, or want to use an EL expression as a parameter to dynamically bind to a target item.

See Chapter 24, "Introduction to Integrating and Publishing Content" for information about each content task flow to help you select the task flow most appropriate for your needs.

To add a content task flow to a page in a Portal Framework application:

1. Follow the steps in Section 4.2.1, "How to Prepare Your Application to Consume Tools and Services" to implement security.
2. If you want to add a documents task flow, see Chapter 28, "Integrating Documents".
3. Create or open a page in your application where you want to add the task flow (see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application").
4. Before you add a task flow to your page, consider whether you want to allow end users of your application to edit the task flow:
   - To enable runtime editing of the page, see Chapter 18, "Enabling Runtime Editing of Pages Using Composer."
   - To allow end users of your application to customize a Content Presenter or Document List Viewer task flow using the **Edit** action, add the task flow inside a Show Detail Frame Component (see Section 18.1.6, "How to Enable Component Customization Using Show Detail Frame Components").
5. In the **Resource Palette**, expand **My Catalogs**, then **WebCenter Portal - Services Catalog**. Under **Task Flows**, select the desired content task flow and drag it onto your page (Figure 29–24).

Figure 29–24 Adding a Standalone Documents Task Flow to JSF Page


Create
Region
Dynamic Region
Cancel
Irc
component from the palette.
view
History
My Catalogs
Discussions - Watched Topics
Documents - AutoVue
Documents - Content Presenter
Documents - Document Explorer
Documents - Document Manager
Documents - Document Navigator
Documents - Document Viewer
Documents - Folder View
Documents - List Viewer
Documents - Mini Properties
Documents - Properties
Documents - Recent Documents
Documents - Rich Text Editor
Documents - Upload
Documents - Version History
External Application
lam.LoginTask.call(Login

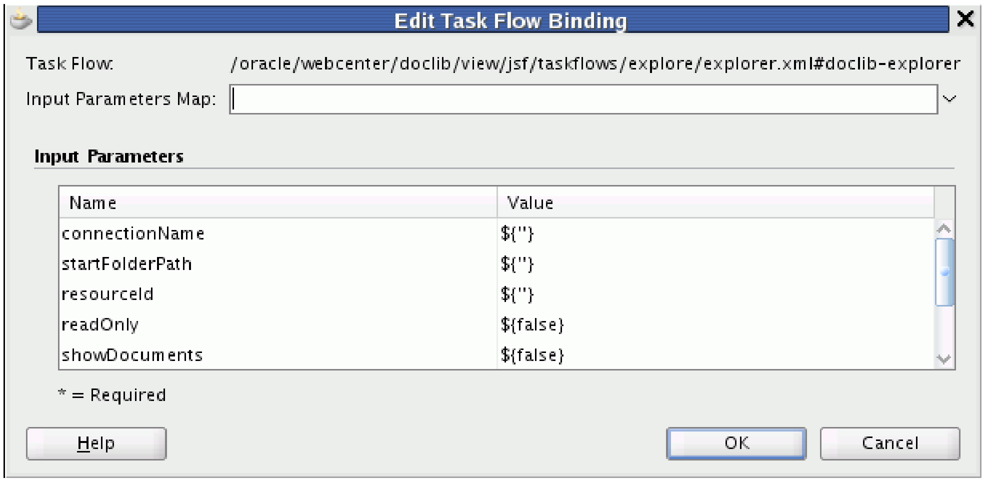
Note: To allow end users of your application to customize a Content Presenter or Document List Viewer task flow using the **Edit** action, drag the task flow inside a Show Detail Frame Component (see Section 18.1.6, "How to Enable Component Customization Using Show Detail Frame Components").

Note: If you display a wiki page in a Portal Framework application using a Content Presenter display template, by default any links within that wiki page are displayed in the Document Viewer. If you want to display wiki page links using Content Presenter, you must edit the `adf-config.xml` file. For more information, see Section 30.3.5, "Displaying Wiki Page Links Within Content Presenter."

---

6. From the menu that displays, choose **Region** to open the Edit Task Flow Binding dialog (Figure 29–25).

Figure 29–25 Specifying Parameters for Document Explorer Task Flow



Task Flow: /oracle/webcenter/doclib/view/jsf/taskflows/explore/explorer.xml#doclib-explorer

Input Parameters Map:

Input Parameters

Name	Value
connectionName	${''}
startFolderPath	${''}
resourceId	${''}
readOnly	${false}
showDocuments	${false}

* = Required

7. In the Edit Task Flow Binding dialog, click **OK** to accept the default task flow parameters, or modify the parameters as desired. For more information, see Section 29.7, "Content Task Flow Parameters."
8. Save your page and the page definition file, then run your page to your browser by right-clicking the page (not the page definition file) and choosing **Run**.

After you add a content task flow to a page, you can subsequently modify the parameters if required. See Section 29.6, "Modifying Content Task Flow Parameters."

For information about viewing, editing, and managing content in content task flows, see the "Working with Content in a Portal" part in *Building Portals with Oracle WebCenter Portal*.

Note: For information about adding custom actions to task flows, see Section 20.3.2, "How to Enable Custom Actions on a Show Detail Frame Enclosing a Task Flow."

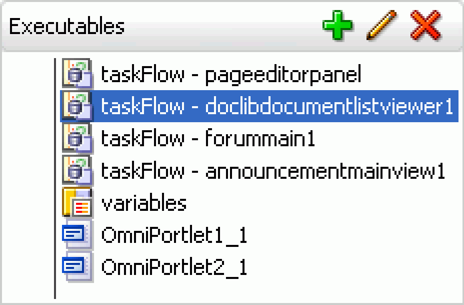
Note: By default, the task flow displays as full screen at runtime. You can use ADF layout components to modify this layout. To learn more about ADF layout components, refer to the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

29.6 Modifying Content Task Flow Parameters

To modify the parameters of a content task flow after you have created the region:

1. Go to the Bindings view of your page (click the **Bindings** tab next to the **Source** tab).
2. Under **Executables**, select the task flow you added. Figure 29–26 shows an example of a Document List Viewer task flow in the **Executables** section.

Figure 29–26 Document List View Task Flow in the Bindings View

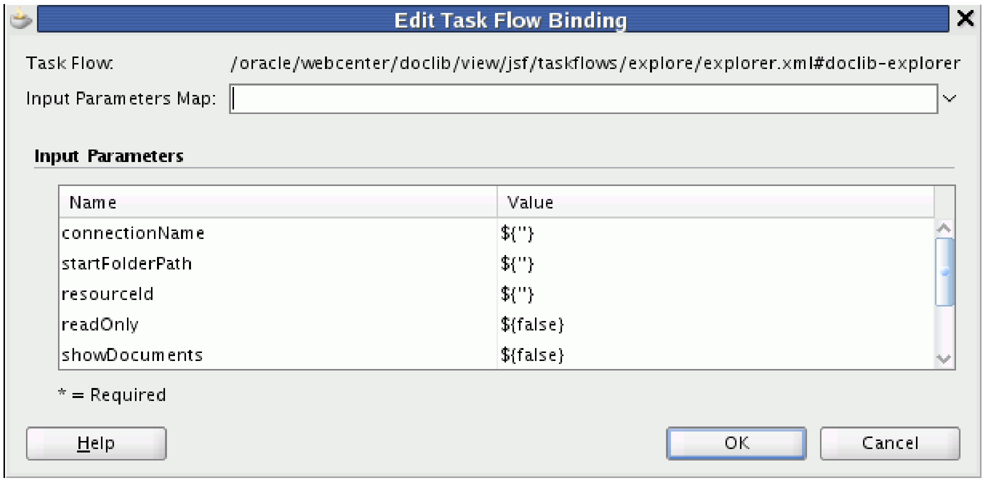

Executables
taskFlow - pageeditorpanel
taskFlow - doclibdocumentlistviewer1
taskFlow - forummain1
taskFlow - announcementmainview1
variables
OmniPortlet1_1
OmniPortlet2_1

3. Next to the **Executables** heading, click the pencil icon to display the Edit Task Flow Binding dialog.
4. In the Edit Task Flow Binding dialog, specify parameter settings for the task flow. For more information, see Section 29.7, "Content Task Flow Parameters."

Note: For a Content Presenter task flow:

- If you want to allow end users of your application to select the content and display template using the Content Presenter Configuration dialog at runtime, you can leave all parameter values blank except for `taskFlowInstId`. Enter a task flow instance ID that is unique to your application (for example, `contentPresenterInstance1`).
- If you specify the content and a display template, note that Content Presenter does not support non-ASCII characters in files that are encoded using the non-UTF-8 character encoding. When users preview such files in Content Presenter, non-ASCII characters appear garbled.

Figure 29–27 Task Flow Binding Parameters



Task Flow: /oracle/webcenter/doclib/view/jsf/taskflows/explore/explorer.xml#doclib-explorer

Input Parameters Map:

Input Parameters

Name	Value
connectionName	${''}
startFolderPath	${''}
resourceId	${''}
readOnly	${false}
showDocuments	${false}

* = Required

5. Click **OK** to add the parameters.

29.7 Content Task Flow Parameters

Each content task flow has its own set of parameters. You configure these values when you add the task flow to a page.

The following sections describe the parameters for the content task flows:

- Section 29.7.1, "Content Presenter Task Flow Parameters and Out-of-the-Box Display Templates"
- Section 29.7.2, "Document Explorer Task Flow Parameters"
- Section 29.7.3, "Document List Viewer Task Flow Parameters"
- Section 29.7.4, "Document Manager Task Flow Parameters"
- Section 29.7.5, "Document Navigator Task Flow Parameters"
- Section 29.7.6, "Folder Viewer Task Flow Parameters"
- Section 29.7.7, "Recent Documents Task Flow Parameters"
- Section 29.7.8, "Document Viewer Task Flow Parameters"
- Section 29.7.9, "Document Mini Properties Task Flow Parameters"
- Section 29.7.10, "Document Properties Task Flow Parameters"
- Section 29.7.11, "Rich Text Editor Task Flow Parameters"
- Section 29.7.12, "Document Upload Task Flow Parameters"
- Section 29.7.13, "Document Version History Task Flow Parameters"

29.7.1 Content Presenter Task Flow Parameters and Out-of-the-Box Display Templates

The Content Presenter task flow is available when the connected content repository is WebCenter Content. This task flow displays selected documents in out-of-the-box or custom display templates.

See Also:

- Section 29.1, "Understanding the Content Presenter Task Flow"
- Section 29.5, "Adding a Content Task Flow to a Page"

Table 29–4 describes the Content Presenter task flow parameters. Table 29–5 and Table 29–6 describe the out-of-the-box display templates for single and multiple content items, which can be specified as values for the `templateView` and `templateCategory` parameters.

Note: When you specify the content and a display template, note that Content Presenter does not support non-ASCII characters in files that are encoded using the non-UTF-8 character encoding. When users preview such files in Content Presenter, non-ASCII characters appear garbled.

If you want to allow end users of your application to select the content and display template using the Content Presenter Configuration dialog at runtime, you can leave all parameter values blank except for `taskFlowInstId`. Enter a task flow instance ID that is unique to your application (for example, `contentPresenterInstance1`).

At runtime, the parameters of a Content Presenter task flow on an editable page can be edited in two ways by end users with appropriate permissions:

- Click the configuration **Edit** icon for the task flow to display the Content Presenter Configuration dialog, where they can specify content and a display template. For information about the Content Presenter Configuration dialog at runtime, see the "Publishing Content Using Content Presenter" chapter in *Building Portals with Oracle WebCenter Portal*.
- Click the properties **Edit** icon for the task flow to display the Component Properties dialog where they can set and modify task flow parameters. Parameters set in this way are generally intended for use at design time by developers creating a Portal Framework application, or for advanced users who want to bind a parameter to an EL expression. If an end user modifies a parameter value in the Component Properties dialog, the new value overrides the value specified in the Content Presenter Configuration dialog.

Table 29–4 Content Presenter Task Flow Parameters

Parameter	Description
`datasource`	The data source of the content. The value depends on the value of `datasourceType`: ■ When `datasourceType=dsTypeSingleNode`, set `datasource` to a single document node identifier in the format: *connection_name*#dDocName:*content_id* Example: `xmlns.oracle.com#dDocName:STAN_IDC-007619` ■ When `datasourceType=dsTypeFolderContents`, set `datasource` to a single folder node identifier in the format: *connection_name*#dCollectionID:*collection_id* Example: `xmlns.oracle.com#dCollectionID:45535` ■ When `datasourceType=dsTypeQueryExpression`, set `datasource` to a CMIS search expression. **Note:** Using a CMIS query as the `datasource` requires a valid taskFlowInstId. Examples: `select * from cmis:document where cmis:name like \'test%\'` connectionName=*connection_name*#select * from cmis:document where cmis:createdBy = \'weblogic\' **Note:** If `connectionName` is not specified, then the primary connection will be used. For more information about how to format the query and for more examples, see Chapter 31, "Content Management REST API.". ■ When `datasourceType=dsTypeMultiNode`, set `datasource` to a set of comma-delimited document node identifiers in the format: *connection_name*#dDocName:*content_id*, *connection_name*#dDocName:*content_id*, ... Example: `myconn#dDocName:DOCUMENT_ID_12345,myconn#dDocName:DOCUMENT_ID_56789`

Table 29–4 (Cont.) Content Presenter Task Flow Parameters

Parameter	Description
`datasource` (cont'd)	■ When `datasourceType=dsTypeScenarioResults`, set `datasource` to point to a scenario in the format: `conductor-connection-name=`*`conductor_conn_name`*`,`*`namespace=scenario_namespace`*`,scenario-name=`*`scenario_name`*`,`*`inputparm1=value1,inputparm2=value2`*`,` ... Example: `conductor-connection-name=ConductorServiceLocal,namespace=CPNamespace,scenario-name=GetRelatedDocsScenario,topic=outdoors,interests=hiking` Where: *`connection_name`* = the name of the content repository connection. *`content_id`* = the `Content ID` for the content specified on the content information page for the item in WebCenter Content. *`collection_id`* = the `dCollectionID` found in the URL for the folder information page in WebCenter Content, or the `CollectionID` value on the content server. *`conductor_connection_name`* = the name of the URL connection that points to the Personalization Conductor (this name must start with `Conductor`). This value must match the `Reference name` attribute value in the `connections.xml` file for this URL connection. For more information, see the "Configuring Content Presenter" chapter in *Administering Oracle WebCenter Portal* and Appendix A, "WebCenter Portal Files" (for details about `connections.xml`). *`namespace`* = the name of the namespace that contains the specified scenario. *`scenario_name`* = the name of the scenario that Content Presenter will be using. For information about the Personalization Conductor and scenarios, see Chapter 66, "Personalizing Oracle WebCenter Portal Applications."
`datasourceType`	The data source type of the content. Valid values are: ■ `dsTypeSingleNode`: A single content item. ■ `dsTypeFolderContents`: The contents of a folder. ■ `dsTypeQueryExpression`: The results of a query. ■ `dsTypeMultiNode`: An ordered list of content items. ■ `dsTypeScenarioResults`: The results of the specified scenario. See Chapter 66, "Personalizing Oracle WebCenter Portal Applications."
`maxResults`	The maximum number of results to display when `datasourceType` is `dsTypeQueryExpression`. Default: `100`

Table 29–4 (Cont.) Content Presenter Task Flow Parameters

Parameter	Description
`regionTemplate`	Specifies whether the display template is a Site Studio region definition template. This value is valid only with WebCenter Content 11*g* or higher: - Selected: Display template is a Site Studio region definition template. The `templateView` value is set to the Content ID of the region template. - Cleared (default): Display template is not a Site Studio region definition template. For information about creating and using Site Studio region templates, see the "Publishing Content Using Content Presenter" chapter in *Building Portals with Oracle WebCenter Portal* and the Oracle Site Studio documentation library.
`taskFlowInstId`	The unique identifier of this task flow instance, used internally to maintain the association of the task flow instance with its customization and personalization settings and to manage saved queries. The value is generated automatically when you add individual files or the content of folders to your page from the Application Resources Panel, displaying the content in a Content Presenter task flow. The value is blank when you add a Content Presenter task flow onto your page from the Resource Palette. Enter or edit this value to set the unique identifier for the task flow. **Note:** Using a CMIS query as the `datasource` requires a valid taskFlowInstId.
`templateCategory`	The display template category ID to use in rendering results for multiple content items. This ID may reference the default template category for an out-of-the-box display template (Table 29–6) or a custom category created for a display template for multiple content items that has been defined as described in Section 27.3, "Creating Content Presenter Display Templates".
`templateView`	The display template view ID to use in rendering results for single content items. Enter the view ID of a template that is configured in the Resource Manager for a specific content type, or for list-based templates by category ID. This ID may reference one of the out-of-the-box display templates (Table 29–5), a custom display template that has been defined as described in Section 27.3, "Creating Content Presenter Display Templates", or set to the contentID of a region template if the content is a region.

The out-of-the-box display templates provided by Oracle WebCenter are listed in Table 29–5 and Table 29–6.

Table 29–5 Out-of-the-Box Templates for Displaying Single Content Items

Single Content Item Display Templates	View ID	Description
Default Document Details View	`oracle.webcenter.content.templates.default.document.details`	Displays detailed information about any single content item including creation date, modification date, created by username, modified by username, path and any comments.

Table 29–5 (Cont.) Out-of-the-Box Templates for Displaying Single Content Items

Single Content Item Display Templates	View ID	Description
Default List Item View	`oracle.webcenter.content.templates.default.list.item`	Used by multiple content item views to display each individual item. Displays a single line with an icon and item name as a link that either displays or downloads the item when clicked.
Default View (default when no template is selected)	`oracle.webcenter.content.templates.default.detail`	Displays any single content item, either directly in the browser (images, HTML, text) or as a link that downloads the associated file when clicked.
Full Article View	`oracle.webcenter.content.templates.sitestudio.fullarticle`	Displays a full article, including the Title, Image, and Body of an article. This is a *responsive template*, meaning that it CSS3 media queries to produce a responsive layout—a layout that adjusts to the width of the browser. For more information, see Section 27.3.4, "Using Responsive Templates." This template requires Site Studio to be enabled on the WebCenter Content, as it uses the `RD_ARTICLE` Site Studio region definition.

Table 29–6 Out-of-the-Box Templates for Displaying Multiple Content Items

Multiple Content Item Display Templates	View ID	Description
Accordion View	`oracle.webcenter.content.templates.default.list.panel.accordion`	Displays multiple content items in an accordion format, where each item can be expanded to display its details.
Articles View (under the Site Studio Template category)	`oracle.webcenter.content.templates.sitestudio.articles`	Displays the summaries of multiple articles, including the Title, Image, and Summary of articles. This is a *responsive template*, meaning that it CSS3 media queries to produce a responsive layout—a layout that adjusts to the width of the browser. For more information, see Section 27.3.4, "Using Responsive Templates." This template requires Site Studio to be enabled on the WebCenter Content, as it uses the `RD_ARTICLE` Site Studio region definition.
Bulleted View	`oracle.webcenter.content.templates.default.list.bulleted`	Displays multiple content items in a bulleted list format. Only content items will be displayed; folder items will be omitted.

Table 29–6 (Cont.) Out-of-the-Box Templates for Displaying Multiple Content Items

Multiple Content Item Display Templates	View ID	Description
Bulleted with Folder Label View	`oracle.webcenter.content.templates.default.list.bulleted.label`	Displays multiple content items in a bulleted list format. The name of the folder containing the first item in the list will display as a label above the list. This template is intended to be used when datasourceType is set to dsTypeFolderContents to ensure that all items have the same parent folder. Only content items will be displayed; folder items will be omitted.
Carousel View	`oracle.webcenter.content.templates.default.list.carousel`	Displays multiple content items in a carousel format, where items can be browsed by moving a slider left or right.
Icon View	`oracle.webcenter.content.templates.default.list.tile`	Displays multiple content items in a tiled format with large icons and file names.
List View (default when no template is selected)	`oracle.webcenter.content.templates.default.list.simple`	Displays multiple content items in a simple list.
List with Details Panel View	`oracle.webcenter.content.templates.default.list.details.panel`	Displays multiple content items in a list on the left, with a panel to the right displaying the details of a selected item.
Sortable Table View	`oracle.webcenter.content.templates.default.list.tabular`	Displays multiple content items in a sortable table that includes the document name, date created, and date modified.
Tabbed View	`oracle.webcenter.content.templates.default.list.panel.tabbed`	Displays multiple content items as tabs that can be selected to display item details. content items in a simple list.

29.7.2 Document Explorer Task Flow Parameters

The Document Explorer task flow displays a list of folders and files in two panes: the left pane shows folders, and the right pane show the contents of the currently selected folder. It is a feature-rich documents task flow for viewing, managing, and collaborating on folders and files.

See Also:

- "Understanding the Document Explorer Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Document Explorer task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–7 describes the Document Explorer task flow parameters.

Table 29–7 Document Explorer Task Flow Parameters

Parameter	Description
connectionName	The name of the content repository connection. If no value is selected, the default connection specified by the application developer or administrator is used. For information about configuring content repository connections, see the "Registering Content Repositories" chapter in *Administering Oracle WebCenter Portal*. Default: The connection selected as default in the Create Content Repository Connection dialog box by the application developer, which can be changed by the administrator.
featuresOff	A list of disabled features for the task flow. Use commas or spaces to separate items. Valid values are exposed in the JavaDoc: checkin, checkout, clipboard, close, delete, download, dnd, editwiki, editoffice, newfolder, newwiki, rename, upload, multifile-upload, profile-upload, search, advancedSearch, workflow, properties, history, comments, likes, links, tags, recommendations, autovue, title, related-items, social, sidebars, ils. Example: `${'search, advancedSearch, clipboard, dnd, rename, newfolder, upload, newwiki, checkin, checkout, editoffice, edithtml, delete, sidebars, history'}`
pageSize	The maximum number of rows to show in the task flow. If the listing of folders and files in the task flow is larger than the specified number of rows, the task flow displays a scroll bar. Default: 27 Typical scenarios where you may want to alter this value are: ■ The majority of end users have bigger screens, allowing for the display of more rows. ■ You want to fit this task flow into a smaller area of a page. **Note:** If you set pageSize to a value that is too big for the size of the screen, the end user will experience difficulty coordinating the task flow scroll bar with the application scroll bar.
readOnly	Specifies whether to disable and hide all content management operations: ■ ${true}: Disable content management. ■ ${false} (default): Expose content management to users.
resourceId	The currently focused resource. This value can be a folder ID or a document ID. The resourceId value is checked for coherence with the connectionName and startFolderPath values, and influences their default values when they are not explicitly specified. For example, if resourceId alone is specified, the connectionName value will be inherited from it and the startFolderPath will be either the resource itself for a folder or the parent folder for a file.
showDocuments	Specifies whether the navigation tree shows documents and folders, or folders only: ■ ${true}: Show documents and folders. ■ ${false} (default): Show folders and hide documents.
showFolders	Specifies whether the navigation tree shows documents and folders, or documents only: ■ ${true} (default): Show folders and documents. ■ ${false}: Show documents and hide folders.

Table 29–7 (Cont.) Document Explorer Task Flow Parameters

Parameter	Description
`startFolderPath`	The name of the folder to use as the root folder in the current task flow instance. This is a content-scoping parameter that assists with determining the source and range of content to display in the task flow instance. There is no need to set this value for task flows that display the content of the current portal's default root folder. But it is useful, for example, when you want the start folder to be other than a portal's default root folder and when you want to display content from another portal. Example: ■ `${'/PersonalSpaces/monty/Public'}` ■ `${'/WebCenterB5/Proj_X/Specs'}` You can specify an EL expression to set this value. Default: The root folder of the content repository configured with the specified connection for the current portal.
`treeNavCollapsed`	Specifies whether to collapse or expand the panel containing the tree navigation: ■ `${true}` (default): Collapse panel. ■ `${false}`: Expand panel.

29.7.3 Document List Viewer Task Flow Parameters

The Document List Viewer task flow displays folders and files in a single pane as a flat listing. In this task flow, users can navigate a folder hierarchy, and customize search queries. While this task flow may be useful for a specific need, its search functionality is replicated and enhanced by the Content Presenter task flow.

See Also:

- "Understanding the Document List Viewer Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Document List Viewer task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–8 describes the Document List Viewer task flow parameters.

Table 29–8 Document List Viewer Task Flow Parameters

Task Flow Parameter	Description
`connectionName`	The name of the content repository connection. If no value is selected, the default connection specified by the application developer or administrator is used. For information about configuring content repository connections, see the "Registering Content Repositories" chapter in *Administering Oracle WebCenter Portal*. Default: The connection selected as default in the Create Content Repository Connection dialog box by the application developer, which can be changed by the administrator.

Table 29–8 (Cont.) Document List Viewer Task Flow Parameters

Task Flow Parameter	Description
`createdAfter`	A filtering value to limit the display of task flow content to folders and files created after a specified date and time. The value uses the ISO 8601 format: `${'yyyy-mm-ddThh:mm:ss.sssTZ'}`[1] Example: `${'2011-03-17T18:24:36.000+01:00'}`
`createdBefore`	A filtering value to limit the display of task flow content to folders and files created before a specified date and time. The value uses the ISO 8601 format: `${'yyyy-mm-ddThh:mm:ss.sssTZ'}`[1] Example: `${'2011-03-17T18:24:36.000+01:00'}`
`creator`	A filtering value to limit the display of task flow content to folders and files created by a particular user. Enter the user name as specified by the user login credentials. Only one user name may be entered. If no value is entered, then content created by any user is shown. Example: `${'monty'}`
`lastModifiedAfter`	A filtering value to limit the display of task flow content to folders and files last modified after a specified date and time. If no value is entered, then content modified in the last three months is shown. The value uses the ISO 8601 format: `${'yyyy-mm-ddThh:mm:ss.sssTZD'}`[1] Example: `${'2011-03-17T18:24:36.000+01.00'}`
`lastModifiedBefore`	A filtering value to limit the display of task flow content to folders and files modified before a specified date and time. If no value is entered, then the last modification date is applied. The value uses the ISO 8601 format: `${'yyyy-mm-ddThh:mm:ss.sssTZD'}`[1] Example: `${'2011-03-17T18:24:36.000+01:00'}`
`lastModifier`	A filtering value to limit the display of task flow content to folders and files last modified by a particular user. Enter the user name as specified by the user login credentials. Only one user name may be entered. If no value is entered, then all modified documents are shown. Example: `${'monty'}`
`pageSize`	The maximum number of rows to show in the task flow. If the listing of folders and files in the task flow is larger than the specified number of rows, the task flow displays a scroll bar. Default: `15` Typical scenarios where you may want to alter this value are: ■ The majority of end users have bigger screens, allowing for the display of more rows. ■ You want to fit this task flow into a smaller area of a page. **Note:** If you set `pageSize` to a value that is too big for the size of the screen, the end user will experience difficulty coordinating the task flow scroll bar with the application scroll bar.

Table 29–8 (Cont.) Document List Viewer Task Flow Parameters

Task Flow Parameter	Description
`startFolderPath`	The name of the folder to use as the root folder in the current task flow instance. This is a content-scoping parameter that assists with determining the source and range of content to display in the task flow instance. There is no need to set this value for task flows that display the content of the current portal's default root folder. But it is useful, for example, when you want the start folder to be other than a portal's default root folder and when you want to display content from another portal. Example: ■ `${'/PersonalSpaces/monty/Public'}` ■ `${'/WebCenterB5/Proj_X/Specs'}` You can specify an EL expression to set this value. Default: The root folder of the content repository configured with the specified connection for the current portal.
`showFolders`	Specifies whether to show documents and folders, or documents only: ■ `${true}`: show folders and documents ■ `${false}` (default): show documents and hide folders
`taskFlowInstId`	The unique identifier for this task flow instance, used internally to maintain the association of the task flow instance with its customization and personalization settings and to manage saved queries. The value is generated automatically when you add individual files or the content of folders to your page from the Application Resources Panel, displaying the content in a Document List Viewer task flow. The value is blank when you add a Document List Viewer task flow onto your page from the Resource Palette. Enter or edit this value to set the unique identifier for the task flow.

[1] "TZ" is the time zone indicator. If the time being described is in UTC (Coordinated Universal Time), then the time zone indicator is "Z". If the time is from any other time zone, then TZ describes the offset from UTC of the time zone. For example, if the time is in California in December (Pacific Standard Time, PST), then the TZ indicator would be "-08:00".

29.7.4 Document Manager Task Flow Parameters

The Document Manager task flow provides comprehensive document management functionality, such as copying, moving, pasting, and deleting folders and files, as well as the ability to configure the task flow layout. The Document Manager task flow displays folders and files as specified by its `layout` parameter: it can display folders and files in two panes (`explorer` layout), or a single pane showing only the content of the current folder (`table` layout), or a single pane showing the folder hierarchy starting from the root folder (`treeTable` layout). The `explorer` layout is identical to the Document Explorer task flow, without the properties `showDocuments`, `showFolders`, and `treeNavCollapsed`.

See Also:

- "Understanding the Document Manager Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Document Manager task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–9 describes the Document Manager task flow parameters.

Table 29–9 Document Manager Task Flow Parameters

Task Flow Parameter	Description
`connectionName`	The name of the content repository connection. If no value is selected, the default connection specified by the application developer or administrator is used. For information about configuring content repository connections, see the "Registering Content Repositories" chapter in *Administering Oracle WebCenter Portal*. Default: The connection selected as default in the Create Content Repository Connection dialog box by the application developer, which can be changed by the administrator.
`featuresOff`	A list of disabled features for the task flow. Use commas or spaces to separate items. Valid values are exposed in the JavaDoc: `checkin`, `checkout`, `clipboard`, `close`, `delete`, `download`, `dnd`, `editwiki`, `editoffice`, `newfolder`, `newwiki`, `rename`, `upload`, `multifile-upload`, `profile-upload`, `search`, `advancedSearch`, `workflow`, `properties`, `history`, `comments`, `likes`, `links`, `tags`, `recommendations`, `autovue`, `title`, `related-items`, `social`, `sidebars`, `ils`. Example: `${'search, advancedSearch, clipboard, dnd, rename, newfolder, upload, newwiki, checkin, checkout, editoffice, edithtml, delete, sidebars, history'}`
`layout`	A target layout for the task flow. Select from: ■ `${'explorer'}` (default): Displays folders and files in two panes; the left pane shows folders, and the right pane shows the contents of the currently selected folder. This layout looks identical to the Document Explorer task flow, without the parameters `showDocuments`, `showFolders`, and `treeNavCollapsed`. See Figure 29–3. ■ `${'table'}`: Displays only the contents of the current folder in a single pane, with the capability to click a folder to drill down, refreshing the pane with the folder contents. See Figure 29–4. ■ `${'treeTable'}`: Displays the folder hierarchy in a single pane, beginning with the root folder, with the capability to expand and collapse folders. See Figure 29–5.
`pageSize`	The maximum number of rows to show in the task flow. If the listing of folders and files in the task flow is larger than the specified number of rows, the task flow displays a scroll bar. Default: `27` Typical scenarios where you may want to alter this value are: ■ The majority of end users have bigger screens, allowing for the display of more rows. ■ You want to fit this task flow into a smaller area of a page. **Note:** If you set `pageSize` to a value that is too big for the size of the screen, the end user will experience difficulty coordinating the task flow scroll bar with the application scroll bar.
`readOnly`	Specifies whether to disable and hide all content management operations: ■ `${true}`: Disable content management. ■ `${false}` (default): Expose content management to users.

Table 29–9 (Cont.) Document Manager Task Flow Parameters

Task Flow Parameter	Description
`resourceId`	The currently focused resource. This value can be a folder ID or a document ID. The `resourceId` value is checked for coherence with the `connectionName` and `startFolderPath` values, and influences their default values when they are not explicitly specified. For example, if `resourceId` alone is specified, the `connectionName` value will be inherited from it and the startFolderPath will be either the resource itself for a folder or the parent folder for a file.
`startFolderPath`	The name of the folder to use as the root folder in the current task flow instance. This is a content-scoping parameter that assists with determining the source and range of content to display in the task flow instance. There is no need to set this value for task flows that display the content of the current portal's default root folder. But it is useful, for example, when you want the start folder to be other than a portal's default root folder and when you want to display content from another portal. Example: ■ `${'/PersonalSpaces/monty/Public'}` ■ `${'/WebCenterB5/Proj_X/Specs'}` You can specify an EL expression to set this value. Default: The root folder of the content repository configured with the specified connection for the current portal.

29.7.5 Document Navigator Task Flow Parameters

The Document Navigator task flow displays folders and files in a single pane, with the capability to expand and collapse folders to view folder hierarchy within the current folder. There are no menu options available to the end user for this task flow.

See Also:

- "Understanding the Document Navigator Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Document Navigator task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–10 describes the Document Navigator task flow parameters.

Table 29–10 Document Navigator Task Flow Parameters

Parameter	Description
`connectionName`	The name of the content repository connection. If no value is selected, the default connection specified by the application developer or administrator is used. For information about configuring content repository connections, see the "Registering Content Repositories" chapter in *Administering Oracle WebCenter Portal*. Default: The connection selected as default in the Create Content Repository Connection dialog box by the application developer, which can be changed by the administrator.

Table 29–10 (Cont.) Document Navigator Task Flow Parameters

Parameter	Description
featuresOff	A list of disabled features for the task flow. Use commas or spaces to separate items. Valid values are exposed in the JavaDoc: checkin, checkout, clipboard, close, delete, download, dnd, editwiki, editoffice, newfolder, newwiki, rename, upload, multifile-upload, profile-upload, search, advancedSearch, workflow, properties, history, comments, likes, links, tags, recommendations, autovue, title, related-items, social, sidebars, ils. Example: `${'search, advancedSearch, clipboard, dnd, rename, newfolder, upload, newwiki, checkin, checkout, editoffice, edithtml, delete, sidebars, history'}`
pageSize	The maximum number of rows to show in the task flow. If the listing of folders and files in the task flow is larger than the specified number of rows, the task flow displays a scroll bar. Default: 27 Typical scenarios where you may want to alter this value are: ■ The majority of end users have bigger screens, allowing for the display of more rows. ■ You want to fit this task flow into a smaller area of a page. **Note:** If you set pageSize to a value that is too big for the size of the screen, the end user will experience difficulty coordinating the task flow scroll bar with the application scroll bar.
readOnly	Specifies whether to disable and hide all content management operations: ■ ${true}: Disable content management. ■ ${false} (default): Expose content management to users.
resourceId	The currently focused resource. This value can be a folder ID or a document ID. The resourceId value is checked for coherence with the connectionName and startFolderPath values, and influences their default values when they are not explicitly specified. For example, if resourceId alone is specified, the connectionName value will be inherited from it and the startFolderPath will be either the resource itself for a folder or the parent folder for a file.
showDocuments	Specifies whether the navigation tree shows documents and folders, or folders only: ■ ${true} (default): Show documents and folders. ■ ${false}: Show folders and hide documents.

Table 29–10 (Cont.) Document Navigator Task Flow Parameters

Parameter	Description
`startFolderPath`	The name of the folder to use as the root folder in the current task flow instance. This is a content-scoping parameter that assists with determining the source and range of content to display in the task flow instance. There is no need to set this value for task flows that display the content of the current portal's default root folder. But it is useful, for example, when you want the start folder to be other than a portal's default root folder and when you want to display content from another portal. Example: ■ `${'/PersonalSpaces/monty/Public'}` ■ `${'/WebCenterB5/Proj_X/Specs'}` You can specify an EL expression to set this value. Default: The root folder of the content repository configured with the specified connection for the current portal.

29.7.6 Folder Viewer Task Flow Parameters

The Folder Viewer task flow displays a listing of the contents of a folder in a single pane as a flat listing.

See Also:

- "Understanding the Folder Viewer Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Folder Viewer task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–11 describes the Folder Viewer task flow parameters.

Table 29–11 Folder Viewer Task Flow Parameters

Parameter	Description
`connectionName`	The name of the content repository connection. If no value is selected, the default connection specified by the application developer or administrator is used. For information about configuring content repository connections, see the "Registering Content Repositories" chapter in *Administering Oracle WebCenter Portal*. Default: The connection selected as default in the Create Content Repository Connection dialog box by the application developer, which can be changed by the administrator.

Table 29–11 (Cont.) Folder Viewer Task Flow Parameters

Parameter	Description
featuresOff	A list of disabled features for the task flow. Use commas or spaces to separate items. Valid values are exposed in the JavaDoc: checkin, checkout, clipboard, close, delete, download, dnd, editwiki, editoffice, newfolder, newwiki, rename, upload, multifile-upload, profile-upload, search, advancedSearch, workflow, properties, history, comments, likes, links, tags, recommendations, autovue, title, related-items, social, sidebars, ils. Example: ${'search, advancedSearch, clipboard, dnd, rename, newfolder, upload, newwiki, checkin, checkout, editoffice, edithtml, delete, sidebars, history'}
pageSize	The maximum number of rows to show in the task flow. If the listing of folders and files in the task flow is larger than the specified number of rows, the task flow displays a scroll bar. Default: 27 Typical scenarios where you may want to alter this value are: ■ The majority of end users have bigger screens, allowing for the display of more rows. ■ You want to fit this task flow into a smaller area of a page. **Note:** If you set pageSize to a value that is too big for the size of the screen, the end user will experience difficulty coordinating the task flow scroll bar with the application scroll bar.
readOnly	Specifies whether to disable and hide all content management operations: ■ ${true}: Disable content management. ■ ${false} (default): Expose content management to users.
resourceId	The currently focused resource. This value can be a folder ID or a document ID. The resourceId value is checked for coherence with the connectionName and startFolderPath values, and influences their default values when they are not explicitly specified. For example, if resourceId alone is specified, the connectionName value will be inherited from it and the startFolderPath will be either the resource itself for a folder or the parent folder for a file.
showFolders	Specifies whether the navigation tree shows documents and folders, or documents only: ■ ${true} (default): Show folders and documents. ■ ${false}: Show documents and hide folders.

Table 29–11 (Cont.) Folder Viewer Task Flow Parameters

Parameter	Description
`startFolderPath`	The name of the folder to use as the root folder in the current task flow instance. This is a content-scoping parameter that assists with determining the source and range of content to display in the task flow instance. There is no need to set this value for task flows that display the content of the current portal's default root folder. But it is useful, for example, when you want the start folder to be other than a portal's default root folder and when you want to display content from another portal. Example: ■ `${'/PersonalSpaces/monty/Public'}` ■ `${'/WebCenterB5/Proj_X/Specs'}` You can specify an EL expression to set this value. See Section G.9, "ELs Related to Documents." Default: The root folder of the content repository configured with the specified connection for the current portal.

29.7.7 Recent Documents Task Flow Parameters

The Recent Documents task flow displays a listing of the most recently created or modified files by the current user.

See Also:

- "Understanding the Recent Documents Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Recent Documents task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–12 describes the Recent Documents task flow parameters.

Table 29–12 Recent Documents Task Flow Parameters

Parameter	Description
`connectionName`	The name of the content repository connection. If no value is selected, the default connection specified by the application developer or administrator is used. For information about configuring content repository connections, see the "Registering Content Repositories" chapter in *Administering Oracle WebCenter Portal*. Default: The connection selected as default in the Create Content Repository Connection dialog box by the application developer, which can be changed by the administrator.

Table 29–12 (Cont.) Recent Documents Task Flow Parameters

Parameter	Description
`groupSpace`	(Used in WebCenter Portal only) The name of a portal that is the source of the recently created or modified documents listed in the task flow. Valid values are: ■ no value or `${null}` (default): Displays documents for the entire connected content repository. ■ Display name or ID of a specific portal: Displays documents in that portal. ■ `${'all'}`: Displays documents from any portal, excluding non-portal documents.
`lastModifiedAfter`	A filtering value to limit the display of task flow content to folders and files last modified after a specified date and time. If no value is entered, then content modified in the last three months is shown. The value uses the ISO 8601 format: `${'yyyy-mm-ddThh:mm:ss.sssTZD'}`[1] Example: `${'2011-03-17T18:24:36.000+01.00'}`
`lastModifiedBefore`	A filtering value to limit the display of task flow content to folders and files modified before a specified date and time. If no value is entered, then the last modification date is applied. The value uses the ISO 8601 format: `${'yyyy-mm-ddThh:mm:ss.sssTZD'}`[1] Example: `${'2011-03-17T18:24:36.000+01:00'}`
`lastModifier`	A filtering value to limit the display of task flow content to folders and files last modified by a particular user. Enter the user name as specified by the user login credentials. Only one user name may be entered. If no value is entered, then all modified documents are shown. Example: `${'monty'}`
`maxDocuments`	The maximum number of files to show. If no value or 0 is entered, then up to 10 of the most recently accessed documents are shown. Example: `${10}` Note that there is no single quote surrounding the value. Default: `${null}`
`mostRecentFirst`	Specifies the sort order of files in the task flow: ■ `${true}` (default): Most recent documents listed first. ■ `${false}`: Oldest documents listed first.

[1] "TZ" is the time zone indicator. If the time being described is in UTC (Coordinated Universal Time), then the time zone indicator is "Z". If the time is from any other time zone, then TZ describes the offset from UTC of the time zone. For example, if the time is in California in December (Pacific Standard Time, PST), then the TZ indicator would be "-08:00".

29.7.8 Document Viewer Task Flow Parameters

The Document Viewer task flow displays the contents of a folder or a preview of an individual file in the default template for its file type.

See Also:

- "Understanding the Document Viewer Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Document Viewer task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–13 describes the Document Viewer task flow parameters.

Table 29–13 Document Viewer Task Flow Parameters

Parameter	Description
`featuresOff`	A list of disabled features for the task flow. Use commas or spaces to separate items. Valid values are exposed in the JavaDoc: `checkin`, `checkout`, `clipboard`, `close`, `delete`, `download`, `dnd`, `editwiki`, `editoffice`, `newfolder`, `newwiki`, `rename`, `upload`, `multifile-upload`, `profile-upload`, `search`, `advancedSearch`, `workflow`, `properties`, `history`, `comments`, `likes`, `links`, `tags`, `recommendations`, `autovue`, `title`, `related-items`, `social`, `sidebars`, `ils`. Example: `${'search, advancedSearch, clipboard, dnd, rename, newfolder, upload, newwiki, checkin, checkout, editoffice, edithtml, delete, sidebars, history'}`
`initialSidebar`	Specifies the tabbed pane to have initial focus in the Document Viewer. Valid values are: ▪ `${'comments'}` (default). Displays the **Comments** pane (see the "Commenting on Items" section in *Using Oracle WebCenter Portal*). ▪ `${'tags'}`. Displays the **Tags** pane (see the "Managing Tags on Files" section in *Using Oracle WebCenter Portal*). ▪ `${'history'}`. Displays the **History** pane (see the "Viewing and Deleting File Version History" section in *Using Oracle WebCenter Portal*). ▪ `${'docInfo'}`. Displays the **Info** pane (see the "Working with Folder and File Properties" section in *Using Oracle WebCenter Portal*). ▪ `${'tags'}`. Displays the **Links** pane (see the "Managing Document Links" section in *Using Oracle WebCenter Portal*). ▪ `${'autovue'}`. When Oracle AutoVue is installed, displays an **AutoVue** pane showing the AutoVue markup for the current document in a table of hyperlinked markup names (see "Collaborating on Documents Using Oracle AutoVue" section in *Using Oracle WebCenter Portal*).
`readOnly`	Specifies whether to disable and hide all content management operations: ▪ `${true}`: Disable content management. ▪ `${false}` (default): Expose content management to users.
`resourceID`	The currently focused resource. This value can be a folder ID or a document ID.

29.7.9 Document Mini Properties Task Flow Parameters

The Document Mini Properties task flow displays the basic properties of a selected file in a read-only view. This task flow is available for all file types.

See Also:

- "Understanding the Document Mini Properties Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Document Mini Properties task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–14 describes the Document Mini Properties task flow parameters.

Table 29–14 Document Mini Properties Task Flow Parameters

Parameter	Description
`resourceID`	The ID of the document for which to display basic properties.

29.7.10 Document Properties Task Flow Parameters

The Document Properties task flow displays both Basic and Advanced properties of a selected file, along with an **Edit** button to modify property values. This choice is available for all file types.

See Also:

- "Understanding the Document Properties Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Document Properties task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–15 describes the Document Properties task flow parameters.

Table 29–15 Document Properties Task Flow Parameters

Parameter	Description
`resourceID`	The ID of the document for which to display basic and advanced properties.
`readOnly`	Specifies whether or not to allow end user to edit document properties: ■ `${true}`: Do not display **Edit** button in Basic and Advanced properties panes, thus disabling the ability for the end user to edit document properties. ■ `${false}` (default): Display **Edit** button in Basic and Advanced properties panes, allowing end users to edit document properties.

29.7.11 Rich Text Editor Task Flow Parameters

The Rich Text Editor task flow displays an HTML or wiki document in the Rich Text Editor.

See Also:

- "Using the Rich Text Editor (RTE)" in *Using Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Rich Text Editor task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–18 describes the Rich Text Editor task flow parameters.

Table 29–16 Rich Text Editor Task Flow Parameters

Parameter	Description
`destinationID`	The currently focused resource. This value can be a folder ID to create a new document in that folder, or a document ID (as shown in the properties pane of the Document Viewer task flow) to edit an existing document.
`featuresOff`	A list of disabled features for the task flow. Use commas or spaces to separate items. Valid values are exposed in the JavaDoc: `checkin`, `checkout`, `clipboard`, `close`, `delete`, `download`, `dnd`, `editwiki`, `editoffice`, `newfolder`, `newwiki`, `rename`, `upload`, `multifile-upload`, `profile-upload`, `search`, `advancedSearch`, `workflow`, `properties`, `history`, `comments`, `likes`, `links`, `tags`, `recommendations`, `autovue`, `title`, `related-items`, `social`, `sidebars`, `ils`. Example: `${'search, advancedSearch, clipboard, dnd, rename, newfolder, upload, newwiki, checkin, checkout, editoffice, edithtml, delete, sidebars, history'}`
`initialSidebar`	Specifies a pane to display in the sidebar of the Document Viewer. Valid values are: ■ `${'comments'}` (default). Displays a **Comments** pane (see the "Commenting on Items" section in *Using Oracle WebCenter Portal*) ■ `${'tags'}`. Displays a **Tags** pane (see the "Managing Tags on Files" section in *Using Oracle WebCenter Portal*) ■ `${'history'}`. Displays a **History** pane (see the "Viewing and Deleting File Version History" section in *Using Oracle WebCenter Portal*) ■ `${'docInfo'}`. Displays a **Properties** pane (see the "Working with Folder and File Properties" section in *Using Oracle WebCenter Portal*) ■ `${'links'}`. Displays a **Links** pane (see the "Managing Document Links" section in *Using Oracle WebCenter Portal*) ■ `${'recommendations'}`. Displays a **Recommendations** pane (see the "Viewing Document Recommendations" section in *Using Oracle WebCenter Portal*) **Note:** Values are case-sensitive.

29.7.12 Document Upload Task Flow Parameters

The Document Upload task flow displays the Upload dialog to allow users to upload new documents to the page.

See Also:

- "Uploading Files" in *Using Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Document Upload task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–18 describes the Document Upload task flow parameters.

Table 29–17 Document Upload Task Flow Parameters

Parameter	Description
`destinationID`	The currently focused resource. This value specifies a folder ID to upload a document into that folder.
`destinationSelectionEnabled`	Specifies whether or not the destination folder can be changed: - `${true}`: Display destination folder as an input text box along with a **Browse** button. - `${false}` (default): Display destination folder as read only text.
`featuresOff`	A list of disabled features for the task flow. Use commas or spaces to separate items. Valid values are exposed in the JavaDoc: `checkin`, `checkout`, `clipboard`, `close`, `delete`, `download`, `dnd`, `editwiki`, `editoffice`, `newfolder`, `newwiki`, `rename`, `upload`, `multifile-upload`, `profile-upload`, `search`, `advancedSearch`, `workflow`, `properties`, `history`, `comments`, `likes`, `links`, `tags`, `recommendations`, `autovue`, `title`, `related-items`, `social`, `sidebars`, `ils`. Example: `${'search, advancedSearch, clipboard, dnd, rename, newfolder, upload, newwiki, checkin, checkout, editoffice, edithtml, delete, sidebars, history'}`

29.7.13 Document Version History Task Flow Parameters

The Document Version History task flow displays a list of versions of a selected file in a read-only view. This task flow is available for all file types.

See Also:

- "Understanding the Document Version History Task Flow" in *Building Portals with Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the Document Version History task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–18 describes the Document Version History task flow parameters.

Table 29–18 Version History Task Flow Parameters

Parameter	Description
`horizontalLayout`	Specifies the layout orientation for the version history information: - `${vertical}` (default): Vertical orientation (see Figure 29–13). - `${horizontal}`: Horizontal orientation (see Figure 29–13).
`resourceID`	The ID of the document for which to display version history.

Table 29–18 (Cont.) Version History Task Flow Parameters

Parameter	Description
`readOnly`	Specifies whether to disable and hide all content management operations: - `${true}`: Disable content management. `${false}` (default): Expose content management to users.

29.7.14 AutoVue Task Flow Parameters

The AutoVue task flow integrates the Oracle AutoVue functionality to allow users to review and collaborate on a document.

See Also:

- "Collaborating on Documents Using Oracle AutoVue" in *Using Oracle WebCenter Portal*
- Section 29.5, "Adding a Content Task Flow to a Page"

Parameters that are unique to the AutoVue task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 29–19 describes the AutoVue task flow parameters.

Table 29–19 AutoVue Task Flow Parameters

Parameter	Description
`resourceId`	The ID of the document to display in the AutoVue task flow.

30 Integrating Wikis and Blogs

This chapter describes how to integrate the wiki and blog functionality into your WebCenter Portal Framework applications to enable your application end users to collaborate and share content and ideas.

This chapter includes the following topics:

- Section 30.1, "Introduction to Wikis and Blogs"
- Section 30.2, "Requirements for Wikis and Blogs"
- Section 30.3, "Integrating Wikis"
- Section 30.4, "Integrating Blogs"

30.1 Introduction to Wikis and Blogs

A wiki is a collection of useful content or information that users can browse, update, and remove, sometimes without the need for registration. This ease of interaction and the variety of operations make wiki an effective tool for collaborative authoring, where multiple people create written content together.

Blogs are typically personal records of an individual user's experience and opinions. They provide a useful tool for discussing and/or evangelizing any type of idea, strategy, or point of view. Blogs may be projected out to a select group of people or to a wider audience. Typically, each blog contains various blog posts, with the most recently added blog post displayed at the top. Blogs invite readers to comment on the overall concepts.

You can integrate wikis and blogs into your Portal Framework applications through the Documents tool. There is no limitation on the number of wiki pages or blogs that you can expose in an application.

30.2 Requirements for Wikis and Blogs

To support the wiki and blog functionality, the Documents tool relies on WebCenter Content. For wiki and blog functionality to be available in your Portal Framework applications, the following prerequisites must be met:

- WebCenter Content 11*g* must be installed and configured as the default content repository for WebCenter Portal. Wiki and blog functionality is not available with WebCenter Content 10*g*. For information about installing and configuring WebCenter Content 11*g*, see the "Managing Content Repositories" chapter in *Administering Oracle WebCenter Portal*.

- A connection to WebCenter Content 11*g* must be established. For information, see Section 25.2.1, "Creating a Content Repository Connection Based on the Oracle Content Server Adapter."
- Complete the steps covered in Section 4.2, "Preparing Your Framework Application for Tools and Services," as needed. For example, you can use the Activity Stream feature to track activities such as when a blog or wiki document is created or updated. End users can add comments on wiki documents and blog posts to express their views. To enable the Comments and Activities Stream features, you must register a connection to a database that has the `WebCenter` schema installed.

After completing these requirements, you can use the Documents tool to add wikis and blogs to your Portal Framework applications:

- To add wikis to your application, you will need to add a documents task flow that provides the **Add Wiki Document** action (such as the Document Explorer task flow). See Section 30.3, "Integrating Wikis."
- To add blogs to your application, you use the blog tasks flows. See Section 30.4, "Integrating Blogs."

If you want to convert wikis and blogs in your Portal Framework applications into PDF, your application administrator must configure the WebCenter Conversion component, as described in the "Enabling the Conversion of Wikis and Blogs into PDFs" section in *Administering Oracle WebCenter Portal*.

30.3 Integrating Wikis

This following sections provide the information you need to add wiki documents to your Portal Framework applications:

- Section 30.3.1, "About Integrating Wikis"
- Section 30.3.2, "Adding the Document Explorer Task Flow to Provide the Wiki Functionality"
- Section 30.3.3, "Modifying Document Explorer Task Flow Parameters"
- Section 30.3.4, "What Happens at Runtime"
- Section 30.3.5, "Displaying Wiki Page Links Within Content Presenter"

30.3.1 About Integrating Wikis

To provide your end users with the ability to add and manage wiki documents at runtime, you need to add the Document Explorer task flow to your Portal Framework application. When you add this task flow at design time, it is built into the application for end users, and enables them to work with wiki documents at runtime.

The Document Explorer task flow has associated parameters. For information, see Section 29.7.2, "Document Explorer Task Flow Parameters."

30.3.2 Adding the Document Explorer Task Flow to Provide the Wiki Functionality

To prepare your Portal Framework application and add the Document Explorer task flow for enabling the wiki functionality:

1. Ensure that you have completed the requirements listed in Section 30.2, "Requirements for Wikis and Blogs."

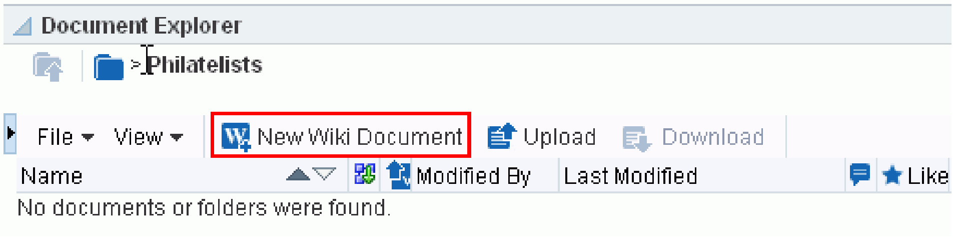
> **Note:** While setting up the connection, you must choose an authentication method. If you choose identity propagation, you must implement ADF security in your application and configure secure socket layer (SSL) on WebCenter Content.
>
> If you choose external application, you must specify the external application you want to use for authenticating users to WebCenter Content.
>
> For information, see Section 4.2.1.1, "Implementing Security for Tools and Services."

2. Create or open the JSF page on which you want to provide the wiki functionality (see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application").
3. Choose a method for adding the Document Explorer task flow to the page:
   - To add the Document Explorer task flow prepopulated with a selected folder or file, see Section 29.4, "Adding a Selected Folder or File to a Page."
   - To add the Document Explorer task flow standalone as an "empty" task flow that you can populate using the task flow menus and actions, see Section 29.5, "Adding a Content Task Flow to a Page."

   For information about the parameters that you can set for the Document Explorer task flow, see Section 29.7.2, "Document Explorer Task Flow Parameters."

   When you run the page, the Document Explorer task flow displays in your default browser, as shown in Figure 30–1. End users can create a wiki document by clicking **New Wiki Document**. For more information, see Section 30.3.4, "What Happens at Runtime."

Figure 30–1 Creating a New Wiki Document



No documents or folders were found.

30.3.3 Modifying Document Explorer Task Flow Parameters

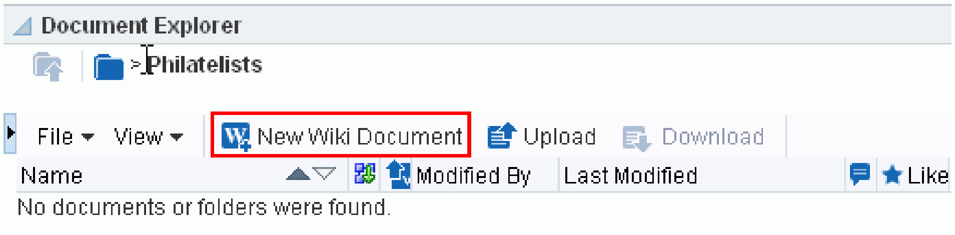
The way you modify parameters of a Document Explorer task flow is the same as any other documents task flow. For information, see Section 29.6, "Modifying Content Task Flow Parameters." For information about the specific parameters that you can modify, see Section 29.7.2, "Document Explorer Task Flow Parameters."

30.3.4 What Happens at Runtime

At runtime, authorized users can create wiki documents in a Portal Framework application in which the wiki functionality has been exposed. Users can also edit, download, rename, share, and subscribe to a wiki document and view its history and properties.

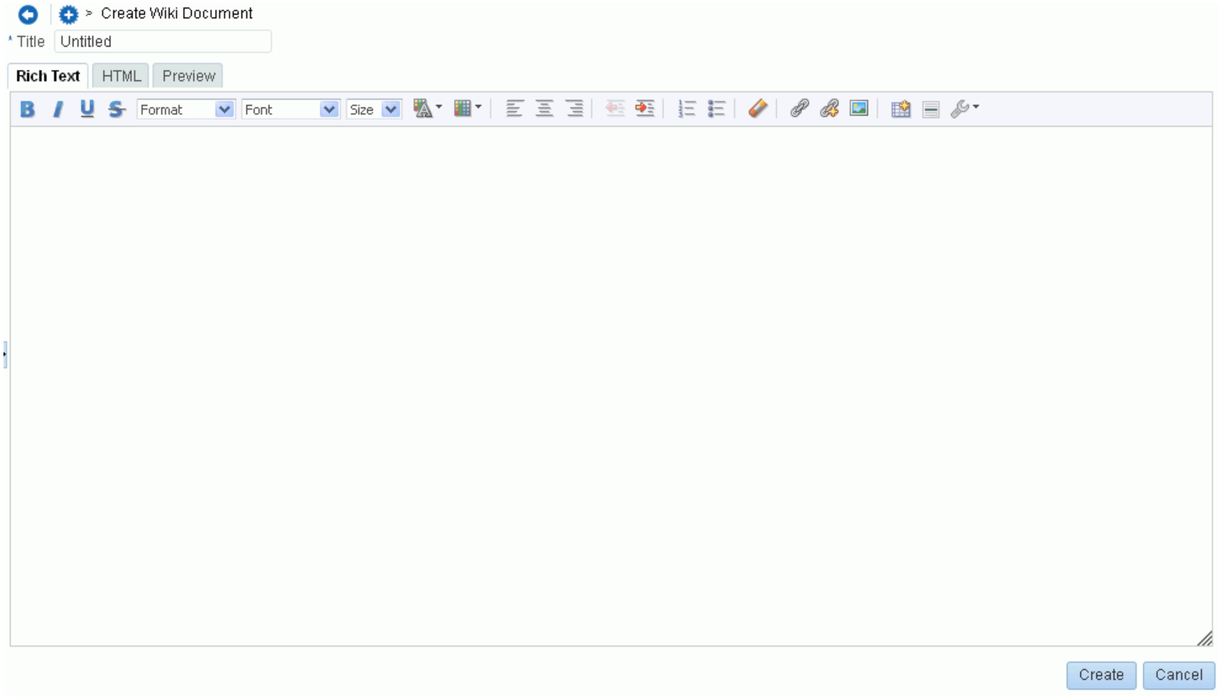
At runtime, the folder that you exposed through the Document Explorer task flow is shown as the root folder. End users can create a wiki document by clicking **New Wiki Document** (Figure 30–2), which opens the Rich Text Editor (RTE) (Figure 30–3), displaying a blank wiki document.

Figure 30–2 Creating a New Wiki Document



Users can add and edit wiki content using the Rich Text Editor (RTE), which is a fully-integrated HTML text editor (Figure 30–3).

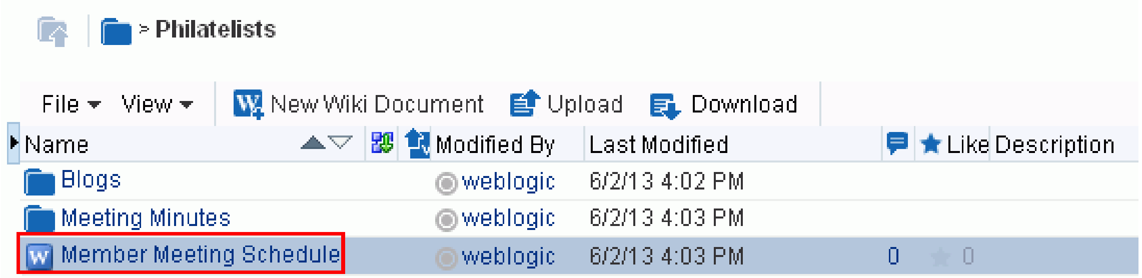
Figure 30–3 Rich Text Editor Displaying New Wiki Document



Note: By default, the **Wiki Markup** tab is hidden in the RTE. To show and hide the **Wiki Markup** tab, your system administrator can edit a configuration file, as described in the "Showing and Hiding the Wiki Markup Tab in the Rich Text Editor" section in *Administering Oracle WebCenter Portal*.

By default, all wiki documents are created directly under the root folder (Figure 30–4).

Figure 30–4 Wiki Document Created Using New Wiki Document Action



Name	Modified By	Last Modified		Like	Description
Blogs	weblogic	6/2/13 4:02 PM			
Meeting Minutes	weblogic	6/2/13 4:03 PM			
Member Meeting Schedule	weblogic	6/2/13 4:03 PM	0	0	

The runtime procedures for adding and managing wiki documents in a Portal Framework application are the same as those in WebCenter Portal. For generic information, refer to the "Working with Wikis" chapter in *Using Oracle WebCenter Portal*.

30.3.5 Displaying Wiki Page Links Within Content Presenter

At runtime, users can choose to display an existing wiki document using Content Presenter, as described in the "Adding a Selected Folder or File to a Page" section in *Building Portals with Oracle WebCenter Portal*.

When a wiki document is displayed using a Content Presenter display template, by default the links present in the wiki document render in the Document Viewer. You can configure your application to display link targets within Content Presenter.

To open the targets of links present in a wiki document within Content Presenter rather than the Document Viewer:

1. Open the `adf-config.xml` file. This file is located under `Descriptors/ADF META-INF` in the **Application Resources** section of the Application Navigator.

2. Update the `Namespace` entry as follows:

   ```
   xmlns:wpsC="http://xmlns.oracle.com/webcenter/framework/service"
   ```

3. Update the `ResourceActionHandler` entry as follows:

   ```
   <wpsC:adf-service-config
   xmlns="http://xmlns.oracle.com/webcenter/framework/service">
         <resource-handler
   class="oracle.webcenter.portalframework.sitestructure.handler.NavigationResourc
   eActionHandler"/>
   </wpsC:adf-service-config>
   ```

4. Save `adf-config.xml`.

30.4 Integrating Blogs

When you integrate the blogs functionality into your Portal Framework application, authorized end users can create and manage blog posts. To enable the blog functionality, you need to add the blog task flows.

This following sections provide the information you need to add blogs to a Portal Framework application:

- Section 30.4.1, "Understanding the Blog Task Flows"
- Section 30.4.2, "Adding a Blog to a Page"

- Section 30.4.5, "Blog Task Flow Parameters"
- Section 30.4.4, "Modifying Blog Task Flow Parameters"
- Section 30.4.3, "What Happens at Runtime"

30.4.1 Understanding the Blog Task Flows

If you want to include a blog on a page, along with other page components, you can use the blog task flows to add one or more elements of a blog to a page. Table 30–1 lists and describes the blog task flows:

Table 30–1 Blog Task Flows

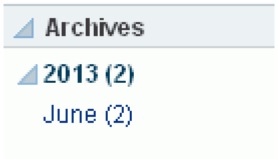
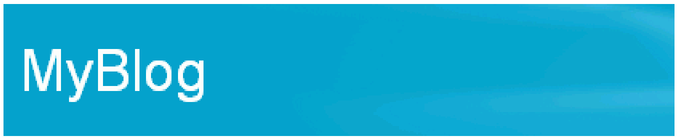
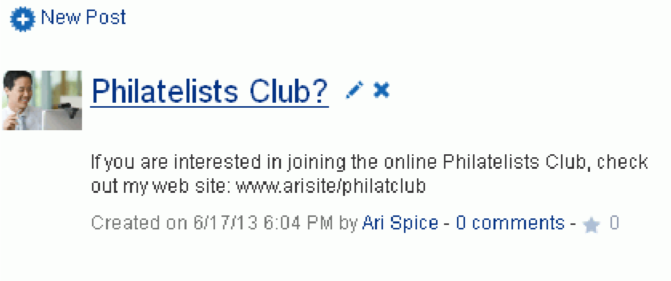
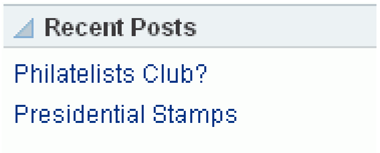
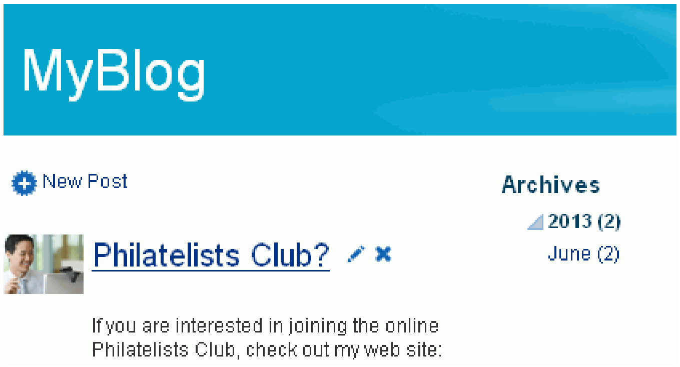
Blog Task Flow	Description	Example as Exposed on a Page
Blog Archives	Displays a composite list of blogs based on dates.	 Archives 2013 (2) June (2)
Blog Banner	Displays a banner for the blog.	 MyBlog
Blog Digest	Displays a blog or blog post.	 New Post Philatelists Club? If you are interested in joining the online Philatelists Club, check out my web site: www.arisite/philatclub Created on 6/17/13 6:04 PM by Ari Spice - 0 comments - ☆ 0
Recent Blog Posts	Displays a list of most recent blog posts.	 Recent Posts Philatelists Club? Presidential Stamps

Table 30–1 (Cont.) Blog Task Flows

Blog Task Flow	Description	Example as Exposed on a Page
Blogs	Displays a blog or blog post with a default design.	 MyBlog New Post Archives 2013 (2) June (2) Philatelists Club? If you are interested in joining the online Philatelists Club, check out my web site:

30.4.2 Adding a Blog to a Page

To add a blog to a page in your Portal Framework application:

1. Ensure that you have completed the requirements listed in Section 30.2, "Requirements for Wikis and Blogs."

   > **Note:** While setting up the connection, you must choose an authentication method. If you choose identity propagation, you must implement ADF security in your application and configure secure socket layer (SSL) on WebCenter Content.
   >
   > If you choose external application, you must specify the external application you want to use for authenticating users to WebCenter Content.
   >
   > For information, see Chapter 4.2.1.1, "Implementing Security for Tools and Services."

2. Create or open a page in your application where you want to expose the blog functionality (see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application").
3. Before you add a blog task flow to your page, consider whether or not you want to allow your end users to edit the task flow. To enable runtime editing of the page, see Chapter 18, "Enabling Runtime Editing of Pages Using Composer."
4. Add a blog to the page using an existing folder to create a default blog page, or by creating a custom blog by selecting component blog task flows:
   - Section 30.4.2.1, "Adding a Blog Using an Existing Folder"
   - Section 30.4.2.2, "Adding a Custom Blog to a Page Using the Blog Task Flows"

30.4.2.1 Adding a Blog Using an Existing Folder

If you have an existing folder, perhaps already containing blog posts, you can establish that folder as the source of blog posts for a blog, instead of creating a new "empty" blog (see Section 30.4.2.2, "Adding a Custom Blog to a Page Using the Blog Task Flows"). At runtime, the blog displays the blog posts in that folder.

To expose a selected folder and its contents as a blog on a page:

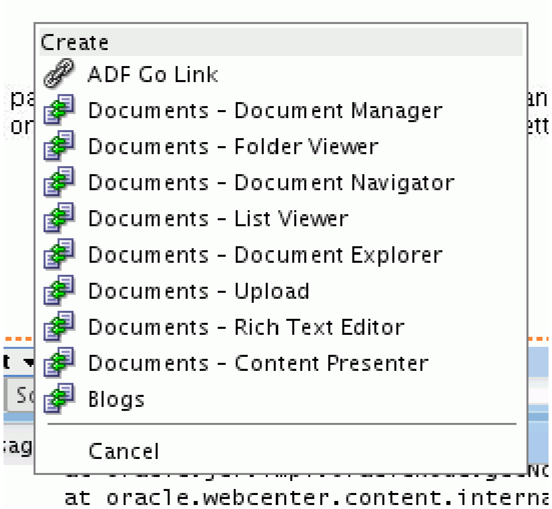
1. In the **Application Resources** panel, navigate to **Connections**, then **Content Repository**.

2. Locate the name of your WebCenter Content connection, then expand it to navigate to the folder that you want to establish as the blog folder.

   > **Tip:** You can expose any folder as a blog. To better organize your blogs, you may consider storing each blog folder in a parent folder; for example, a folder named **Blogs**. You can create a folder using either a documents task flow or the WebCenter Content console.
   >
   > Files stored in the blog folder are identified as blog posts in their metadata `Type` field, which is set to `Blog Post`. Uploading an HTML file into a blog folder does not expose it as a blog post, unless you set its `Type` to `Blog Post`.

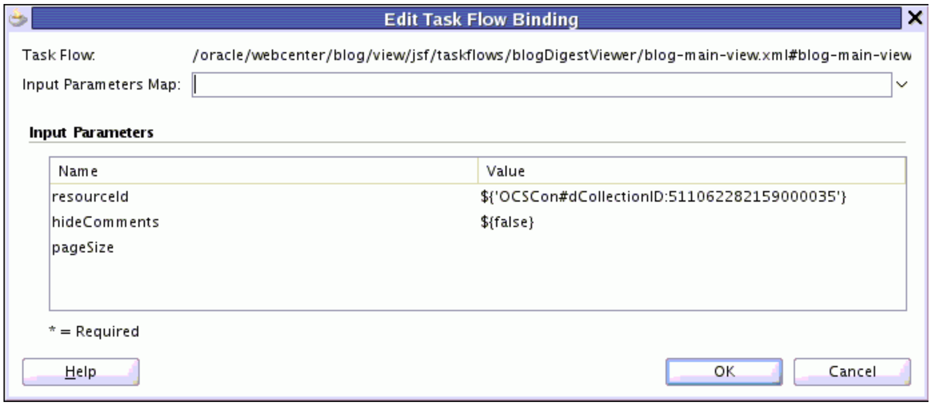
3. Drag the folder onto the page, and release the mouse button to display a menu listing all available task flows (Figure 30–5).

Figure 30–5 Menu of Available Task Flows for Selected Folder


Create
ADF Go Link
Documents - Document Manager
Documents - Folder Viewer
Documents - Document Navigator
Documents - List Viewer
Documents - Document Explorer
Documents - Upload
Documents - Rich Text Editor
Documents - Content Presenter
Blogs
Cancel
at oracle.webcenter.content.interna

4. From the menu, choose **Blogs** to open the Edit Task Flow Binding dialog (Figure 30–6).

Figure 30–6 Specifying Parameters for Blogs Task Flow



Task Flow: /oracle/webcenter/blog/view/jsf/taskflows/blogDigestViewer/blog-main-view.xml#blog-main-view

Input Parameters Map:

Input Parameters

Name	Value
resourceId	${'OCSCon#dCollectionID:511062282159000035'}
hideComments	${false}
pageSize	

* = Required

5. In the Edit Task Flow Binding dialog, the `resourceId` value is automatically populated with the resource ID of the selected folder. Click **OK** to accept the default task flow parameters, or modify the parameters as desired. For more information, see Section 30.4.5.5, "Blogs Task Flow Parameters."

6. Save your page and the page definition file, then run your page to your browser by right-clicking the page (not the page definition file) and choosing **Run**.

The new blog is given the same name as the selected folder. Existing files under the folder become blog posts if the `Type` property of the file is set to `Blog Post`. As posts are added to the blog at runtime, the blog posts are stored in this folder. See Section 30.4.3, "What Happens at Runtime."

30.4.2.2 Adding a Custom Blog to a Page Using the Blog Task Flows

You may want to add an "empty" blog task flow onto your page, either as one component on a page, or as the entire page. For example, in cases where you do not have a content repository connection, or want to use an EL expression as a parameter to dynamically bind to a target item, you may want to use this method instead of the method described in Section 30.4.2.1, "Adding a Blog Using an Existing Folder." Additionally, the individual blog task flows enable you to customize the appearance of a blog.

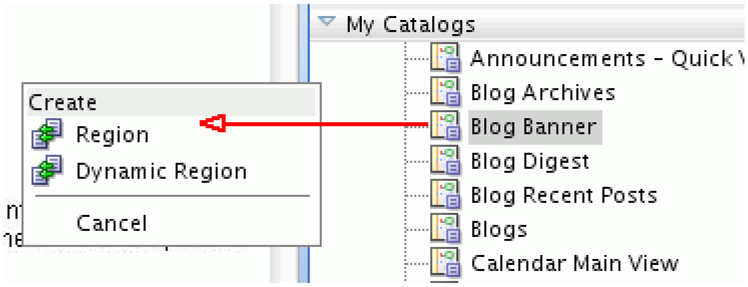
To add a customized blog task flow to a page:

1. In the **Resource Palette**, expand the **WebCenter Portal - Services Catalog**. Under **Task Flows**, select the blog task flow that you want to add, drag it onto your page, and release the mouse button.

   For information about each of the five blog task flows, see Section 30.4.1, "Understanding the Blog Task Flows."

2. From the menu that displays, choose **Region** (Figure 30–7).

Figure 30–7 Adding Blog Task Flow Using Resource Palette



3. In the Edit Task Flow Binding dialog, click **OK** to accept the default task flow parameters, or modify the parameters as desired. For information, see Section 30.4.5, "Blog Task Flow Parameters."

4. Repeat these steps for each blog task flow that you want to comprise your blog.

5. Save your page and the page definition file, then run your page to your browser by right-clicking the page (not the page definition file) and choosing **Run**.

Internally, the new blog is given the same name as the folder specified by the `resourceID`; however, the name visible on the page is the value you specify in the `Title` parameter of the Blog Banner task flow. Existing files under the folder become blog posts if the `Type` property of the file is set to `Blog Posts`. As posts are added to the blog at runtime, the blog posts are stored in this folder. See Section 30.4.3, "What Happens at Runtime."

30.4.3 What Happens at Runtime

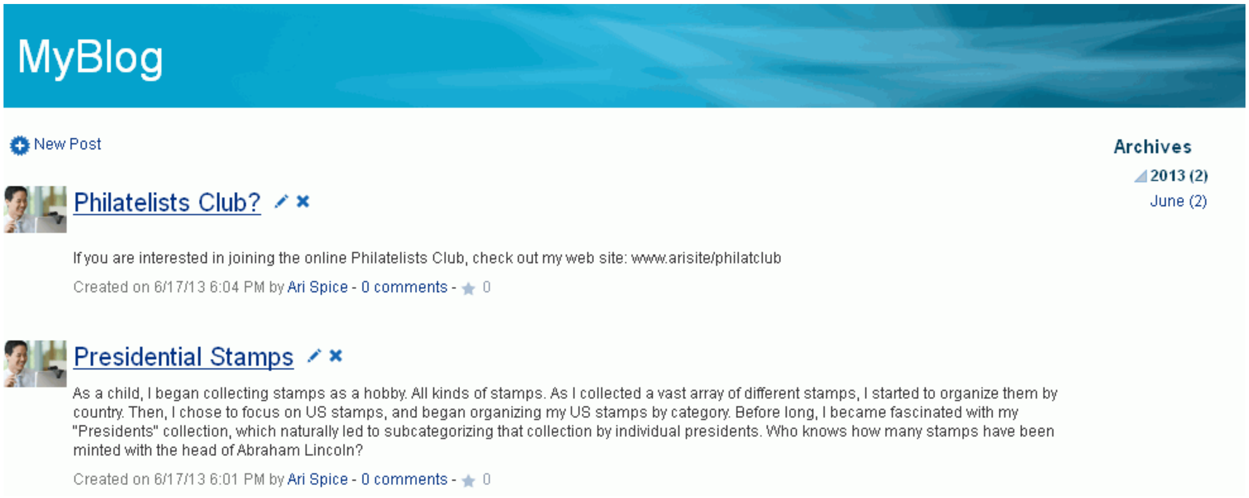
At runtime, the folder specified by the `resourceID` parameter for the blog task flow is exposed as a blog on the page:

- If you created a blog as described in Section 30.4.2.1, "Adding a Blog Using an Existing Folder," then the name of the folder that you exposed as a blog is displayed as the name of your blog in the blog banner.
- If you created a blog as described in Section 30.4.2.2, "Adding a Custom Blog to a Page Using the Blog Task Flows," then the name of the folder that you specified in the `resourceID` parameter of the blog task flow is the name of your blog internally; however, the name visible on the page is the value that you specified in the `Title` parameter of the Blog Banner task flow.

Authorized users can create blog posts, and the posts are displayed on the blog page. Users can perform tasks such as edit, download, comment upon blog posts, and so on.

On the default blog page (Figure 30–8), and in the Blog Archives task flow, the **Archives** section provides links to blog posts by year and by month. Clicking a month displays all blog posts created during that month.

Figure 30–8 A Default Blog Page



Philatelists Club?

If you are interested in joining the online Philatelists Club, check out my web site: www.arisite/philatclub

Created on 6/17/13 6:04 PM by Ari Spice - 0 comments - 0

Presidential Stamps

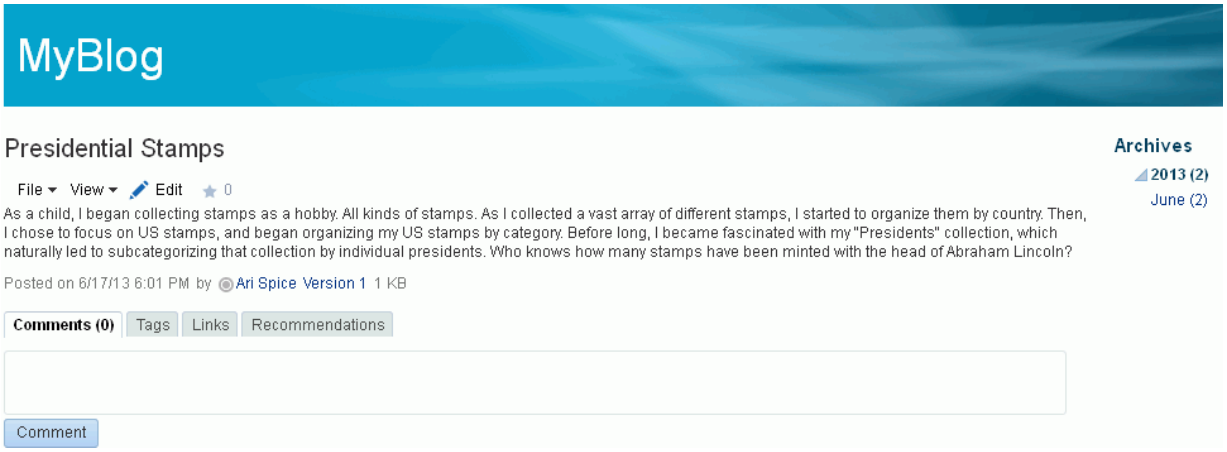
As a child, I began collecting stamps as a hobby. All kinds of stamps. As I collected a vast array of different stamps, I started to organize them by country. Then, I chose to focus on US stamps, and began organizing my US stamps by category. Before long, I became fascinated with my "Presidents" collection, which naturally led to subcategorizing that collection by individual presidents. Who knows how many stamps have been minted with the head of Abraham Lincoln?

Created on 6/17/13 6:01 PM by Ari Spice - 0 comments - 0

A blog displays various details for each blog post. These include the blog post title, the blog post content, date of creation or modification, name of the user who created or last modified the post, and the number of comments on the blog post. Authorized users can click the **Edit Post** icon to edit a post, and click the **Post comments** link to enter comments on a blog post.

Clicking a blog post title opens the blog post to occupy the entire the blog page (Figure 30–9), providing controls to manage the blog post.

Figure 30–9 A Blog Post



Presidential Stamps

As a child, I began collecting stamps as a hobby. All kinds of stamps. As I collected a vast array of different stamps, I started to organize them by country. Then, I chose to focus on US stamps, and began organizing my US stamps by category. Before long, I became fascinated with my "Presidents" collection, which naturally led to subcategorizing that collection by individual presidents. Who knows how many stamps have been minted with the head of Abraham Lincoln?

Posted on 6/17/13 6:01 PM by Ari Spice Version 1 1 KB

When public users (not logged in) view a blog post in a Portal Framework application, they will not see the profile photos associated with each blog post because the `anonymous-role` that is assigned to public users is not granted permission to view profiles by default (see Table 74–2, " Automated Security Grants for Portal Framework Applications"). Your system administrator can use the `grantPermission` WLST command (see the "grantPermission" section in the *WebLogic Scripting Tool Command Reference*) to allow public users to view profile photos for blog posters. For example:

```
grantPermission(appStripe=<app-name>,
  principalClass="oracle.security.jps.internal.core.principals.JpsAnonymousRoleI
mpl",
  principalName="anonymous-role",
permClass="oracle.webcenter.peopleconnections.profile.security.ProfilePermission",
  permTarget="/oracle/webcenter/peopleconnections/profile/s8bba98ff_4cbb_40b8_
beee_296c916a23ed/.*",
  permActions="view")
```

The procedures for managing blogs at runtime in a Portal Framework application are the same as those for managing blogs in WebCenter Portal. For information, see the "Working with Blogs" chapter in *Using Oracle WebCenter Portal*.

30.4.4 Modifying Blog Task Flow Parameters

The procedure for modifying the parameters of a Blogs task flow is the same as any other documents task flow. For information, see Section 29.6, "Modifying Content Task Flow Parameters." For information about the specific parameters that you can modify, see Section 30.4.5, "Blog Task Flow Parameters."

30.4.5 Blog Task Flow Parameters

Each blog task flow has its own set of parameters. You can configure these values when you add the task flow to your page, or modify the values at any time.

The following sections describe the parameters for the blog task flows:

- Section 30.4.5.1, "Blog Archives Task Flow Parameters"
- Section 30.4.5.2, "Blog Banner Task Flow Parameters"
- Section 30.4.5.3, "Blog Digest Task Flow Parameters"
- Section 30.4.5.4, "Blog Recent Posts Task Flow Parameters"
- Section 30.4.5.5, "Blogs Task Flow Parameters"

30.4.5.1 Blog Archives Task Flow Parameters

The Blog Archives task flow displays a composite list of blogs based on dates.

> **See Also:** Section 30.4.1, "Understanding the Blog Task Flows"

Parameters that are unique to the Blog Archives task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 30–2 describes the Blog Archives task flow parameters.

Table 30–2 Blog Archives Task Flow Parameters

Parameter	Description
`resourceId`	The resource ID of the blog folder (see Figure 30–6), which can be specified in the following formats: ■ *`connection_name/path_to_folder`* where *`connection_name`* is the name of the WebCenter Content connection, and *`path_to_folder`* is the path to the folder on WebCenter Content that you want to expose as a blog. ■ *`connection_name`*`#dCollectionID:`*`dCollectionId`* where *`connection_name`* is the name of the WebCenter Content connection, and *`dCollectionId`* is the collection ID of the folder on WebCenter Content that you want to expose as a blog.

30.4.5.2 Blog Banner Task Flow Parameters

The Blog Banner task flow task flow displays a banner for the blog.

> **See Also:** Section 30.4.1, "Understanding the Blog Task Flows"

Parameters that are unique to the Blog Banner task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 30–3 describes the Blog Banner task flow parameters.

Table 30–3 Blog Banner Task Flow Parameters

Parameter	Description
`resourceId`	The resource ID of the blog folder (see Figure 30–6), which can be specified in the following formats: ■ *`connection_name/path_to_folder`* where *`connection_name`* is the name of the WebCenter Content connection, and *`path_to_folder`* is the path to the folder on WebCenter Content that you want to expose as a blog. ■ *`connection_name`*#`dCollectionID`:*`dCollectionId`* where *`connection_name`* is the name of the WebCenter Content connection, and *`dCollectionId`* is the collection ID of the folder on WebCenter Content that you want to expose as a blog.
`imageURL`	(Optional) The background image to be used in the blog banner. When not specified, the background image will default to an image provided by the current skin.
`title`	(Optional) The title to be used for the blog banner. Default: The blog folder name.

30.4.5.3 Blog Digest Task Flow Parameters

The Blog Digest task flow displays a blog or blog post.

> **See Also:** Section 30.4.1, "Understanding the Blog Task Flows"

Parameters that are unique to the Blog Digest task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 30–4 describes the Blog Digest task flow parameters.

Table 30–4 Blog Digest Task Flow Parameters

Parameter	Description
`resourceId`	The target blog resource to display. This can be either a folder ID, in which case the blog listing for this folder will display, or a document ID, in which case the blog post will display. A folder can be specified in the following formats: ■ *`connection_name/path_to_folder`* where *`connection_name`* is the name of the WebCenter Content connection, and *`path_to_folder`* is the path to the folder on WebCenter Content that you want to expose as a blog. ■ *`connection_name`*#`dCollectionID`:*`dCollectionId`* where *`connection_name`* is the name of the WebCenter Content connection, and *`dCollectionId`* is the collection ID of the folder on WebCenter Content that you want to expose as a blog. **Note**: To allow users to add new blog posts (by clicking **New Post** in the task flow), the specified folder must have a security group assigned in WebCenter Content.
`year`	A four-digit number specifying the target year used to filter blog entries. Example: `2012`
`month`	A number from 1 to 12 specifying the target month used to filter blog entries. For this parameter to take effect, the Filter Year parameter must also be specified. Example: `10` (October)
`hideComments`	Specifies whether the Comments feature is exposed: ■ Selected: Hide the Comments link and pane. ■ Deselected (default): Show the Comments link and pane.
`pageSize`	The number of blog posts displayed in the Blog Digest Viewer before the Next and Previous icons are enabled. Default: `10`

30.4.5.4 Blog Recent Posts Task Flow Parameters

The Blog Recent Posts task flow displays a list of most recent blog posts.

> **See Also:** Section 30.4.1, "Understanding the Blog Task Flows"

Parameters that are unique to the Blog Recent Posts task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 30–5 describes the Blog Recent Posts task flow parameters.

Table 30–5 Blog Recent Posts Task Flow Parameters

Parameter	Description
`resourceId`	The resource ID of the blog folder (see Figure 30–6), which can be specified in the following formats: - *`connection_name/path_to_folder`* where *`connection_name`* is the name of the WebCenter Content connection, and *`path_to_folder`* is the path to the folder on WebCenter Content that you want to expose as a blog. - *`connection_name`*`#dCollectionID:`*`dCollectionId`* where *`connection_name`* is the name of the WebCenter Content connection, and *`dCollectionId`* is the collection ID of the folder on WebCenter Content that you want to expose as a blog.
`recentPostListSize`	The number of recent posts to display. Default: `10`

30.4.5.5 Blogs Task Flow Parameters

The Blogs task flow displays a blog or blog post with a default design.

See Also: Section 30.4.1, "Understanding the Blog Task Flows"

Parameters that are unique to the Blogs task flow are shown in the Edit Task Flow Binding dialog box when you add the task flow to a page. Table 30–6 describes the Blogs task flow parameters.

Table 30–6 Blogs Task Flow Parameters

Parameter	Description
`resourceId`	The target blog resource to display. This can be either a folder ID, in which case the blog listing for this folder will display, or a document ID, in which case the blog post will display. A folder can be specified in the following formats: - *`connection_name/path_to_folder`* where *`connection_name`* is the name of the WebCenter Content connection, and *`path_to_folder`* is the path to the folder on WebCenter Content that you want to expose as a blog. - *`connection_name`*`#dCollectionID:`*`dCollectionId`* where *`connection_name`* is the name of the WebCenter Content connection, and *`dCollectionId`* is the collection ID of the folder on WebCenter Content that you want to expose as a blog. **Note**: To allow users to add new blog posts (by clicking **New Post** in the task flow), the specified folder must have a security group assigned in WebCenter Content.
`hideComments`	Specifies whether the Comments feature is exposed: - Selected: Hide the Comments link and pane. - Deselected (default): Show the Comments link and pane.
`pageSize`	The number of blog posts displayed in the Blogs task flow before the Next and Previous icons are enabled. Default: `10`

31

Content Management REST API

This chapter supplements the OASIS CMIS specification, and provides details on the specific implementation of the Content Management REST Service.

The OASIS CMIS (Content Management Interoperability Services) Technical Committee works to standardize a Web services interface specification that will enable greater interoperability of Enterprise Content Management (ECM) systems. For more information, see the OASIS CMIS site:

`http://www.oasis-open.org/committees/cmis/`

Before continuing, all users should review the OASIS CMIS specification. This chapter references the Content Management Interoperability Services (CMIS) Version 1.0, which can be viewed at the following URL:

`http://docs.oasis-open.org/cmis/CMIS/v1.0/cmis-spec-v1.0.html`.

The Content Management REST Service provides a server that uses the CMIS RESTful AtomPub server binding to provide access to Oracle Content Server repositories configured in your application.

The specification includes the domain model and two server bindings. As mentioned above, only the RESTful AtomPub binding is currently implemented by the Content Management REST Service. Users should be familiar with Atom and AtomPub, which are the default formats for responses.

> **Note:** CMIS provides a lowest common denominator for a wide range of different content systems; it is not aligned directly with Oracle WebCenter Content functionality. Refer to the Content Management REST Service service document to identify available functionality.

This chapter includes the following sections:

- Section 31.1, "CMIS Domain Model"
- Section 31.2, "CMIS Part II: RESTful AtomPub Binding"
- Section 31.3, "Content Management REST Service Best Practices and Examples"

31.1 CMIS Domain Model

Section 2: Domain Model in the CMIS specification defines a domain model that can be used by applications to work with one or more Content Management repositories.

- Section 31.1.1, "Data Model"

- Section 31.1.2, "Services"

31.1.1 Data Model

The Content Management REST Service service document consists of AtomPub workspaces. Each workspace maps to a content connection (only Oracle WebCenter Content repositories are supported by the Content Management REST Service). For details on the service document, see the next section, Section 31.2, "CMIS Part II: RESTful AtomPub Binding".

31.1.1.1 Repository

For this release, some of the optional capabilities listed in section 2.1.1 have not been implemented. Versioning, ACL, Policies, Relationships, Change Log, Folder Descendants/Tree, and Renditions will be considered for future releases.

Specifically, the Content Management REST Service implementation has the following optional capabilities:

```
capabilityGetDescendants = true
capabilityGetFolderTree = false
capabilityContentStreamUpdatability = anytime
capabilityChanges = none
capabilityRenditions = none
capabilityMultifiling = false
capabilityUnfiling = false
capabilityVersionSpecificFiling = false
capabilityPWCUpdateable = false
capabilityPWCSearchable = false
capabilityAllVersionsSearchable = false
capabilityJoin = none
capabilityACL = none
capabilityQuery = none, metadataonly, or both combined
```

31.1.1.2 Object

The Content Management REST Service supports document and folder objects. In CMIS the `cmis:baseTypeId` for a Node will be `cmis:folder` or `cmis:document`. Also, the `cmis:baseId` for a Type will be `cmis:folder` or `cmis:document`.

31.1.1.3 Object-Type

A CMIS Object-Type contains fields mapped from the Oracle WebCenter Content: WebCenter Content metadata field definitions and Oracle WebCenter Content's Site Studio region definitions.

The mapping from Oracle WebCenter Content metadata fields to CMIS property definitions is as follows:

Table 31–1 WebCenter Content Metadata Mappings

Oracle WebCenter Content Metadata	CMIS Property Definition
TEXT metadata field with option list configured with select list validated and YesNoView or TrueFalseView view	cmis:propertyBoolean
All other TEXT metadata fields	cmis:propertyString
LONG TEXT metadata field	cmis:propertyString
MEMO metadata field	cmis:propertyString
INTEGER metadata field	cmis:propertyInteger

Table 31–1 (Cont.) WebCenter Content Metadata Mappings

Oracle WebCenter Content Metadata	CMIS Property Definition
DATE metadata field	cmis:propertyDateTime
DECIMAL metadata field	cmis:propertyDecimal

The mapping from Site Studio region definition fields to CMIS property definitions is as follows:

Table 31–2 Site Studio Region Definition Mappings

Site Studio Region Definition	CMIS Property Definition
Image Element Definition fields	cmis:propertyString
WYSIWYG Element Definition fields	cmis:propertyString
Plain Text Element Definition fields	cmis:propertyString
Static List Element Definition fields	cmis:propertyString

31.1.1.4 Document Object

Document Objects are the elementary information entities managed by the repository. As defined by the CMIS specification, Document Objects may be version-able, file-able, query-able, control-able and ACLControl-able. As stated earlier, the Content Management REST Service does not support versioning, multi-filing, Policies or ACL for this release.

If a Node is determined to be a Document (not a Folder) then any children it has will not be exposed through CMIS. In CMIS, each Document Object is associated with a single content stream, and for WebCenter CMIS REST, this stream is the Oracle WebCenter Content: WebCenter Content binary associated with the document.

31.1.1.5 Folder Object

The CMIS specification states that Folder Objects do not have a content-stream and are not version-able. If a Node is determined to be a Folder, then the Content Management REST Service exposes it in this manner. (In Oracle WebCenter Content, folders do not have a content stream and are not versionable).

31.1.1.6 Relationship Object

Section 2.1.6: Relationship Object in the CMIS specification is not applicable; the Content Management REST Service does not support Relationships for this release.

31.1.1.7 Policy Object

Section 2.1.7: Policy Object in the CMIS specification is not applicable; the Content Management REST Service does not support Policies for this release.

31.1.1.8 Access Control

Most of *Section 2.1.8: Access Control* in the CMIS specification is not applicable; the Content Management REST Service does not support ACL for this release. See the next section for details on allowable actions.

31.1.1.8.1 AllowableActions Mapping This section lists allowable actions defined for Objects. Because of how this release is implemented, some of these are hard-coded for all objects. Other allowable actions will be set based on the repository configuration.

- canGetObjectRelationships = false
- canCreateRelationship = false
- canGetDescendants = false
- canGetFolderTree = false
- canCheckOut = false (versioning)
- canCancelCheckOut = false (versioning)
- canCheckIn = false (versioning)
- canAddObjectToFolder = false (multi-filing)
- canRemoveObjectFromFolder = false (unfiling/multi-filing)
- canApplyPolicy = false
- canGetAppliedPolicies = false
- canRemovePolicy = false
- canCreatePolicy = false
- canApplyACL = false
- canGetACL = false
- canGetRenditions = false
- canDeleteTree = true
- canGetAllVersions = false (versioning)

31.1.1.9 Versioning

Section 2.1.9: Versioning in the CMIS specification is not applicable; the Content Management REST Service does not support versioning for this release.

31.1.1.10 Query

CMIS queries return a Result Set where each Entry object will contain only the properties that were specified in the query. The Content Management REST Service does not support JOINs in queries, so each result entry will represent properties from a single node. Common searches use a query like "SELECT * FROM …".

- The FROM clause specifies a content-type to be searched.
  - FROM cmis:document ==> any Oracle WebCenter Content document (for example, IDC:GlobalProfile)
  - FROM cmis:folder ==> any Oracle WebCenter Content folder (for example, IDC:Folder)
  - FROM typeQueryName ==> type's cmis queryName, as long as the type is queryable (for example, ora:t:IDC!;GlobalProfile)
- The cmis:document and cmis:folder types are always queryable. Other types will be queryable if they are searchable in the repository.
- The IN_FOLDER predicate is implemented as the folder ID specified, being the parent of the results.
- The IN_TREE predicate is implemented as the folder ID specified, being a parent in the folder structure of the results.
- The CONTAINS() predicate is a full-text query expression operator.

- Properties of cmis:document and cmis:folder will be queryable and orderable if their corresponding Oracle WebCenter Content system property is searchable and sortable. The system property mappings are:
  - cmis:createdBy ==> dDocAuthor
  - cmis:lastModifiedBy ==> dDocCreator
  - cmis:creationDate ==> dCreateDate
  - cmis:lastModificationDate ==> dLastModifiedDate (for 10g, folders map to dLastModifiedDate and documents map to dCreateDate)
  - cmis:name ==> dOriginalName (for a document) or dCollectionName (for a folder)
  - cmis:contentStreamFileName ==> dOriginalName
  - cmis:contentStreamLength ==> VaultFileSize
  - cmis:contentStreamMimeType ==> dFormat
  - cmis:objectId ==> dDocName
  - cmis:objectTypeId ==> Oracle WebCenter Content profile name or SiteStudio Region Definition name

    Note: cmis:objectTypeId is never orderable.

  - cmis:path ==> use IN_FOLDER or IN_TREE predicate

    Note: Some repositories may have capabilities that are not representable in a CMIS query, and some repositories may have restrictions which will limit the CMIS-query predicates (or combinations of predicates) that can be used in a query. Use the mappings above to translate repository capabilities and restrictions into corresponding considerations for CMIS queries.

- Nested properties are not queryable or orderable.
- The Content Management REST Service implementation reports as orderable any properties which Oracle WebCenter Content specifies as sortable. This list can include properties which Oracle WebCenter Content cannot actually sort on. To allow ordering on a field for which Oracle WebCenter Content reports a sort error, follow the steps below to make the specified Oracle WebCenter Content field sortable:
  1. Go to **Administration** and open **Admin Applets**.
  2. Open the Configuration Manager applet and click **Advanced Search Design.**
  3. Edit the field you wish to make orderable and select **Is sortable**.
  4. Save your changes and exit Administration.

The table that follows lists specific search considerations and recommendations. For example queries, see Section 31.3, "Content Management REST Service Best Practices and Examples."

Table 31–3 Search Considerations and Recommendations

Consideration	Recommendation
Oracle WebCenter Content provides limited support for querying on null or non-null values.	Be aware of the differences in search behavior and do not write search expressions that depend on unsupported criteria.
Recursive search for folders is not supported by Oracle WebCenter Content, but is supported for documents if configured on the Oracle WebCenter Content server as described to the right.	Scope the search to only include documents (add a select clause like `select * from cmis:document`). Set the search path on the Search object (add a where clause like "`where IN_TREE('/StellentRepository/IDC:Folder/2`'). Configure the `folders_g CollectiveSearchRecursiveContent` and related settings like `CollectionMaxBranch` in the Oracle WebCenter Content config.cfg file.
Multivalued property operators perform substring matches. This is true for `ANY <multiValuedQueryName> IN (<literal>, ...)` or `<literal> = ANY < multiValuedQueryName>`. In Oracle WebCenter Content, a field with an option list stores values in a comma-delimited manner. For example, if you have values "A", "B", and "C", these will be represented as "A, B, C". Using an ANY or ANY IN search for 'A, B' will find this item.	Be aware of the differences in search behavior and consider changing the Oracle WebCenter Content option list delimiter character in the Configuration Manager applet to reduce the potential for finding extra matches.
When searching folders (`FROM cmis:folder`), at most one value can be specified per criteria. Each criteria is logically ANDed with the others to make a more selective query. There is no support for `OR` or `NOT` operators when searching folders.	Do not use `OR` and `NOT` in Oracle WebCenter Content folder search.
Not all properties are searchable, and if the search encounters a property that is not searchable, it will return a ParseException (400 error).	Understand which properties are searchable for a given content type by examining the Oracle WebCenter Content Configuration Manager information fields section, or by reviewing the ContentType definition. Examine the URL for the `isSearchable` field setting Example URLS: `http://myContentServer/idc/idcplg?IdcService=VCR_GET_CONTENT_TYPE&vcrContentType=IDC:Folder&IsSoap=1` Or, examine the specific type through CMIS.
Not all ContentTypes are searchable. An attempt to search for a non-searchable ContentTypes will throw an exception. For example, the `IDC:FileReference` ContentType is not searchable.	Be aware that not all ContentTypes are searchable.
Only String multi-valued properties can be searched.	Do not specify search for multi-valued property types other than String.
The `NOT` operator cannot be used for `LONG` properties.	Try to restructure the query using supported syntax.
Only one sort criteria is supported.	Do not write search expressions that use more than a single sort criteria.

Table 31–3 (Cont.) Search Considerations and Recommendations

Consideration	Recommendation
Sorting on non-indexed fields results in an exception. Searching on a non-indexed field throws an exception, with the embedded exception code of, for example, "DRG-10837: section dStatus does not exist".	Understand which fields have been indexed before using them as sort criteria. Examine the URL for the `isSortable` field definition. Example URL: `http://myContentServer/idc/idcplg?IdcService=GET_ADVANCED_SEARCH_OPTIONS&IsSoap=1,` Or examine the type through CMIS to see if the property definition is queryable.
Empty values are not allowed in a search query.	Do not use a criteria such as `cmis:name != ''..`
The `Notequals` operator is not supported for non-String properties	Be aware of the differences in search behavior and do not write search expressions that depend on unsupported criteria.
Multiple search paths on the same Oracle WebCenter Content repository are not supported.	Be aware of the differences in search behavior and do not write search expressions that depend on unsupported criteria.
When searching for documents, recursive search (folder tree search) is supported if Oracle WebCenter Content is configured properly. If the search path is not set, then all documents in the repository will be searched (both filed and unfiled).	Configure the content server `folders_g CollectionSearchRecursiveContent` and related settings like `CollectionMaxBranch` in the Oracle WebCenter Content config.cfg file. These settings are described in the Oracle WebCenter Content documentation. To perform a document search scoped to a folder tree, use the IN_TREE predicate.
When searching for documents and using the `LIKE` operator, wildcards (`%`) are only supported in the last path element.	Be aware of the differences in search behavior and do not write search expressions that depend upon unsupported criteria.
When searching documents (select * from cmis:document), it is not possible to limit the search to more than just a single content type; for example, this is not supported: `select * from IDC:MyProfile, IDC:AnotherProfile` because it has multiple explicit content types and `JOINS` are not supported.	If you need to limit the search to more than just a single content type, issue multiple queries to achieve the same behavior. If you want to search across all types, use cmis:document in the select statement.
Oracle WebCenter Content search does not support `OR` when `cmis:objectTypeId` is specified in a query; other parameters can be ANDed with this criteria, but `OR` is not supported.	If this functionality is necessary, issue multiple queries to achieve the same behavior.
The `cmis:objectTypeId` criteria only supports `==`, `!=`, and `like`. Use of `!=` is restricted to the case of excluding folders (which behaves the same as adding `select * from cmis:document`).	Be aware of the valid operators when using `cmis:objectTypeId` criteria.
Queries may be case-sensitive depending on the selected Oracle WebCenter Content search engine.	Be aware that the Oracle WebCenter Content search engine selection can affect case-sensitivity. Metadata searches using OracleTextSearch as the search engine are generally case-insensitive. Metadata searches using `DATABASE.FULLTEXT` as the search engine are generally case-sensitive. The exact behavior sometimes varies by metadata field.

31.1.2 Services

The methods described in *Section 2.2 Services* of the CMIS specification are implemented by the Content Management REST Service; specific implementation details are covered in Section 31.2, "CMIS Part II: RESTful AtomPub Binding."

31.2 CMIS Part II: RESTful AtomPub Binding

Section 3: RESTful AtomPub Binding in the CMIS specification defines a specification based on AtomPub that can be used by applications to work with one or more Content Management Repositories. REST services are available through a portal instance.

31.2.1 Service Document

All navigation of a repository begins with the AtomPub Service Document. From this document, all accessible content in a repository can be discovered through the collections, links, and templates.

The URI to the service document, relative to the CMIS web application's context-root, is /rest/cmis/repository.

Therefore, if an application is deployed with a library-context-root-override as in the example above, the service document would be accessed through the following URL:

```
http://hostname:port/rest/cmis/repository
```

> **Note:** The REST application is only available with portals and not with Portal Framework applications. However, you can make HTTP requests from your Framework application to access the REST and CMIS resources that are available in a portal. You must make sure that the portal instance is configured with the relevant content connections that you wish to access.

By default, this document will contain a workspace for each configured Oracle WebCenter Content repository (only Oracle WebCenter Content repositories are supported by CMIS REST in Oracle WebCenter Portal). A service document for a single repository can be obtained by using the `repositoryId` query parameter, as described in section 3.6.2.1 of the CMIS AtomPub binding specification.

As noted in the previous section, the service document consists of AtomPub workspaces. Each workspace maps to a Oracle WebCenter Portal WebCenter Content connection.

Specific URIs beyond the service document are not published; it is assumed that users will start at the service document and navigate the collections and links down expected paths. The relationships of the links and the titles and types of the collections are all defined in the CMIS specification, and thus can be commonly navigated by a client implementation. There are also templates defined for each repository, for easier access of objects by path, object by ID, type by ID, and queries. The format of the variables for the path and ID templates can be discovered by viewing the Entries of Folders and Documents.

31.2.2 Response Formats

Section 3.1.3: Response Formats in the CMIS specification indicates that Atom/AtomPub style formats will be returned by default unless overridden by a supported media type expressed in the Accept header.

A generic AtomPub feed reader can walk through any of the feeds returned by the CMIS REST server. It will not see all the CMIS specifics, but will be able to navigate through links. In general, to set up a feed reader, you need to know the URI of a particular feed, which can be discovered by navigating through the service document, for example, the workspace link for "typesdescendants".

For details on query syntax, see the CMIS specification. For Content Management REST Service best practices and examples, see Section 31.3, "Content Management REST Service Best Practices and Examples."

31.2.3 Additional Functionality

The Content Management REST Service provides the following additional functionality beyond the CMIS specification.

- Section 31.2.3.1, "Folder Children Collection"
- Section 31.2.3.2, "Document Entry"
- Section 31.2.3.3, "Content Stream"

31.2.3.1 Folder Children Collection

The specification defines the following CMIS services:

- GET: getChildren
- POST: createDocument
  or createFolder
  or createPolicy
  or moveObject
  or addObjectToFolder

The Content Management REST Service provides the following additional services:

- POST: create
  This service has five query parameters: uid, fileName, contentId, comments, simpleResponse, and one header parameter: Slug. This service is meant to be used as a simple binary request upload. A new document is created with this service. Slug and fileName are used to name the binary that is attached to the request (using both parameters is optional; only one needs to be defined and fileName is checked first). The comments parameter is optional and contentId is optional if Oracle WebCenter Content is set up to auto-generate the dDocName.
- POST: create Content-Type: multipart/form-data
  This service has a single query parameter: uid, which is the uid of the folder in which the document is to be created. The boolean query parameter simpleResponse will return a response of media type: application/atom+xml;type=entry, if set to false. If set to true, a response of media type: text/html will be returned with a URI pointing to the newly created document. The comments and simpleResponse parameters are both optional, contentId is optional if Oracle WebCenter Content is set up to auto-generate the dDocName, and the name "fileUpload" is required.

```
<html>
<head>
    <title>simple post</title>
</head>
<body>
<form
action="http://<host>:<port>/rest/api/cmis/children/StellentRepository?uid=IDC:
```

```
Folder/2"
      method="POST"
      enctype="multipart/form-data">
    Select a document to upload: <input type="file" name="fileUpload"/><br>
     <input type="hidden" name="comments" value="this is just a comment"/>
     <input type="hidden" name="contentId" value="uniqueID1"/>
     <input type="hidden" name="simpleResponse" value="true"/>
    <input type="submit" value="Submit"/>
</form>
</body>
</html>
```

31.2.3.2 Document Entry

The specification defines the following CMIS services:

- GET: getObject, getObjectOfLatestVersion (getObject)
- PUT: updateProperties
- DELETE: deleteObject

The Content Management REST Service provides the following additional services:

- POST: postToDelete
  This service has two query parameters: uid and _method, and allows a document to be deleted through POST.

  ```
  http://<host>:<port>/rest/api/cmis/document/repoName?uid=ABC&_method="delete"
  ```

31.2.3.3 Content Stream

The specification defines the following CMIS services:

- GET: getContentStream
- PUT: setContentStream
- DELETE: deleteContentStream

The Content Management REST Service provides the following additional services:

- POST: postTunnelContentStream
  This service has five query parameters: uid, overwriteFlag, fileName, comments, _ method, and one header parameter: Slug. This service is meant to be used as a simple binary request upload or delete through POST. A document must already exist for this service. Slug and fileName are used to name the binary that is attached to the request (using both parameters is optional; only one needs to be defined and fileName is checked first). The overwriteFlag parameter defaults to true, the comments parameter is optional and valid values for _method are "delete" or "put" (not case sensitive).

  ```
  http://<host>:<port>/rest/api/cmis/stream/repoName?uid=ABC&_method="delete"
  ```

- POST: postTunnelContentStream
  Content-Type: multipart/form-data
  This service has a single query parameter: uid and is meant to be used as a simple html multipart/form-data upload or delete through POST. A document must already exist for this service. The attribute name="fileUpload" is required, "comments" is optional, and valid values for "_method" are "delete" or "put" (not case sensitive).

  ```
  <form
  action="http://<host>:<port>/rest/api/cmis/stream/repoName?uid=WDOC019113"
  ```

```
          method="POST"
          enctype="multipart/form-data">
        Select a document to upload: <input type="file" name="fileUpload"/><br>
         <input type="hidden" name="comments" value="this is just a comment"/>
         <input type="hidden" name="_method" value="PUT"/>
        <input type="submit" value="Submit"/>
    </form>
```

31.3 Content Management REST Service Best Practices and Examples

This section provides best practices and examples using the Content Management REST Service. For details on query syntax, see the CMIS specification.

This section includes the following subsections:

- Section 31.3.1, "Best Practices"
- Section 31.3.2, "Content Management REST Service Examples"

31.3.1 Best Practices

The following list provides suggested best practices for repositories that use the Content Management REST Service.

- To determine the types that can be used in the "FROM" portion of a query, see the types collection from the AtomPub service document. The type must be queryable and the query name of that type must be used.

  For example, IDC:GlobalProfile might have type information similar to the following:

  ```
  <cmis:localName>IDC:GlobalProfile</cmis:localName>
  <cmis:displayName>IDC:GlobalProfile</cmis:displayName>
  <cmis:queryName>ora:t:IDC!;GlobalProfile</cmis:queryName>
  <cmis:queryable>true</cmis:queryable>
  ```

  An example query for the type information above could be: "SELECT * FROM ora:t:IDC!;GlobalProfile".

- To determine the properties that can be used in the "SELECT" and "WHERE" portions of a query, see the entry for the associated type. Each property definition of that type will be listed and will have a setting for queryable and orderable. The cmis:queryname will be the value to be used in the query.

  For example, IDC:GlobalProfile might have property definition information similar to the following:

  ```
  <cmis:propertyStringDefinition>

  <cmis:id>/stanl18-ucm11g/IDC:GlobalProfile.ora:p:dDocName</cmis:id>
                <cmis:localName>dDocName</cmis:localName>
                <cmis:displayName>dDocName</cmis:displayName>
                <cmis:queryName>ora:p:dDocName</cmis:queryName>
                <cmis:description>Content ID</cmis:description>
                <cmis:propertyType>string</cmis:propertyType>
                <cmis:cardinality>single</cmis:cardinality>
                <cmis:updatability>readwrite</cmis:updatability>
                <cmis:inherited>false</cmis:inherited>
                <cmis:required>false</cmis:required>
                <cmis:queryable>true</cmis:queryable>
                <cmis:orderable>true</cmis:orderable>
              </cmis:propertyStringDefinition>
  ```

An example query for the property definition information above could be: "SELECT ora:p:dDocName FROM ora:t:IDC!;GlobalProfile"

- To keep queries more readable, avoid non-alphanumeric characters in ContentType and PropertyDefinition names.

31.3.2 Content Management REST Service Examples

This section provides some example queries. For details on query syntax, see the CMIS specification. (To get the full URI for a query, see the query URI template in the service document.)

- SELECT * from cmis:folder
- SELECT cmis:name, cmis:contentStreamFileName, cmis:contentStreamMimeType, cmis:contentStreamLength FROM cmis:document WHERE cmis:contentStreamFileName = 'BinaryName' AND cmis:contentStreamMimeType = 'text/html' AND cmis:contentStreamLength > 1
- SELECT cmis:name, cmis:creationDate, cmis:lastModificationDate FROM cmis:folder WHERE cmis:name = 'Trash' AND cmis:lastModificationDate > TIMESTAMP '2008-05-18T10:32:44.703-06:00'
- SELECT * FROM cmis:document WHERE cmis:name LIKE 'baker%'
- SELECT * FROM cmis:document WHERE cmis:name NOT IN ('nodeBoolean', 'nodeLong')
- SELECT cmis:name from cmis:document where IN_TREE('/StellentRepository')
- SELECT * FROM ora:t:IDC:GlobalProfile WHERE ora:p:xBooleanTestField = FALSE ORDER BY ora:p:dDocTitle ASC
- SELECT ora:p:xMultiValuedDelimiterTest FROM ora:t:IDC:GlobalProfile WHERE ANY ora:p:xMultiValuedDelimiterTest NOT IN ('four')
- SELECT cmis:name FROM ora:t:IDC:GlobalProfile WHERE CONTAINS('test') ORDER BY ora:p:dInDate DESC
- SELECT * FROM cmis:document where IN_TREE('/StellentRepository/IDC:Folder/2')

Part V

Enabling Communication and Collaboration

Part V contains the following appendixes:

32

Integrating Announcements

This chapter explains how to integrate announcements into a Portal Framework application at design time.

This chapter includes the following sections:

- Section 32.1, "Introduction to Announcements"
- Section 32.2, "Basic Configuration for Announcements"
- Section 32.3, "Advanced Information for Using Announcements"

For more information about managing and including announcements, see:

- the "Managing Announcements and Discussions" chapter in *Administering Oracle WebCenter Portal*
- the "Working with Announcements" chapter in *Using Oracle WebCenter Portal*

32.1 Introduction to Announcements

With portals and Framework applications, you can create and expose announcements on your application pages. Access to announcements boosts community participation, problem resolution, and knowledge sharing.

Note that while for portals, announcements can show either forum-level announcements or global announcements (that is, system announcements not specific to a forum), for Framework applications only global announcements are shown.

This section includes the following subsections:

- Section 32.1.1, "Understanding Announcements"
- Section 32.1.2, "Requirements for Announcements"
- Section 32.1.3, "What Happens at Runtime"

32.1.1 Understanding Announcements

With WebCenter Portal, you can do the following:

- Create announcements
- Edit and delete existing announcements
- Mail announcements
- Personalize the way in which announcements are viewed. You can select to display all announcements or only announcements sent today, this week, or this month. You can also view future, active, or expired announcements.

- Manage announcements, such as publishing announcements on a later date and specifying auto-expire on certain dates.

Announcements are integrated with many other WebCenter Portal features, such as activities, RSS feeds, and instant messaging and mail, and you can link announcements to other WebCenter Portal features such as events and discussions. For example, suppose your company is announcing a new product, you can link from the announcement directly to a discussion forum, where potential customers can ask other customers about the product, or link to an instant messaging tool to speak directly with a customer service representative to find out about or purchase the product.

32.1.2 Requirements for Announcements

To use announcements in a Framework application you must have installed and configured the discussions server that comes with Oracle Fusion Middleware.

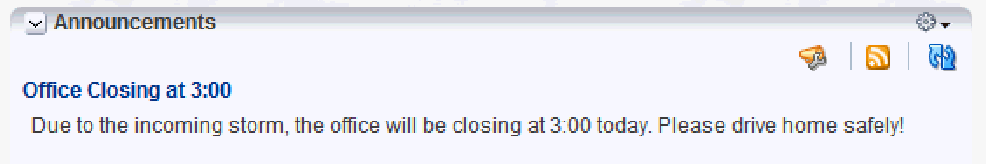
See Also: *Installation Guide for Oracle WebCenter Portal*

32.1.3 What Happens at Runtime

At runtime, users who have been granted the `Create Announcements` permission can post announcements, and these announcements are visible to all users who have `View Announcements` permission. For example, an application specialist can use announcements to showcase the availability of a new feature or the plan to shut down the application temporarily for maintenance.

Figure 32–1 shows a sample announcement at runtime.

Figure 32–1 Sample Announcement in the Announcements - Quick View Task Flow



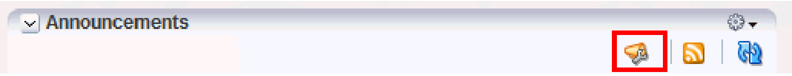
Announcements

Office Closing at 3:00

Due to the incoming storm, the office will be closing at 3:00 today. Please drive home safely!

To view announcements in the Announcement Manager, ensure that the Announcements task flow has been added to your Framework application. Then log in to your application and click the **Open Announcement Manager** icon in the Announcements task flow (Figure 32–2).

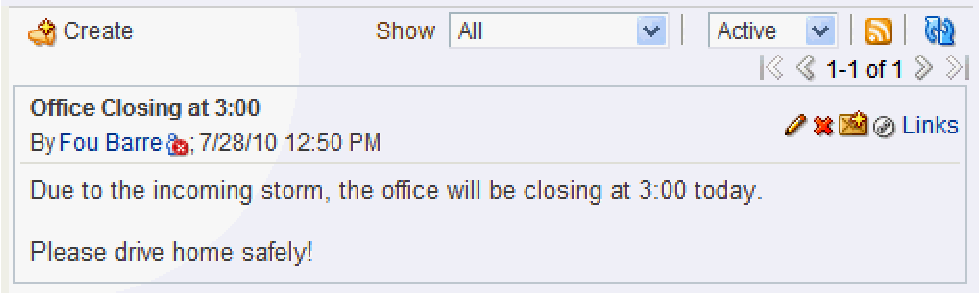
Figure 32–2 Open Announcement Manager Icon



Note: The **Open Announcement Manager** icon does not display if the user does not have the required privileges.

Figure 32–3 shows the sample announcement in the Announcement Manager.

Figure 32–3 Sample Announcement in the Announcement Manager



Office Closing at 3:00

By Fou Barre; 7/28/10 12:50 PM

Due to the incoming storm, the office will be closing at 3:00 today.

Please drive home safely!

Application administrators in Framework applications can access the Announcement Manager, which provides **Create**, **RSS**, and **Refresh** icons, and **Show** dropdown lists to control the display of announcements on the page. **Edit**, **Delete**, **Mail**, and **Links** icons are available for each announcement in the list.

Depending on the privileges users have on the page and what has been made available in WebCenter Portal and is configured in the application, users may see only a subset of these options in the Announcement Manager. For example, the **Delete** icon is displayed only to users with administrative privileges.

For more information about announcements at runtime, see the "Working with Announcements" chapter in *Using Oracle WebCenter Portal*.

32.2 Basic Configuration for Announcements

This section describes required steps for adding announcements to your Framework application. It includes the following subsections:

- Section 32.2.1, "Setting Up a Connection for Announcements"
- Section 32.2.2, "Adding Announcements at Design Time"
- Section 32.2.3, "Setting Security for Announcements"

32.2.1 Setting Up a Connection for Announcements

To take advantage of announcements, you must first create a connection to the discussions server from your application. To do so, ensure that you have the connection information for the discussions server.

32.2.1.1 Announcements Connections

Announcements requires a Discussion Forum connection to the discussions server. You can register additional Discussion Forum connections, but only one connection is active at a time.

When you create a Discussion Forum connection or set a connection as active, both announcements and discussions use this same connection. If you have an existing connection, then you can skip this section and see Section 32.2.2, "Adding Announcements at Design Time."

If you do not have an existing connection, then you must create a new Discussion Forum connection.

> **Note:** While you can set up the connections to back-end servers at design time in Oracle JDeveloper, you can later add, delete, or modify connections in your deployed environment using Enterprise Manager Fusion Middleware Control. For more information, see *Administering Oracle WebCenter Portal*.

32.2.1.2 How to Set Up Connections for Announcements

To set up the Announcements connection:

1. In Oracle JDeveloper, open the application in which you plan to consume Announcements.

   > **Note:** If you created a Discussion Forum connection for announcements, then that is used by default for announcements. No extra configuration is required.

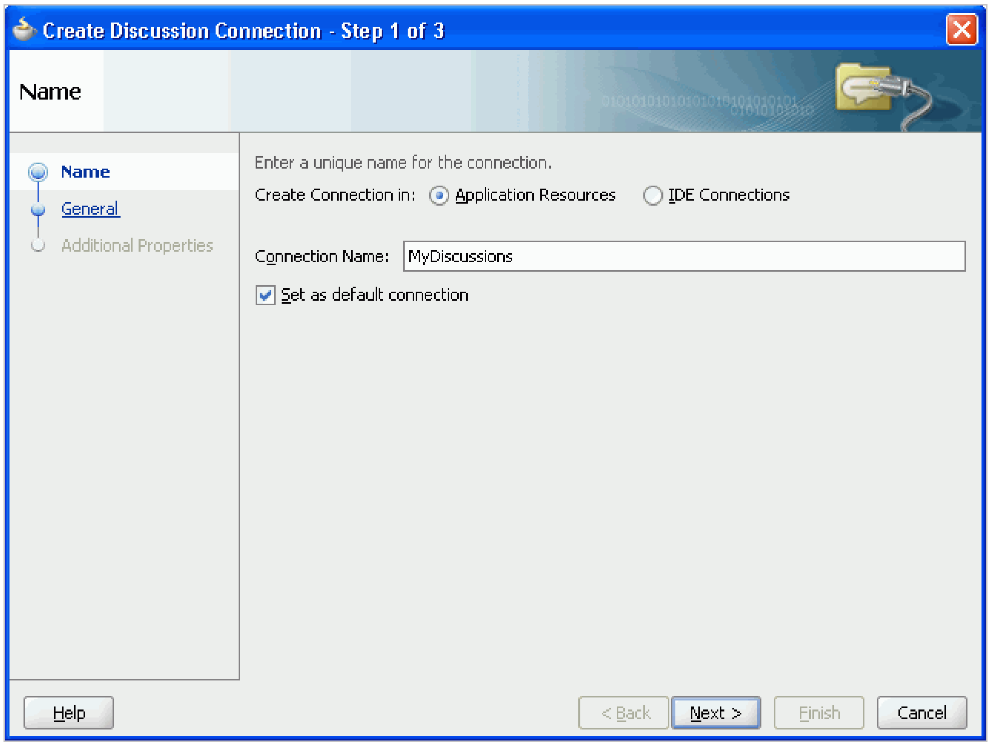
2. In the Application Navigator, under Application Resources, right-click **Connections**, then select the new connection **Discussion Forum** from the list.
3. On the **Name** page, select to create the connection in **Application Resources**. (A connection in Application Resources is available only for that application, while a connection in IDE Connections is available for all applications you create. If you plan to use the connection in other applications, then select IDE Connections so you do not need to re-create it.)

   > **Note:** If you create a connection in IDE and not in the application, then the connection must be added to the application. For example, in the Resource Palette under IDE Connections, right-click the connection and select **Add to Application**.

4. For **Connection Name**, enter a meaningful name; for example, `MyDiscussions`.
5. Select the **Set as default connection** check box. You can have multiple connections, but only one can be active (default). If you have different discussions servers (for example, for each page in your application), then do not select the check box, but one connection must be marked as the active connection (Figure 32–4).

   > **Note:** After you create a connection as the active connection, you cannot edit it so that it is *not* the default. To use a different default connection, you must create a new connection and mark that as the default connection.

Figure 32–4 Create Discussion Connections, Step 1



Create Discussion Connection - Step 1 of 3

Name

Enter a unique name for the connection.

Create Connection in: ● Application Resources ○ IDE Connections

Connection Name: MyDiscussions

☑ Set as default connection

6. Click **Next**.

7. On the **General** page, enter values for the required parameters:

   - `URL`: Enter the URL of the discussions server; for example: `http://discussions.example.com:8888/owc_discussions`.
   - `Admin User`: The user name of your discussions server administrator; for example, `admin`. This account is used by discussions and announcements to perform administrative operations on behalf of WebCenter Portal users.

     In WebCenter Portal, this account is mostly used for managing portal-related discussions and announcements. It is not necessary for this user to be a super admin. However, the user must have administrative privileges on the current root category for WebCenter Portal, that is, the category (on the discussions server) under which all portal-related discussions and announcements are stored.

8. Optionally, enter a value for the other parameters:

   - `Connection Timeout`: Specify a suitable timeout for the connection. This is the length of time (in seconds) the application waits for a response from the discussions server before issuing a connection timeout message. The default is -1, which means that a default value of 10 seconds is used.
   - `Policy URI for Authenticated Access`: Select the SAML token client policy this connection uses for authenticated access to the discussions server Web service. SAML (Security Assertion Markup Language) is an XML-based standard for passing security tokens defining authentication and authorization rights. An attesting entity (that has trust relationship with the receiver) vouches for the verification of the subject by method called sender-vouches. Options available are:

- WSS 1.0 SAML Token Client Policy (oracle/wss10_saml_token_client_policy)
- WSS 1.1 SAML Token With Message Protection Client Policy (oracle/wss11_saml_token_with_message_protection_client_policy)

The client policy specified must be compatible with the service policy that is configured for the `OWCDiscussionsServiceAuthenticated` endpoint in the discussions server. Out-of-the-box, the default service policy is WSS 1.0 SAML Token Service Policy (oracle/wss10_saml_token_service_policy).

- `Policy URI for Public Access`: Select the client policy this connection uses to enforce message security and integrity for public access to the discussions server Web service. Options available are:

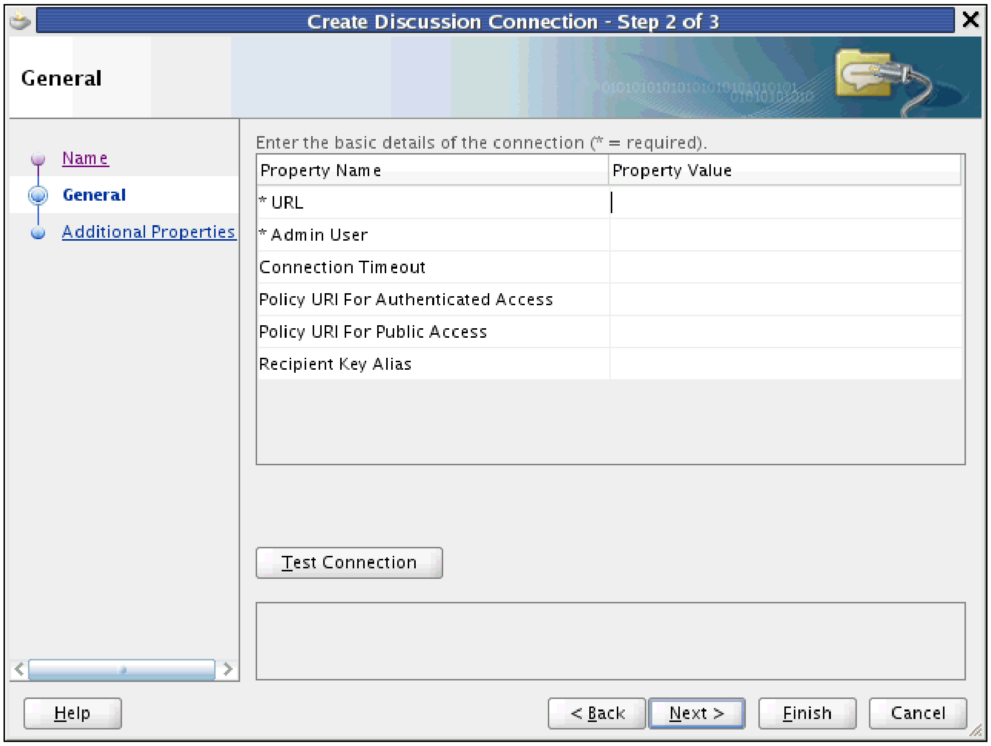
  - None - This is the default setting.
  - WSS 1.1 Message Protection Client Policy (oracle/wss11_with_message_protection_client_policy)

  The client policy specified must be compatible with the service policy that is configured for the `OWCDiscussionsServicePublic` endpoint in the discussions server. Out-of-the-box, a service policy is not configured for public access.

- `Recipient Key Alias`: Enter the recipient key alias to be used for message protected policies (applicable to the `OWCDiscussionsServicePublic` and `OWCDiscussionsServiceAuthenticated` endpoints). This is the alias to the certificate that contains the public key of the discussions server in the configured keystore.

  For more information, see the "Configuring WS-Security" chapter in *Administering Oracle WebCenter Portal*.

Figure 32–5 Create Discussions Connection, Step 2



Create Discussion Connection - Step 2 of 3

General

Enter the basic details of the connection (* = required).

Property Name	Property Value
* URL	
* Admin User	
Connection Timeout	
Policy URI For Authenticated Access	
Policy URI For Public Access	
Recipient Key Alias	

9. Click **Test Connection**, and if it is successful, then click **Next**.
10. On the **Create Discussion Connection - Step 3 of 3** page, you can configure additional parameters. For example:

    `application.root.category.id`: (WebCenter Portal only) The application root category ID on the discussions server under which all discussion forums are stored. For example, if set to 3, then all forums are stored inside the category 3.

    > **Note:** To encrypt property values, such as passwords, click **Add Secured Property**.

11. Click **Finish**. Your connection should now appear as a node under **Application Resources - Connections**.

32.2.2 Adding Announcements at Design Time

This section explains how announcements can be incorporated at design time.

32.2.2.1 Announcements Task Flows

Both the Announcements and the Announcements - Quick View task flows display current announcements. The Announcements task flow additionally offers tools for managing announcements within the task flow. With the Announcements - Quick View task flow, you must click the **Open Announcement Manager** icon to manage announcements, and administrators can configure this task flow to remove all announcement management functionality.

Table 32–1 Announcements Task Flows

Task Flow	Description
Announcements	This task flow displays a view that allows the user to see all current announcements and perform operations based on their privileges. For a Moderator, all command buttons are shown, but for a Reader, only the refresh and personalization options are shown. The personalization option lets users select the number of days to display announcements. The `parentId` parameter is the forum ID in the discussions server under which announcements are maintained. Each Framework application should create a forum on the discussions server.
Announcements - Quick View	This task flow displays a view that shows various categories of quick links to announcements. The `parentId` parameter is the forum ID in the discussions server under which announcements are maintained. Each Framework application should create a forum on the discussions server. The look and feel of this view changes with the optional parameter values given for rendering the task flow region. For information on how to add this task flow, see Section 32.3.1, "How to Add the Announcements - Quick View Task Flow."

32.2.2.2 How to Add Announcements to Your Page

The Announcements task flow provides a complete view of your announcements. To add the Announcements task flow to your Framework application:

1. Follow the steps described in Chapter 2, "Setting Up Your Development Environment" to implement security and create a new customizable page in your application.
2. Open the page on which you want to add an announcement.
3. In the Resource Palette, expand **My Catalogs**, **WebCenter Portal - Services Catalog**, and **Task Flows**.
4. Drag **Announcements** from the Resource Palette and drop it onto the page inside of the `af:form` `begin` and `end` tags.
5. When prompted, select **Region** as the way to create the task flow (and confirm with **Add Library**). This operation may take a moment to complete.
6. In the Edit Task Flow Binding dialog, enter a value for the `parentId` parameter.

   The discussions server could be shared with multiple Framework applications. Each Framework application should create a forum on the discussions server. Enter that forum ID here as the `parentId`; for example, `${2}`.
7. Click **OK**.
8. Save and run your page.

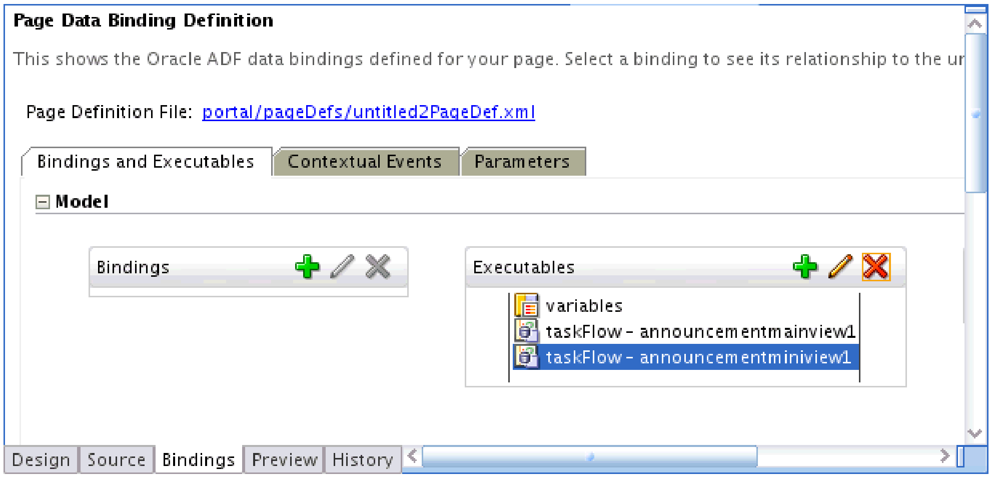
32.2.2.3 How to Modify Announcement Task Flow Parameters

The announcements task flows have required and optional task flow binding parameters.

You can adjust the parameter values when you drop the task flows onto a page or after you have placed a task flow on a page:

1. Navigate to the Edit Task Flow Binding dialog by clicking the **Bindings** tab at the bottom of the page (next to the **Source** tab).
2. Under **Executables**, you'll see the task flow you added. Figure 32–6 shows an example of a Search task flow in the Executables section.

Figure 32–6 Page Data Binding Definition



Page Data Binding Definition

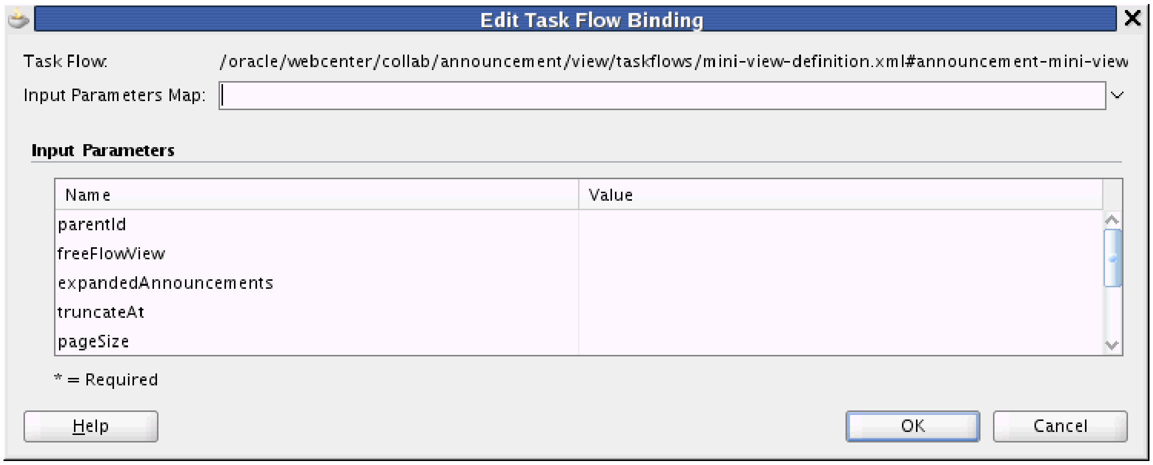
This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relationship to the ur

Page Definition File: portal/pageDefs/untitled2PageDef.xml

3. Select the task flow, and next to the Executables heading, click the **Edit selected element** (pencil) icon.

4. In the Edit Task Flow Binding dialog Figure 32–7, revise the binding parameter values as required.

Figure 32–7 Edit Task Flow Binding Dialog for Announcements - Quick View



Edit Task Flow Binding

Task Flow: /oracle/webcenter/collab/announcement/view/taskflows/mini-view-definition.xml#announcement-mini-view

Input Parameters Map:

Input Parameters

Name	Value
parentId	
freeFlowView	
expandedAnnouncements	
truncateAt	
pageSize	

* = Required

5. When you are finished, click **OK.**

6. Save and run your page to see the results.

Table 32–2 describes the properties that are unique to announcements task flows.

Table 32–2 Announcement Task Flow Parameters

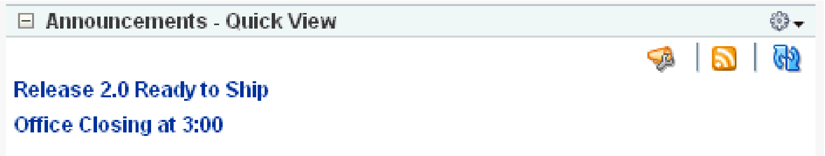
Property	Description	Task Flow
`parentId`	The forum ID in the discussions server under which announcement objects are maintained. Each Framework application should create a forum on the discussions server. Enter that forum ID here; for example, `${2}`. If this parameter is not specified, then announcements default to global announcements.	Announcements Announcements - Quick View
`freeFlowView`	A Boolean value representing whether to remove the announcement title (subject) and show the announcement body as is. The default value is `${false}`, which means that the announcement list displays the title and body in plain text and the `truncateAt` and `expandedAnnouncements` parameters control it. Enter `${true}` to remove the announcement title and ignore the values for `truncateAt` and `expandedAnnouncements`.	Announcements - Quick View
`expandedAnnouncements`	The number of announcements to display announcement details (that is, the body of the announcement). Users can click the title to display the full announcement content in rich text mode. The value you enter for `expandedAnnouncements` is ignored if `freeFlowView` is set to `true`.	Announcements - Quick View

Table 32–2 (Cont.) Announcement Task Flow Parameters

Property	Description	Task Flow
`truncateAt`	For announcements that display announcement body, this value specifies how many characters to display for each announcement. Enter an Expression Language (EL) expression. For example, when the value is set to the EL expression `${50}`, following their titles, announcements display no more than 50 characters. Users can click announcement titles to display the full announcement. If no value is specified, then it displays 200 characters. If a non-valid positive integer value is specified, then it displays all characters in plain text. This parameter takes effect with `expandedAnnouncements`. The value you enter for `truncateAt` is ignored if `freeFlowView` is set to `true`.	Announcements - Quick View
`pageSize`	The number of announcements to show in a page on Extended Quick View.	Announcements - Quick View
`visibleAnnouncements`	The number of announcements to show in the Quick View.	Announcements - Quick View
`hideToolbar`	A Boolean value representing whether to display the task flow personalization feature.	Announcements - Quick View
`navigateToAnnouncementViewer`	A Boolean value representing whether to launch the announcement in a popup or navigate to the Announcement Manager. The default behavior is to launch in a popup. Enter `true` to navigate to the Announcement Manager.	Announcements - Quick View
`expandAllAnnouncements`	A Boolean value representing whether to display details for all announcements in extended quick view. Default value is `false`, in which case announcements display the announcement title only.	Announcements - Quick View

You can change the look and feel of the Announcements - Quick View task flow using parameter values. For example, Figure 32–12 shows the Announcements - Quick View task flow at runtime with the `freeFlowView` parameter set to false (or empty).

Figure 32–8 Announcements - Quick View with Optional Parameters



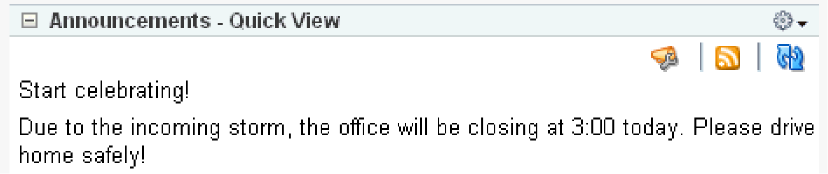
Announcements - Quick View

Release 2.0 Ready to Ship

Office Closing at 3:00

Figure 32–13 shows the Announcements - Quick View task flow at runtime with the `freeFlowView` parameter set to `${true}`.

Figure 32–9 Announcements - Quick View with freeFlowView Parameter



Announcements - Quick View

Start celebrating!

Due to the incoming storm, the office will be closing at 3:00 today. Please drive home safely!

32.2.3 Setting Security for Announcements

By default, authenticated users of Framework applications can view and participate in announcements. Any user who has logged in to a WebCenter Portal application can view announcements, and users with sufficient permissions can create announcements. To create announcements, you must be a moderator or administrator on the back-end discussions server.

In an unsecured Framework application, identity propagation cannot happen. A user is a *guest* (or *anonymous*) user who can view only public categories and forums. In an unsecured application, the `parentId` (forum ID) from which announcements are fetched should be a public forum. If the forum is not public, then an error is reported. If the `parentId` parameter is not specified at all, then WebCenter Portal cannot fetch global announcements (that is, announcements not scoped to a forum): global announcements are not available for public users. Rather than relying to global announcements, each Framework application should reserve its own forum ID.

In an ADF-secured Framework application, identity propagation is enabled. Based on the identity, appropriate permissions are matched and corresponding actions are enabled. The user name that you use to log in to the application is used to log in to the discussions server. The recommended approach is to have the discussions server and the Framework application point to the same identity store. This way, your users can log in to the application one time and automatically connect to the discussions server.

Note: Announcements requires an external LDAP-based identity store; that is, you cannot use the out-of-the-box embedded LDAP with announcements.

ADF security is configured by default if you created your application using WebCenter Portal's Framework application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."

32.3 Advanced Information for Using Announcements

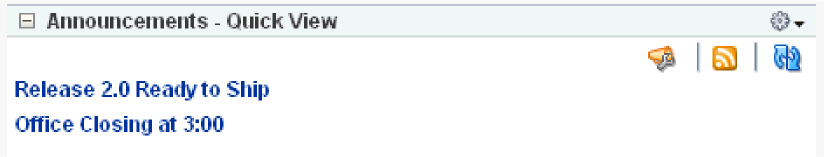
This section describes optional features available with announcements. It includes the following subsections:

- Section 32.3.1, "How to Add the Announcements - Quick View Task Flow"
- Section 32.3.2, "Customizing Announcements Views"
- Section 32.3.3, "Obtaining a Portal RSS News Feed URL for Announcements"

32.3.1 How to Add the Announcements - Quick View Task Flow

The Announcements - Quick View task flow provides a snapshot (dashboard) view of the announcements (Figure 32–10).

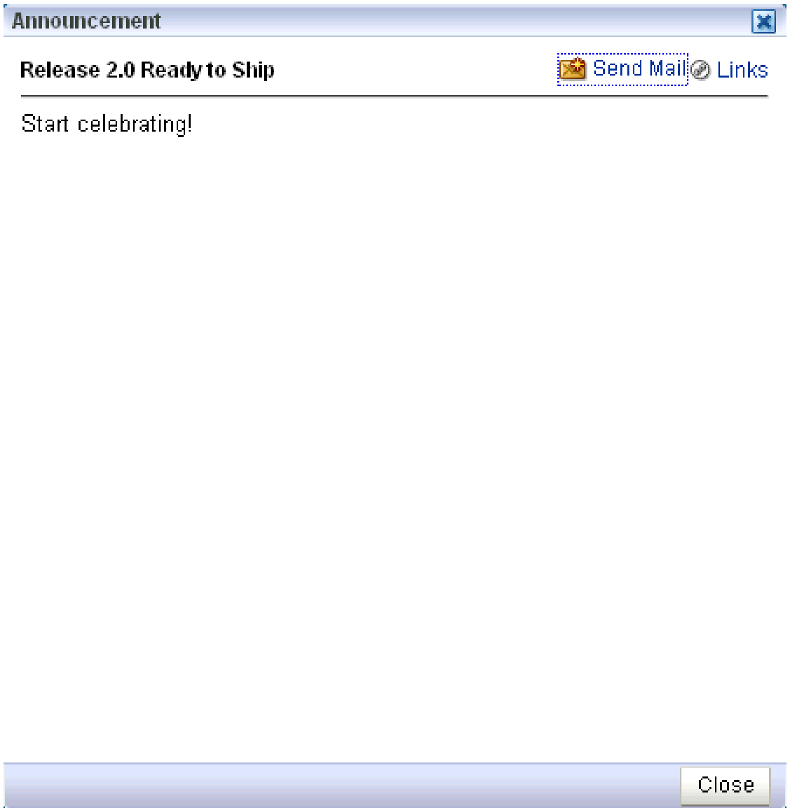
Figure 32–10 Announcements - Quick View



By default, announcements in the Announcements - Quick View task flow show announcement titles as links. But you can configure the task flow to display only announcement titles, titles with some amount of content, or only content.

Click an announcement to view it in a popup. From there, you can select the **Mail** icon to mail the announcement to anyone you choose or select the **Links** icon to link to this announcement (Figure 32–10).

Figure 32–11 Announcement Popup



Announcement

Release 2.0 Ready to Ship

Start celebrating!

The Announcements - Quick View task flow includes numerous parameters to customize your view. For example, you can remove the link to the Announcement Manager, to present announcements to end users where manage controls are not needed. The task flow lists 10 announcements by default, but you can change this number and how much of the announcement is displayed. The **More Announcements ...** link launches a popup containing the complete list of all announcements with pagination behavior. This is called the Extended Quick View (or Mini View).

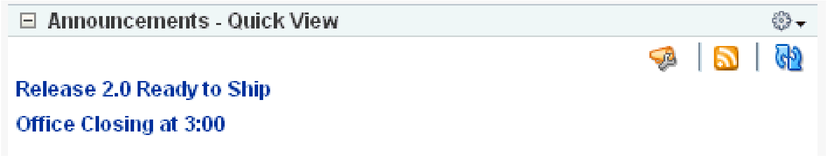
To add the Announcements - Quick View to your Framework application, follow the same instructions that you did for the Announcements task flow in Section 32.2.2, "Adding Announcements at Design Time," but drag and drop Announcements - Quick View onto the page.

Table 32–2 describes the Announcements - Quick View parameters. The look and feel of the Announcements - Quick View changes with the values provided for these parameters. For more information, see Section 32.2.2.3, "How to Modify Announcement Task Flow Parameters."

32.3.2 Customizing Announcements Views

You can change the look and feel of the Announcements - Quick View with the parameter values. For example, Figure 32–12 shows the Announcements - Quick View at runtime with the freeFlowView parameter set to false (or empty).

Figure 32–12 Announcements - Quick View with Optional Parameters

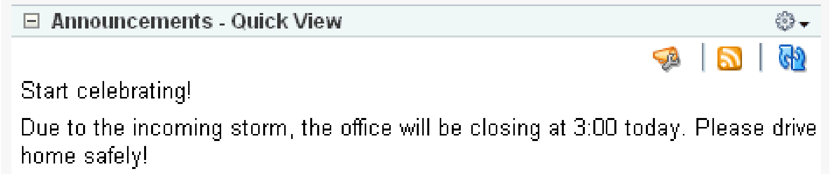


Release 2.0 Ready to Ship

Office Closing at 3:00

Figure 32–13 shows the Announcements - Quick View task flow at runtime with the freeFlowView parameter set to ${true}.

Figure 32–13 Announcements - Quick View task flow with freeFlowView Parameter



Start celebrating!

Due to the incoming storm, the office will be closing at 3:00 today. Please drive home safely!

32.3.3 Obtaining a Portal RSS News Feed URL for Announcements

You can expose WebCenter Portal functionality in a Framework application so that your Framework application users can find out what is happening in a specific portal through RSS news feeds.

Configure RSS news feeds for the announcements to enable users to view portal announcements from within a Framework application. To obtain the portal RSS news feed URL for the announcements, use either of the following WebCenter Portal API methods:

- getServiceRSSFeedURL
- getServiceRSSFeedURLbyGuid

To obtain an RSS feed URL, you must identify the portal (by name or GUID) and specify the service required (by service ID). The service ID for the announcements is GroupSpaceWSClient.ANNOUNCEMENT_SERVICE_ID.

For information about how to use these APIs, see Section 56.1.5.3.9, "Retrieving RSS Feed URLs for WebCenter Portal Tools and Services."

33

Integrating Discussions

This chapter explains how to integrate discussions in a Portal Framework application at design time.

This chapter includes the following topics:

- Section 33.1, "Introduction to Discussions"
- Section 33.2, "Basic Configuration for Discussions"
- Section 33.3, "Advanced Information for Discussions"

For more information about managing and including discussions, see:

- the "Managing Announcements and Discussions" chapter in *Administering Oracle WebCenter Portal*
- the "Working with Discussions" chapter in *Using Oracle WebCenter Portal*

33.1 Introduction to Discussions

You can expose discussion forums on your application pages, so users can create forums, post questions, and search for answers. For example, customers can share product reviews, or a customer service department can answer questions online. Discussion forums additionally provide the means to preserve and revisit discussions.

The back-end discussions server manages content in a hierarchy. At the top of the hierarchy are *categories*, below that are *forums*, and then *topics*. Within each topic are messages, and messages can be nested within messages.

Where categories are exposed in your application, authorized users can create multiple forums within a given scope and multiple topics under those forums. Where categories are not exposed, authorized users can create multiple topics under one forum within a given scope.

33.1.1 Understanding Discussions

With discussions, users can do the following (according to your permissions):

- Create a new discussion forum or a new topic.
- Navigate into a forum from a list of available forums.
- Edit, reply to, or delete an existing discussion forum, topic, or message.
- View the number of replies for a topic on the main forum view.
- Drill into a topic to read all replies by clicking the topic name.
- Add a "watch" to a topic or forum.

- View the following in a quick view:
  - Watched topics
  - Watched forums
  - Most popular (frequently viewed) topics
  - Most recent topics

Note: In a secured application, discussions permissions are allotted according to an individual user's assigned user role. A user can be a moderator, participant, or viewer. Some activities require moderator or participant roles. For more information, see Section 33.2.3, "Setting Security for Discussions."

Discussions is integrated with many WebCenter Portal components, such as instant messaging and presence, RSS, and search (to search within forums). Mail can be archived into discussions as threads. You can also link to a discussion from any WebCenter Portal object.

33.1.2 Requirements for Discussions

Discussions requires a discussions server. Install and configure the discussions server that comes with Oracle Fusion Middleware.

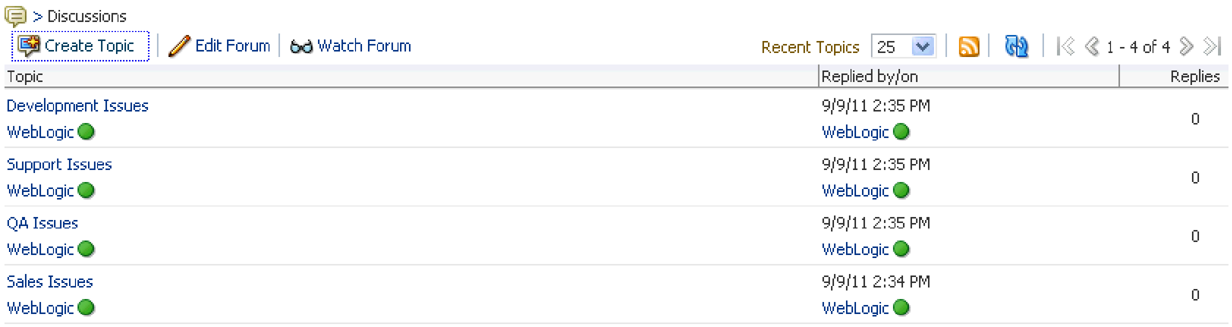
See Also: *Installation Guide for Oracle WebCenter Portal*

33.1.3 What Happens at Runtime

To create forums in Framework applications, you must be a moderator or administrator on the back-end discussions server. For more information, see the "Granting Administrator Role on the Discussions Server" section in *Administering Oracle WebCenter Portal*.

Figure 33–1 shows a discussion forum at runtime.

Figure 33–1 Discussion Forums Task Flow at Runtime



Topic	Replied by/on	Replies
Development Issues WebLogic ●	9/9/11 2:35 PM WebLogic ●	0
Support Issues WebLogic ●	9/9/11 2:35 PM WebLogic ●	0
QA Issues WebLogic ●	9/9/11 2:35 PM WebLogic ●	0
Sales Issues WebLogic ●	9/9/11 2:34 PM WebLogic ●	0

For more information about discussions at runtime, see the "Viewing and Participating in Discussions" chapter in *Using Oracle WebCenter Portal*.

33.2 Basic Configuration for Discussions

This section describes required steps for adding discussions to your application. It includes the following subsections:

- Section 33.2.1, "Setting up Connections for Discussions"
- Section 33.2.2, "Adding Discussions Functionality at Design Time"
- Section 33.2.3, "Setting Security for Discussions"

33.2.1 Setting up Connections for Discussions

You must create a connection to the discussions server in your WebCenter Portal Framework application. You can register additional Discussion Forum connections, but only one connection is active at a time.

When you create a Discussion Forum connection or set a connection as active, both announcements and discussions use this same connection. If you have an existing connection, then you can skip this section and see Section 33.2.2, "Adding Discussions Functionality at Design Time."

If you do not have an existing connection, then you must create a new Discussion Forum connection.

33.2.1.1 Discussions Connections

Discussions requires a Discussion Forum connection to the discussions server.

> **Note:** While you can set up the connections to back-end servers at design time in Oracle Developer, you can later add, delete, or modify connections in your deployed environment using Enterprise Manager Fusion Middleware Control. For more information, see *Administering Oracle WebCenter Portal*.

33.2.1.2 How to Set Up Connections for Discussions

Follow these steps to set up the discussions connection.

1. In Oracle JDeveloper, open the application in which you plan to consume discussion forums.

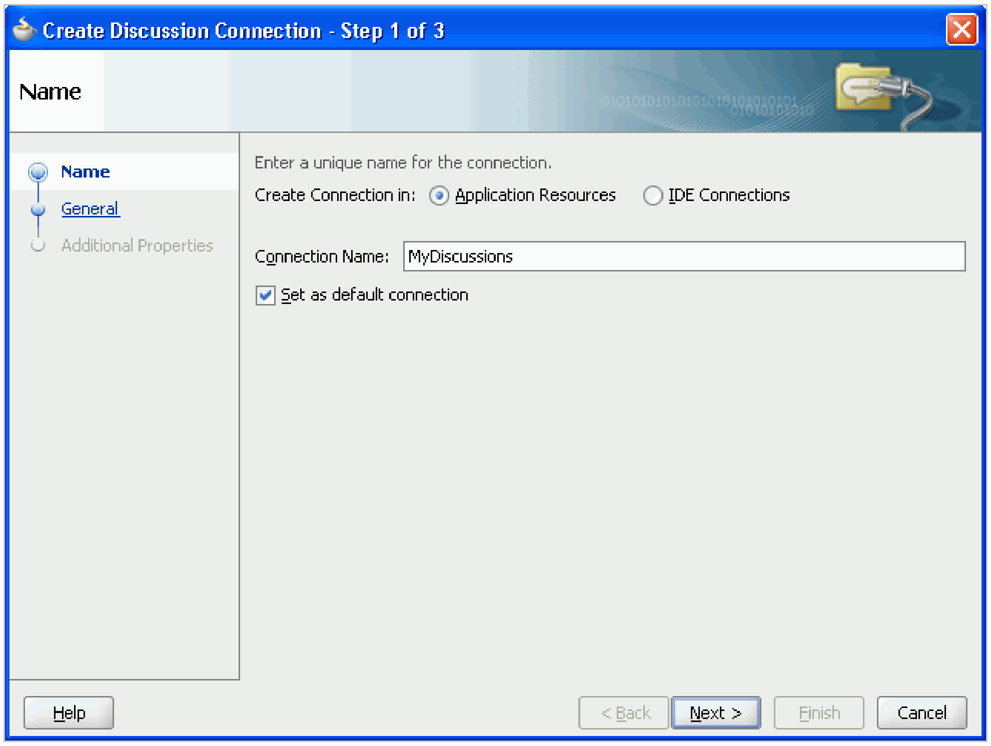
   > **Note:** If you created a Discussion Forum connection for announcements, then that is used by default for discussions. No extra configuration is required.

2. In the Application Navigator, under Application Resources, right-click **Connections**, then select the new connection **Discussion Forum** from the list.
3. On the **Name** page, select to create the connection in **Application Resources**. (A connection in Application Resources is available only for that application, while a connection in IDE Connections is available for all applications you create. If you plan to use the connection in other applications, then select IDE Connections so you do not need to re-create it.)
4. For **Connection Name**, enter a unique name; for example, `MyDiscussions`.
5. Select the **Set the default connection** check box. You can have multiple connections, but only one can be active (default). If you have different discussions

servers (for example, for each page in a portal), then do not select the checkbox, but one connection must be marked as the default connection (Figure 33–2).

Note: After you create a connection and set it as the default connection, you cannot reset it so that it is *not* the default. That is, the **Set as default connection** option cannot be unchecked. To use a different default connection, you must create a new connection and set that as the default connection.

Figure 33–2 Create Discussion Connections, Step 1



Create Discussion Connection - Step 1 of 3

Name

Enter a unique name for the connection.

Create Connection in: ● Application Resources ○ IDE Connections

Connection Name: MyDiscussions

☑ Set as default connection

6. Click **Next**.

7. On the **General** page, enter values for the required parameters:

   - `URL`: Enter the URL of the discussions server hosting discussion forums and announcements. For example: `http://discuss-example.com:8888/owc_discussions`

   - `Admin User`: The user name of your discussions server administrator; for example, `admin`. This account is used by discussions and announcements to perform administrative operations on behalf of WebCenter Portal users.

     In Portal, this account is mostly used for managing portal-related discussions and announcements. It is not necessary for this user to be a super admin. However, the user must have administrative privileges on the current root category for Portal, that is, the category (on the discussions server) under which all portal-related discussions and announcements are stored.

Note: If your Framework application does not include portal-related functionality, then the administrator's user name is not required.

---

8. Optionally, enter a value for the other parameters:

   - `Connection Timeout`: Specify a suitable timeout for the connection. This is the length of time (in seconds) the application waits for a response from the discussions server before issuing a connection timeout message. The default is -1, which means that the default is used. The default is 10 seconds.
   - `Policy URI for Authenticated Access`: Select the SAML token client policy this connection uses for authenticated access to the discussions server Web service. SAML (Security Assertion Markup Language) is an XML-based standard for passing security tokens defining authentication and authorization rights. An attesting entity (that has trust relationship with the receiver) vouches for the verification of the subject by method called sender-vouches. Options available are:

     – WSS 1.0 SAML Token Client Policy (oracle/wss10_saml_token_client_policy)

     – WSS 1.1 SAML Token With Message Protection Client Policy (oracle/wss11_saml_token_with_message_protection_client_policy)

     The client policy specified must be compatible with the service policy that is configured for the `OWCDiscussionsServiceAuthenticated` endpoint in the discussions server. Out-of-the-box, the default service policy is WSS 1.0 SAML Token Service Policy (oracle/wss10_saml_token_service_policy).

   - `Policy URI for Public Access`: Select the client policy this connection uses to enforce message security and integrity for public access to the discussions server Web service. Options available are:

     – None - This is the default setting.

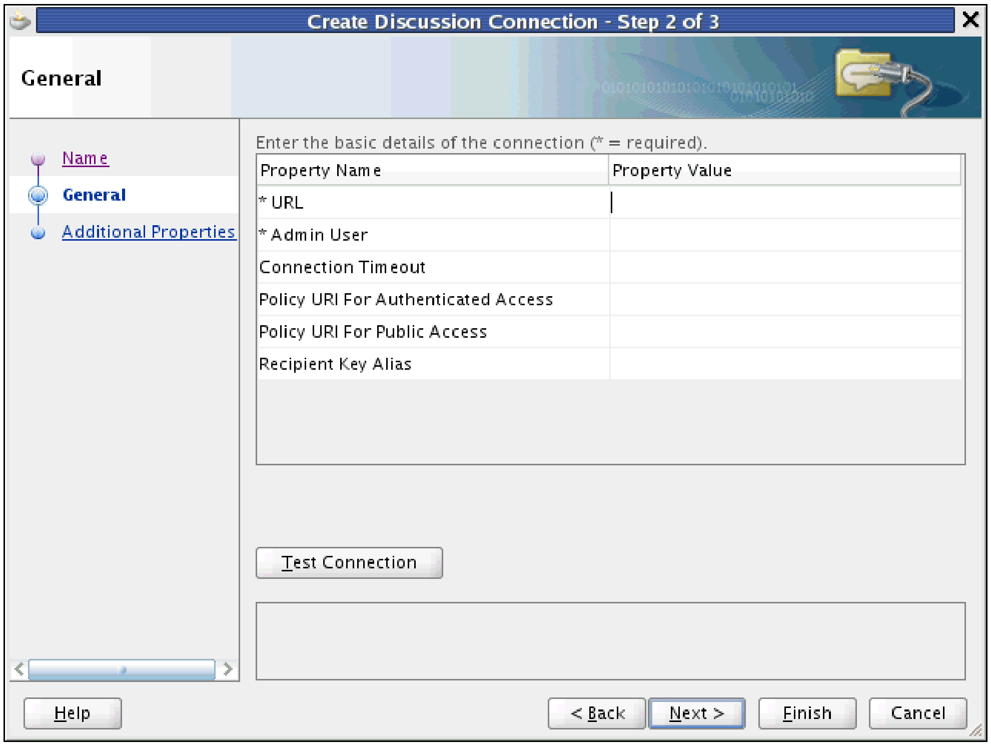
     – WSS 1.1 Message Protection Client Policy (oracle/wss11_with_message_protection_client_policy)

     The client policy specified must be compatible with the service policy that is configured for the `OWCDiscussionsServicePublic` endpoint in the discussions server. Out-of-the-box, a service policy is not configured for public access.

   - `Recipient Key Alias`: Enter the recipient key alias to be used for message protected policies (applicable to the `OWCDiscussionsServicePublic` and `OWCDiscussionsServiceAuthenticated` endpoints). This is the alias to the certificate that contains the public key of the discussions server in the configured keystore.

     For more information, see the "Configuring WS-Security" chapter in *Administering Oracle WebCenter Portal*.

Figure 33–3 Create Discussions Connection, Step 2



Create Discussion Connection - Step 2 of 3

General

Enter the basic details of the connection (* = required).

Property Name	Property Value
* URL	
* Admin User	
Connection Timeout	
Policy URI For Authenticated Access	
Policy URI For Public Access	
Recipient Key Alias	

9. Click **Test Connection**, and if it is successful, then click **Next**.

10. On the **Create Discussion Connection - Step 3 of 3** page, you can configure additional parameters.

    `application.root.category.id`: (WebCenter Portal only) The application root category ID on the discussions server under which all discussion forums are stored. For example, if set to 3, then all forums are stored inside the category 3.

    > **Note:** To encrypt property values, such as passwords, click **Add Secured Property**.

11. Click **Finish**. Your connection should now appear as a node under **Application Resources - Connections**.

33.2.2 Adding Discussions Functionality at Design Time

This section explains a basic incorporation of discussions.

33.2.2.1 Discussions Task Flows

There are several task flows (Table 33–1) to provide discussions in a form that best suits your needs.

Table 33–1 Discussions Task Flows

Task Flow	Description
Discussion Forums	This task flow displays the Discussion Forums view, which allows the user to see all the discussions and their respective replies. It also allows users to perform various operations based on their privileges. A Moderator can perform create, read, update, and delete operations on all objects. A Participant can create a topic, edit a topic that has been created by him, and reply to a topic. A Viewer can only view objects. All watched forums and topics are accessible from this task flow. The Watched Forums and Watched Topics task flows provide more focussed views of watched forums or watched topics. The parameters alter the way the view appears. For more information, see Section 33.2.2.3, "How to Modify the Discussions Task Flow Parameters."
Discussions - Popular Topics	This task flow provides a view that allows users to see the most frequently viewed topics in the application under a given category ID or forum ID. For more information, see Section 33.3.1, "Adding the Discussions - Popular Topics Task Flow."
Discussions - Recent Topics	This task flow displays a view that allows users to see all the recent topics in the application given a category ID or forum ID. For more information, see Section 33.3.2, "Adding the Discussions - Recent Topics Task Flow."
Discussions - Watched Forums	This task flow displays a view that allows users to see all of their watched forums in the application under a given category ID. For more information, see Section 33.3.3, "Adding the Discussions - Watched Forums Task Flow."
Discussions - Watched Topics	This task flow displays a view that allows users to see all their watched topics in the application under a given category ID or forum ID. For more information, see Section 33.3.4, "Adding the Discussions - Watched Topics Task Flow."
Discussions - Quick View	This task flow displays a combined view of the Popular Topics, Recent Topics, Watched Topics, and Watched Forums task flows. Instead of adding four separate task flows, this single task flow presents all four views with a dropdown list so that end users can personalize it For more information, see Section 33.3.5, "Adding the Discussions - Quick View Task Flow."

33.2.2.2 How to Add Discussions to a Page

The Discussion Forums task flow provides a complete view of your discussions. To add the Discussion Forums task flow to your Framework application, follow these steps.

1. Follow the steps described in Section 4.2.1, "How to Prepare Your Application to Consume Tools and Services" to implement security and create a new customizable page in your application.
2. Open the page on which you want to add discussions.
3. In the Resource Palette, expand **My Catalogs**, **WebCenter - Framework Services Catalog**, and **Task Flows**.

4. Drag **Discussions** from the Resource Palette and drop it onto the page.
5. When prompted, select **Region** as the way to create the task flow.
6. You may be prompted to add the discussions library to your project. If so, then click **Add Library**. This operation may take a moment to complete.
7. In the Edit Task Flow Binding dialog box, enter values for the parameters, and click **OK**. Table 33–2 describes the parameters.
8. Save and run your page.

> **Notes:** If you created a connection in IDE and not in the application, then the connection must be added to the application. For example, in the Resource Palette under IDE Connections, right-click the connection and select **Add to Application**.
>
> All instances of the Discussion Forums task flow in an application run against the same discussions server: it is unnecessary to add multiple Discussion Forums task flow instances. This is true for all task flows that require connections to back-end servers, such as task flows from announcements or mails.

The Discussion Forums main view contains some features that require other components in your application.

- For the links in the main view to work, you must have configured the Links service. For more information, see Chapter 43, "Integrating Links."
- For users' presence indicators to work, you must have configured the WebCenter Portal Presence service. For more information, see Chapter 34, "Integrating Instant Messaging and Presence."
- Oracle recommends that the discussions server and WebCenter Portal point to the same identity store. If the Framework application and the discussions page are configured to be secure, then upon logging in to the application, then discussions respects those credentials in the discussions server.

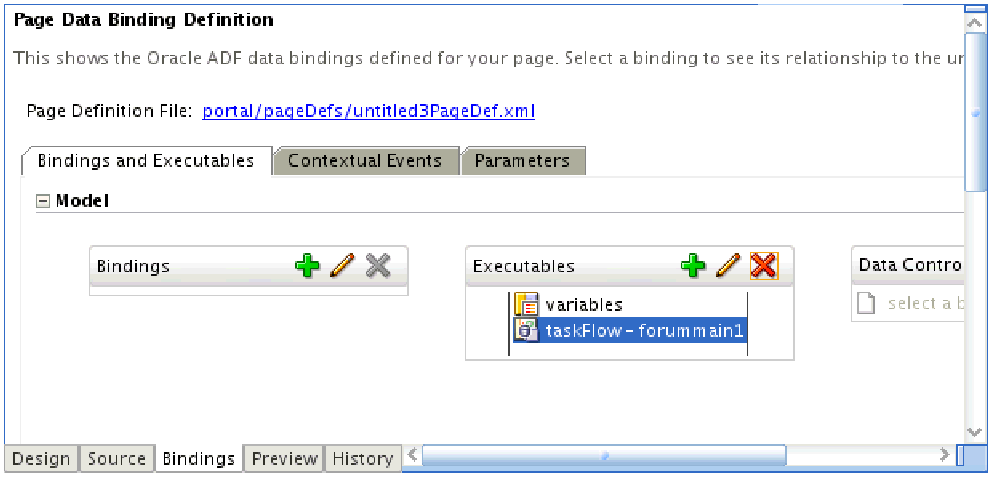
33.2.2.3 How to Modify the Discussions Task Flow Parameters

Discussions task flows have optional task flow binding parameters.

You can adjust the parameter values when you drop the task flows onto a page or after you have placed a task flow on a page:

1. Navigate to the Edit Task Flow Binding dialog by clicking the **Bindings** tab at the bottom of the page (next to the **Source** tab).
2. Under **Executables**, you'll see the task flow you added. Figure 33–4 shows an example of a Search task flow in the Executables section.

Figure 33–4 Page Data Binding Definition



Page Data Binding Definition

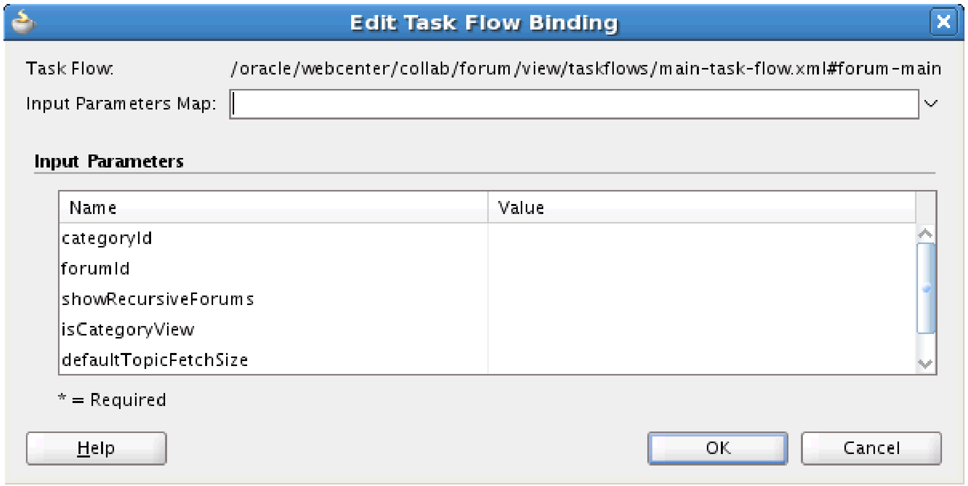
This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relationship to the ur

Page Definition File: portal/pageDefs/untitled3PageDef.xml

3. Select the task flow, and next to the Executables heading, click the **Edit selected element** (pencil) icon.

4. In the Edit Task Flow Binding dialog Figure 33–5, revise the binding parameter values as required.

Figure 33–5 Edit Task Flow Binding Dialog for Discussion Forums Task Flow



Edit Task Flow Binding

Task Flow: /oracle/webcenter/collab/forum/view/taskflows/main-task-flow.xml#forum-main

Input Parameters Map:

Input Parameters

Name	Value
categoryId	
forumId	
showRecursiveForums	
isCategoryView	
defaultTopicFetchSize	

* = Required

5. When you are finished, click **OK.**

6. Save and run your page to see the results.

Table 33–2 describes the properties that are unique to the discussions task flows.

Table 33–2 Discussions Task Flow Parameters

Property	Description	Task Flow
`categoryId`	This optional parameter is an identifier for an existing category in Oracle WebCenter Portal's Discussion Server to which the view should be scoped. When no value is supplied, it defaults to the appropriate root category of the discussions server. (This root category ID can be overridden by supplying an additional property named `application.root.category.id` in the connection.) For testing purposes, you may want to create a category through the discussions server administrator interface and then reference that category identifier here.	■ Discussion Forums ■ Discussions - Quick View ■ Popular Topics ■ Recent Topics ■ Watched Forums ■ Watched Topics
`forumId`	This parameter is an identifier for an existing forum in your discussions server for which popular topics should be fetched. If both `categoryId` and `forumId` are given, then only `categoryId` is honored.	■ Discussion Forums ■ Popular Topics ■ Recent Topics ■ Watched Topics
`disableToolbar`	This parameter indicates whether the toolbar, including the Refresh icon, should be displayed. It can be `${true}`, `${false}`, or undefined. If you leave this parameter undefined, then the default behavior (false) is to show the toolbar.	■ Popular Topics ■ Recent Topics ■ Watched Forums ■ Watched Topics
`showRecursiveForums`	This parameter determines if you show forums either in a category only or in subcategories. True means all forums under a given category/subcategory are shown; false means only the category's direct child forums are shown. The default value is false. Note: A value of true can impact performance.	Discussion Forums
`isCategoryView`	A means of showing the forums grouped under the Category ID category or the topics specified under the Forum ID forum. True means you want the task flow to display the forums classified under `categoryId`; false, the default value, means you want the task flow to display the topics associated with the specified `forumId`. This parameter value works in combination with other parameters.	Discussion Forums
`defaultTopicFetchSize`	Sets the number of visible topics	Discussion Forums
`doNotAllowSelectingPageSize`	If set to true, users are not allowed to change the number of visible topics.	Discussion Forums
`visibleTopicsFetchSize`	Sets the number of visible watched topics.	■ Recent Topics ■ Watched Topics
`visibleForumsFetchSize`	Sets the number of visible watched forums.	Watched Forums
`doNotShowMoreLink`	If set to true, the **More** link is not visible.	■ Discussions - Quick View ■ Recent Topics ■ Watched Forums ■ Watched Topics

You can customize the look and feel of **Discussion Forums** views by changing parameter values. The following combinations are possible:

> **Note:** A *bidirectional link* connects back and forth. For example, when you create a link from a discussion topic to a document, a link from the document back to the topic also is created. Similarly, when you delete the link from the discussion topic to a document, the link from the document back to the topic automatically is deleted.

- `categoryId`: This displays the forums list view if there are multiple forums. If there is only one forum, then it drills into the forum and lists all topics with a bidirectional link enabled.
- `categoryId` and `forumId`: This displays the topics list view with a bidirectional link enabled.
- `isCategoryView` is set to `true`: This displays the topics list view with a bidirectional link enabled.
- `categoryId` and `forumId` and `isCategoryView` is set to `false`: This displays the topics list view, but a bidirectional link is not enabled.
- `categoryId` and `isCategoryView` is set to `true`: This displays the forums list view if there are multiple forums. If there is only one forum, then it displays that forum with a bidirectional link enabled.
- `forumId` and `isCategoryView` is set to `false`: This displays the topics list view, but a bidirectional link is not enabled.
- `categoryId` and `isCategoryView` is set to `false`: This is similar to when `categoryId` alone is given.
- `forumId` and `isCategoryView` is set to `true`: This is similar to when `forumId` and `isCategoryView` is set to false.
- `isCategoryView` = `true` or `false`: This is ignored. It goes with the default scope (that is, all forums listed under the root category) in a Framework application.
- `forumId`: This is similar to `forumId` and `isCategoryView` is set to false.

33.2.3 Setting Security for Discussions

By default, authenticated users of WebCenter Portal applications can view and participate in discussion forums. Any user who has logged in to a WebCenter Portal application can view discussions, and users with sufficient permissions can create forums and topics. To create forums, you must be a moderator or administrator on the back-end discussions server that provides the discussions.

In an unsecured Framework application, the user identity is not propagated to the discussions server; consequently, users are identified as GUEST (that is, as anonymous users) and can view only public categories and forums.

> **Note:** *Categories* and *forums* are server-side classifications that move from *category* to *forum* to *topic*. That is, a category can head a collection of forums, just as a forum can head a collection of topics.

In a secured Framework application, discussions permissions are allotted according to an individual user's assigned user role. For example, a user can be a moderator, participant, or viewer. A forum moderator can edit and delete any topics and messages within a forum. A forum participant can create topics and edit his or her own topics. A forum viewer can view topics and messages.

In an unsecured Framework application, identity propagation cannot happen. A user is a *guest* (or *anonymous*) user who can view only public categories and forums.

In an ADF-secured Framework application, identity propagation is enabled. Based on the identity, appropriate permissions are matched and corresponding actions are enabled. The user name that you use to log in to the application is used to log in to the discussions server. The recommended approach is to have the discussions server and the application point to the same identity store. When you run the page, you are presented with a login page for user credentials. Enter the credentials with the required privileges in the discussions server.

Note: Discussions requires that the identity store be LDAP-based; that is, not file-based with `jazn-data.xml`.

ADF security is configured by default if you created your application using WebCenter Portal's Framework application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."

33.3 Advanced Information for Discussions

This section describes optional features available with discussions. It includes the following subsections:

- Section 33.3.1, "Adding the Discussions - Popular Topics Task Flow"
- Section 33.3.2, "Adding the Discussions - Recent Topics Task Flow"
- Section 33.3.3, "Adding the Discussions - Watched Forums Task Flow"
- Section 33.3.4, "Adding the Discussions - Watched Topics Task Flow"
- Section 33.3.5, "Adding the Discussions - Quick View Task Flow"
- Section 33.3.6, "Obtaining Portal RSS News Feed URL for Discussions"
- Section 33.3.7, "Using Custom Discussions APIs"
- Section 33.3.8, "Using the Discussions REST API"
- Section 33.3.9, "Troubleshooting Discussions"

33.3.1 Adding the Discussions - Popular Topics Task Flow

The Discussions - Popular Topics task flow provides a view that allows users to see the most frequently viewed discussion topics under a given category ID or forum ID.

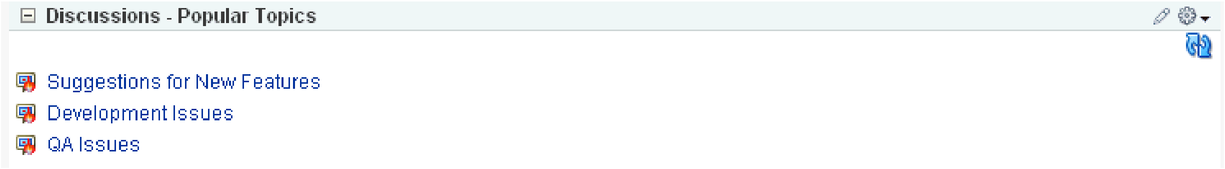
Note: Popular topics are based on topic replies. The administrator is not able to determine popularity.

To add the Discussions - Popular Topics task flow to your Framework application, follow the same instructions that you did for the Discussion Forums task flow in Section 33.2.2.2, "How to Add Discussions to a Page," but drag and drop Discussions - Popular Topics onto the page.

Table 33–2 describes the available parameters for this task flow.

Figure 33–6 shows how the Discussions - Popular Topics task flow looks at runtime.

Figure 33–6 Discussions - Popular Topics View at Runtime



Discussions - Popular Topics

Suggestions for New Features

Development Issues

QA Issues

33.3.2 Adding the Discussions - Recent Topics Task Flow

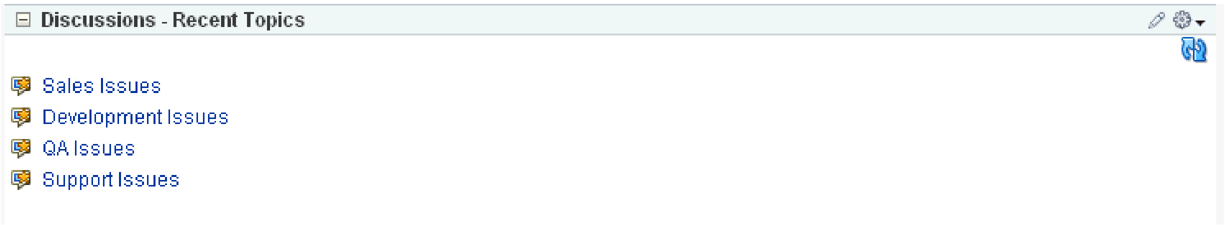
The Discussions - Recent Topics task flow displays a view that allows users to see all the recent topics (that is, topics posted within the past two days) given a category ID or forum ID.

To add the Discussions - Recent Topics task flow to your Framework application, follow the same instructions that you did for the Discussion Forums task flow in Section 33.2.2.2, "How to Add Discussions to a Page," but drag and drop Discussions - Recent Topics onto the page.

Table 33–2 describes the available parameters for this task flow.

Figure 33–7 shows how the Discussions - Recent Topics task flow looks at runtime. To view a topic post, simply click the relevant topic.

Figure 33–7 Discussions - Recent Topics View at Runtime



Discussions - Recent Topics

Sales Issues

Development Issues

QA Issues

Support Issues

33.3.3 Adding the Discussions - Watched Forums Task Flow

The Discussions - Watched Forums task flow displays a view that allows users to see all of their watched forums under a given category ID.

You can watch discussion forums and topics to keep a close eye on the information most current and relevant to your efforts. The forums and topics you select to watch are personal, in that your selections appear on your view of watch lists. No other user is affected by the forums and topics you choose to watch.

When a user places a watch on a forum or a topic, in addition to it appearing in their watched forums or topics list, the user receives an mail notification whenever other users add to that forum or topic.

All watched forums and topics are accessible from the Forums task flow. The Watched Forums and Watched Topics task flows provide more focussed views of watched forums or watched topics.

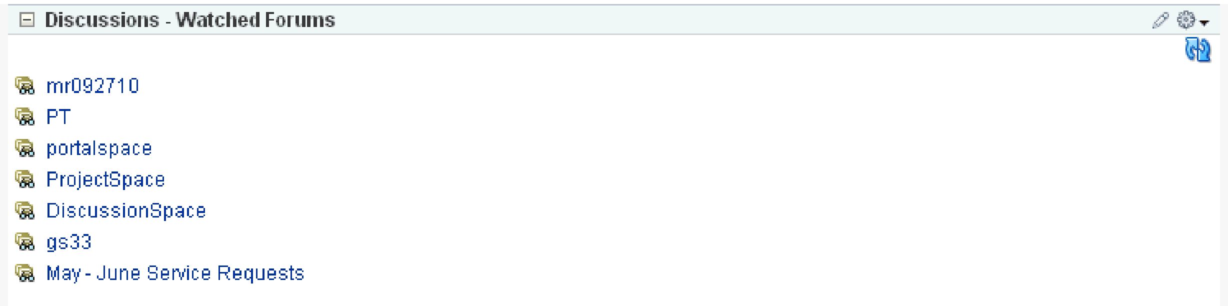
To add the Discussions - Watched Forums task flow to your Framework application, follow the same instructions that you did for the Discussion Forums task flow in Section 33.2.2.2, "How to Add Discussions to a Page," but drag and drop Discussions -

Watched Forums onto the page.

Table 33–2 describes the available parameters for this task flow.

Figure 33–8 shows how the Discussions - Watched Forums task flow looks at runtime.

Figure 33–8 Discussions - Watched Forums View at Runtime



Discussions - Watched Forums

- mr092710
- PT
- portalspace
- ProjectSpace
- DiscussionSpace
- gs33
- May - June Service Requests

For information on how to watch a forum or topic at runtime, see the "Working with Discussions" chapter in *Using Oracle WebCenter Portal.*

33.3.4 Adding the Discussions - Watched Topics Task Flow

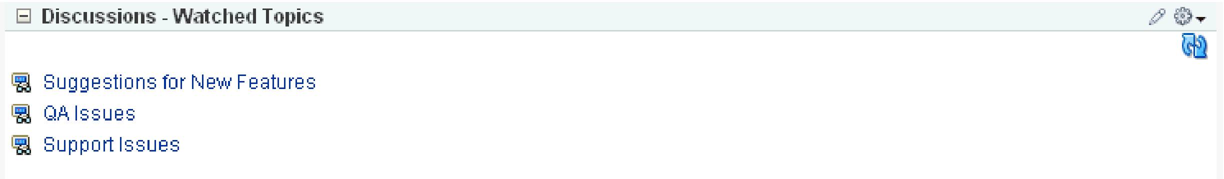
Similar to the Discussions - Watched Forums task flow, the Discussions - Watched Topics task flow displays a view that allows users to see all their watched topics under a given category ID or forum ID.

To add the Discussions - Watched Topics task flow to your Framework application, follow the same instructions that you did for the Discussion Forums task flow in Section 33.2.2.2, "How to Add Discussions to a Page," but drag and drop Discussions - Watched Topics onto the page.

Table 33–2 describes the available parameters for this task flow.

Figure 33–9 shows how the Discussions - Watched Topics task flow looks at runtime.

Figure 33–9 Discussions - Watched Topics View at Runtime



Discussions - Watched Topics

- Suggestions for New Features
- QA Issues
- Support Issues

For information on how to watch a forum or topic at runtime, see the "Working with Discussions" chapter in *Using Oracle WebCenter Portal.*

33.3.5 Adding the Discussions - Quick View Task Flow

The Discussions - Quick View task flow displays a combined view of the Popular Topics, Recent Topics, Watched Topics, and Watched Forums task flows. Instead of adding four separate task flows, this single task flow presents all four views with a dropdown list so that end users can personalize it.

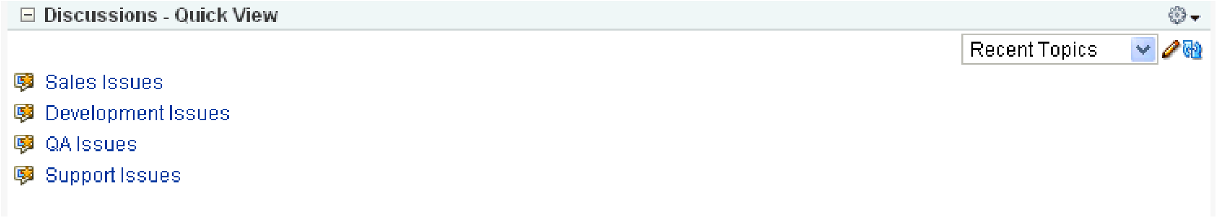
By default, Watched Topics are displayed. This task flow takes only one parameter: `categoryId`.

To add the Discussions - Quick View task flow to your WebCenter Portal Framework application, follow the same instructions that you did for the Discussion Forums task flow in Section 33.2.2.2, "How to Add Discussions to a Page," but drag and drop Discussions - Quick View onto the page.

Table 33–2 describes the available parameters for this task flow.

Figure 33–10 shows how the Discussions - Quick View task flow looks at runtime.

Figure 33–10 Discussions - Quick View at Runtime



33.3.6 Obtaining Portal RSS News Feed URL for Discussions

You can expose portal functionality in a Framework application. Your Framework application users can find out what is happening in a specific portal through RSS news feeds.

Configure RSS news feeds for discussions to enable users to view portal discussions from within a Framework application. To obtain the portal RSS news feed URL for discussions, use either of the following WebCenter Portal API methods:

- `getServiceRSSFeedURL`
- `getServiceRSSFeedURLbyGuid`

To obtain an RSS feed URL, you must identify the portal (by name or GUID) and specify the component required (by service ID). The service ID for discussions is `GroupSpaceWSClient.DISCUSSION_SERVICE_ID`.

For information about how to use these methods, see Section 56.1.5.3.9, "Retrieving RSS Feed URLs for WebCenter Portal Tools and Services."

33.3.7 Using Custom Discussions APIs

The back-end discussions server includes APIs to further customize your application. To learn more about them, see the Jive Forums documentation on the Oracle Fusion Middleware documentation library (in the WebCenter Portal product area).

33.3.8 Using the Discussions REST API

WebCenter Portal provides a REST API to support discussions. Use the discussions REST API to post, read, update, and delete discussion forums, topics, and messages.

This section describes the REST API methods associated with discussions. It includes the following subsections:

- Section 33.3.8.1, "Discussions Entry Point"
- Section 33.3.8.2, "Discussions Resource Type Taxonomy"
- Section 33.3.8.3, "Security Considerations"
- Section 33.3.8.4, "Discussions Resource Types"

For an introduction to the REST APIs, see Chapter 53, "Using Oracle WebCenter Portal REST APIs."

33.3.8.1 Discussions Entry Point

Each REST service has a link element within the Resource Index that provides the entry point for that service. To find the entry point for discussions, find the link element with a `resourceType` of:

```
urn:oracle:webcenter:discussions:forums
```

The corresponding `href` or `template` element provides the URI entry point. The client sends HTTP requests to this entry point to work with discussions.

For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index."

For more information about resource types, see Section 53.5.2.1, "Resource Type."

33.3.8.2 Discussions Resource Type Taxonomy

When the client has identified the entry point, it can then navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 53.5.2.1, "Resource Type."

The taxonomy for discussions is:

```
urn:oracle:webcenter:discussions:forums
   urn:oracle:webcenter:discussions:forum
   urn:oracle:webcenter:discussions:forum:topics
      urn:oracle:webcenter:discussions:forum:topic
      urn:oracle:webcenter:discussions:forum:topic:messages
         urn:oracle:webcenter:discussions:forum:topic:message
```

Beyond the service entry points, URL templates allow clients to pass query parameters to customize their requests and control the form of returned data.

Collection resources in the discussions resources support pagination (`startIndex` and `itemsPerPage`). Other query parameters are not supported (that is, `search` and `projection`).

33.3.8.3 Security Considerations

There are no specific security considerations for discussions. For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

33.3.8.4 Discussions Resource Types

This section provides the information about each resource type. It includes the following subsections:

- Section 33.3.8.4.1, "urn:oracle:webcenter:discussions:forums"
- Section 33.3.8.4.2, "urn:oracle:webcenter:discussions:forum"
- Section 33.3.8.4.3, "urn:oracle:webcenter:discussions:forum:topics"
- Section 33.3.8.4.4, "urn:oracle:webcenter:discussions:forum:topic"
- Section 33.3.8.4.5, "urn:oracle:webcenter:discussions:forum:topic:messages"
- Section 33.3.8.4.6, "urn:oracle:webcenter:discussions:forum:topic:message"

33.3.8.4.1 urn:oracle:webcenter:discussions:forums Use this resource type to identify the URI to use to read (GET) and write (POST) discussion forums. The response from a GET operation includes each forum in this collection of forums, and each forum includes links used to operate on that forum. The response from a POST operation includes the forum that was created in this collection of forums and a link to operate on that forum.

Navigation Paths to forums

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   forums

resourceindex
   spaces
      spaces:resourceindex
         spaces:forums
```

Supported Methods for forums

The following methods are supported by this resource:

- GET
  - **request - body:** none, **Parameters**: startIndex, itemsPerPage (pagination)
  - **response - body:** forums
- POST
  - **request - body:** forum
  - **response - body:** forum

Note that the number of forums displayed per page defaults to 10. For more information, see Section 53.5.2.5, "Templates."

Resource Types Linked to From forums

Table 33–3 lists the resource types that the client can link to from this resource.

Table 33–3 Related Resource Types for forums

rel	resourceType
self	urn:oracle:webcenter:discussions:forums
	urn:oracle:webcenter:discussions:forum

33.3.8.4.2 urn:oracle:webcenter:discussions:forum Use this resource type to identify the URI to use to read (GET), update (PUT), and delete (DELETE) a specific discussion forum. The response from a GET operation includes the specific forum identified by the URI. The response from a PUT operation includes the modified version of the forum identified by the URI. The response from a DELETE operation is a 204.

Navigation Paths to forum

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   forums
      forum
```

```
resourceindex
   spaces
      spaces:resourceindex
         spaces:forums
            forum

resourceindex
   activities
      forum
```

Supported Methods for forum

The following methods are supported by this resource:

- GET
  - **request - body:** none
  - **response - body:** forum
- PUT
  - **request - body:** forum
  - **response - body:** forum
- DELETE
  - **request - body:** none
  - **response - body:** none

Writable Elements for forum

Table 33–4 lists the writable elements for this resource.

Table 33–4 Writable Elements for forum

Element	Type	Required	Constraints	Description
`name`	String	Yes	1 or more characters	Name of the forum
`displayName`	String	No	1 or more characters	Name used in presentation
`description`	String	No	1 or more characters	Description of the forum

Read-only Elements for forum

Table 33–5 lists the read-only elements for this resource.

Table 33–5 Read-only Elements for forum

Element	Type	Description
`id`	Integer	ID of the forum
`parentId`	Integer	ID of the parent category
`createdBy`	String	ID of the user that created the forum
`author`	personReference	User information about the user that created the forum, including GUID, ID, display name, and a link to the profile icon (same user as `createdBy`)
`createdOn`	Date	Date on which the forum was created

Table 33–5 (Cont.) Read-only Elements for forum

Element	Type	Description
`updatedBy`	String	ID of the user that performed the last modification
`modifiedBy`	personReference	User information about the user that performed the last modification, including GUID, ID, display name, and a link to the profile icon (same user as `updatedBy`)
`updatedOn`	Date	Date on which the forum was last modified
`webUrl`	String	URL for direct access to the discussions server
`topicCount`	Integer	Number of topics
`messageCount`	Integer	Number of messages
`locked`	Boolean	True if this forum is locked
`favorite`	Boolean	True if this forum is marked as a favorite

Resource Types Linked to From forum

Table 33–6 lists the resource types that the client can link to from this resource.

Table 33–6 Related Resource Types for forum

rel	resourceType
self	`urn:oracle:webcenter:discussions:forum` `urn:oracle:webcenter:discussions:forum:topics`

33.3.8.4.3 urn:oracle:webcenter:discussions:forum:topics Use this resource type to identify the URI to use to read (`GET`) and write (`POST`) discussion topics. The response from a `GET` operation includes each topic in this collection of topics, and each topic includes links used to operate on that topic. The response from a `POST` operation includes the topic that was created in this collection of topics and a link to operate on that topic.

Navigation Paths to topics

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   forums
      topics

resourceindex
   spaces
      spaces:resourceindex
         spaces:forums
            topics
```

Supported Methods for topics

The following methods are supported by this resource:

- `GET`
  - **request - body:** none, **Parameters:** `startIndex`, `itemsPerPage` (pagination)
  - **response - body:** topics

- POST
  - **request - body:** topic
  - **response - body:** topic

For more information, see Section 53.5.2.5, "Templates."

Resource Types Linked to From topics

Table 33–7 lists the resource types that the client can link to from this resource.

Table 33–7 Related Resource Types for topics

rel	resourceType
self	`urn:oracle:webcenter:discussions:forum:topics` `urn:oracle:webcenter:discussions:forum:topic`

33.3.8.4.4 urn:oracle:webcenter:discussions:forum:topic Use this resource type to identify the URI to use to read (`GET`), update (`PUT`), and delete (`DELETE`) a specific discussion topic. The response from a `GET` operation includes the specific topic identified by the URI. The response from a `PUT` operation includes the modified version of the topic identified by the URI. The response from a `DELETE` operation is a 204.

Navigation Paths to topic

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   forums
      topics
         topic

resourceindex
   spaces
      spaces:resourceindex
         spaces:forums
            topics
               topic

resourceindex
   activities
      topicT
```

Supported Methods for topic

The following methods are supported by this resource type:

- GET
  - **Request—Body:** none
  - **Response—Body:** topic
- PUT
  - **Request—Body:** topic
  - **Response—Body:** topic
- DELETE
  - **Request—Body:** none

- **Response—Body:** none

Writable Elements for topic

Table 33–8 lists the writable elements for this resource type.

Table 33–8 Writable Elements for topic

Element	Type	Required	Constraints	Description
`subject`	String	Yes	1 or more characters	Subject of the topic
`body`	String	No	0 or more characters	Contents of the topic

Read-only Elements for topic

Table 33–9 lists the read-only elements for this resource type.

Table 33–9 Read-only Elements for topic

Element	Type	Description
`id`	Integer	Identifier for the topic
`parentId`	Integer	Identifier for the parent message
`forumId`	Integer	Identifier for the forum under which this topic is posted
`topicId`	Integer	Identifier for the topic under which this topic is posted
`createdBy`	String	ID of the user who created the topic
`author`	personReference	User information about the user who created the topic, including GUID, ID, display name, and a link to the profile icon (same user as `createdBy`)
`createdOn`	Date	Date on which the topic was created
`updatedBy`	String	User who lasted updated the topic
`updatedOn`	Date	Date on which the topic was last updated
`webUrl`	String	URL for direct access to the discussions server
`depth`	Integer	Depth in the hierarchy of messages
`messageCount`	Integer	Number of child messages under this topic
`numberOfReplies`	Integer	Number of replies to this topic
`favorite`	Boolean	Whether the topic is marked as a favorite for the user
`locked`	Boolean	Whether the topic is locked
`hidden`	Boolean	Whether the topic is hidden
`hasAttachment`	Boolean	Whether the topic has attachments

Resource Types Linked to From topic

Table 33–10 lists the resource types that the client can link to from this resource.

Table 33–10 Related Resource Types for topic

rel	resourceType
self	urn:oracle:webcenter:discussions:forum:topic
	urn:oracle:webcenter:discussions:forum:topic:messages

33.3.8.4.5 urn:oracle:webcenter:discussions:forum:topic:messages Use this resource type to identify the URI to use to read (`GET`) and write (`POST`) discussion topic messages. The response from a `GET` operation includes each message in this collection of messages, and each message includes links used to operate on that message. The response from a `POST` operation includes the message that was created in this collection of messages and a link to operate on that message.

Navigation Paths to messages

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   forums
      topics
         messages

resourceindex
   spaces
      spaces:resourceindex
         spaces:forums
            topics
               messages
```

Supported Methods for messages

The following methods are supported by this resource:

- `GET`
  - **request - body:** none, **Parameters:** `startIndex`, `itemsPerPage` (pagination)
  - **response - body:** messages
- `POST`
  - **request - body:** message
  - **response - body:** message

For more information, see Section 53.5.2.5, "Templates."

Resource Types Linked to From messages

Table 33–11 lists the resource types that the client can link to from this resource.

Table 33–11 Related Resource Types for messages

rel	resourceType
self	urn:oracle:webcenter:discussions:forum:topic:messages
	urn:oracle:webcenter:discussions:forum:topic:message

33.3.8.4.6 urn:oracle:webcenter:discussions:forum:topic:message Use this resource type to identify the URI to use to read (`GET`), update (`PUT`), and delete (`DELETE`) a specific discussion topic message. The response from a `GET` operation includes the specific message identified by the URI. The response from a `PUT` operation includes the modified version of the message identified by the URI. The response from a `DELETE` operation is a 204.

Navigation Paths to message

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   forums
      topics
         messages
            message

resourceindex
   spaces
      spaces:resourceindex
         spaces:forums
            topics
               messages
                  message
```

Supported Methods for message

The following methods are supported by this resource:

- `GET`
  - **request - body:** none
  - **response - body:** message
- `PUT`
  - **request - body:** message
  - **response - body:** message
- `DELETE`
  - **request - body:** none
  - **response - body:** none

Writable Elements for message

Table 33–12 lists the writable elements for this resource.

Table 33–12 Writable Elements for message

Element	Type	Required	Constraints	Description
`subject`	String	Yes	1 or more characters	Subject of this message
`body`	String	No	0 or more characters	Content of this message

Read-only Elements for message

Table 33–13 lists the read-only elements for this resource.

Table 33–13 Read-only Elements for message

Element	Type	Description
id	Integer	ID of the message
parentId	Integer	ID of the parent message
forumId	Integer	ID of the forum under which the message is posted
topicId	Integer	ID of the topic under which the message is posted
createdBy	String	ID of user that created the message
author	personReference	User information about the user that created the message, including GUID, ID, display name and a link to the profile icon (same user as createdBy)
createdOn	Date	Date on which the message was created
updatedBy	String	User that performed the last modification
updatedOn	Date	Date on which the message was last modified
webUrl	String	URL for direct access to the discussions server
depth	Integer	Depth in the hierarchy of messages
messageCount	Integer	Number of messages
numberOfReplies	Integer	Number of replies to this message
hidden	Boolean	True if this message is hidden
hasAttachment	Boolean	True if this message has attachments

Resource Types Linked to From message

Table 33–14 lists the resource types that the client can link to from this resource.

Table 33–14 Related Resource Types for message

rel	resourceType
self	urn:oracle:webcenter:discussions:forum:topic:message
	urn:oracle:webcenter:discussions:forum:topic:messages

33.3.9 Troubleshooting Discussions

This section describes common problems and solutions for discussions.

Problem

It can take several minutes to fetch data from recursive forums. For example, if you drop the Discussions task flow on the page with the categoryId and forumId parameters left blank and you set the showrecursive parameter to ${'true'}, then it could take several minutes to scroll through all the forums.

Solution

The option to show recursive forums is not recommended for performance reasons.

Problem

Users can log on to the Framework application but cannot log on to the discussions server.

Solution

Make sure that discussions server is configured to use the same identity store as the Framework application. Contact your administrator for details. For information about configuring the identity store, see the "Configuring the Identity Store" section in *Administering Oracle WebCenter Portal*.

Problem

When you access a discussions forum from your Framework application, the following error message is displayed:

```
No default or active connection available for: Discussion Forum
```

Solution

Ensure the following:

- Ensure that you have created a Discussion Forum connection.
- Ensure the required Discussion Forum connection is marked as the default connection.

Problem

While performing certain operations on Discussions Forums task flows, you encounter error messages like "Forum not found" or "Topic not found."

Solution

Check the following:

- Ensure that the discussions server is up and running.
- Ensure the forum or topic exist on the discussions server.
- Ensure that you have the required privileges for the forum or topic that you are editing.

If all of these settings are fine and the problem persists, contact your administrator for details.

Problem

If you change the connection to use a different discussions server, and if you change the application root category ID from administrator-services-discussions, then you could see exceptions like, "Category Not Found."

Solution

Restart the managed server on which the Framework application is deployed.

34

Integrating Instant Messaging and Presence

This chapter explains how to integrate instant messaging and presence (IMP) in a Portal Framework application at design time.

This chapter includes the following topics:

- Section 34.1, "Introduction to Instant Messaging and Presence"
- Section 34.2, "Basic Configuration for IMP"
- Section 34.3, "Advanced Information for IMP"

For more information about managing and including instant messaging and presence, see:

- the "Managing Instant Messaging and Presence" chapter in *Administering Oracle WebCenter Portal*
- the "Using Instant Messaging and Presence Viewer" chapter in *Using Oracle WebCenter Portal*

34.1 Introduction to Instant Messaging and Presence

Instant messaging and presence (IMP) enables users to observe the presence status (online, offline, busy, or away) of other authenticated application users. It provides instant access to interaction options, such as instant messages and mails. Additionally, if your enterprise presence is unavailable (for example, when you are traveling), you can connect to a third-party network presence service, such as Yahoo! Messenger.

Tools and services within WebCenter Portal that have user names with the same identity can integrate with IMP; for example, discussions, documents, or mail.

This section provides an overview of IMP features and requirements. It includes the following subsections:

- Section 34.1.1, "Understanding Instant Messaging and Presence"
- Section 34.1.2, "Requirements for Instant Messaging and Presence"

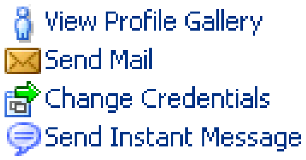
34.1.1 Understanding Instant Messaging and Presence

Figure 34–1 shows the Presence icon indicating a user who is online.

Figure 34–1 Presence Icon (Online)

Wherever a user is indicated, for example as the author of a document in the document library, you can click the icon to invoke a context menu (Figure 34–2).

Figure 34–2 Presence Icon Context Menu



The context menu can include the following actions:

- View Profile (This opens the selected user's profile page, with information such as mail ID and contact numbers.)
- Send Mail (This opens a compose window for the mail client set, either WebCenter Portal's Mail or a local mail client.)
- Change Credentials (This works as an alternative to using an external application, visible only to the current user.)
- Send Instant Message (This opens the instant message client running on the computer, Microsoft Communicator.)

Next to a contact name is an icon that indicates the presence state of each contact.

For detailed information about IMP at runtime, including screen shots and descriptions of the presence status options, see the "Using Instant Messaging and Presence Viewer" chapter in *Using Oracle WebCenter Portal*.

34.1.2 Requirements for Instant Messaging and Presence

IMP requires a back-end presence server. WebCenter Portal is certified with Microsoft Office Live Communications Server (LCS) 2005, Microsoft Office Communications Server (OCS) 2007, and Microsoft Lync 2010.

> **Note:** Oracle Beehive Server connections are not supported in this release.

34.2 Basic Configuration for IMP

This section describes the steps required for adding IMP to your application. It includes the following subsections:

- Section 34.2.1, "Setting up Connections for IMP"
- Section 34.2.2, "Adding IMP Functionality at Design Time"
- Section 34.2.3, "Setting Security for IMP"

34.2.1 Setting up Connections for IMP

After the presence server is properly installed and running, you must add a connection to it. This section describes how. It includes the following subsections:

- Section 34.2.1.1, "Instant Messaging and Presence Connections"
- Section 34.2.1.2, "How to Set Up Microsoft LCS Connections for IMP"

- Section 34.2.1.3, "How to Set Up Microsoft OCS and Microsoft Lync Connections for IMP"

34.2.1.1 Instant Messaging and Presence Connections

Instant Messaging and Presence requires an **Instant Messaging and Presence** connection to the presence server (Microsoft LCS, Microsoft OCS, or Microsoft Lync).

When WebCenter Portal interacts with an application that handles its own authentication, you can associate that application with an external application definition to allow for credential provisioning. An external application is mandatory.

> **Note:** While you can set up the connections to back-end servers at design time in Oracle JDeveloper, you can later add, delete, or modify connections in your deployed environment using Fusion Middleware Control. For more information, see *Administering Oracle WebCenter Portal*.

34.2.1.1.1 Mapping User Names to IM Addresses The im.address.resolver.class handles the resolver implementation used to map user names to IM addresses and IM addresses to user names. This implementation looks for IM addresses in the following places and order:

1. User Preferences - If the user has entered his or her IM address in the Presence Preferences page, then the user's IM address is found in the user's preferences.
2. User Credentials - If an external application is configured, then an account field provides the user's IM address.
3. User Profiles - If the user has not supplied preferences and WebCenter Portal cannot fetch the IM address from the external application, then WebCenter Portal reads the IM address from LDAP (that is, the user's profile). The default LDAP property read is the BUSINESS_EMAIL attribute. Users can change this default with im.address.profile.attribute.

To use your own resolver implementation, extend from IMPAddressResolver class and implement two methods: resolveAddress and resolveUsername.

- The resolveAddress method takes in user name and returns the corresponding IM address.
- The resolveUsername method takes in the IM address and returns the corresponding user name.

To plug in the new resolver class, change the property im.address.resolver.class from the default oracle.webcenter.collab.rtc.IMPAddressResolverImpl to your resolver implementation. Example 34–1 shows a sample IMPAddressResolver implementation, where the resolver appends the domain string @example.com to the user name to construct the address and removes the same domain string from the address to construct the user name.

Example 34–1 Resolver Implementation

```
public class SampleAddressResolver extends IMPAddressResolver
{
  private String DOMAIN = "@example.com";

  public SampleAddressResolver()
  {
    super();
  }

  //Append DOMAIN to the username to construct the IM address
  public String resolveAddress(String username)
  {
    String imAddress = username;
    if(!imAddress.endsWith(DOMAIN))
    {
      imAddress = imAddress + DOMAIN;
    }

    return imAddress;
  }

  //Remove DOMAIN from the IM address to construct the username
  public String resolveUsername(String imAddress)
  {
    String username = imAddress;
    if(username.endsWith(DOMAIN))
    {
      int index = username.indexOf(DOMAIN);
      username = username.substring(0, index);
    }

    return username;
  }
}
```

> **See Also:** The "setIMPServiceProperty" section in the *WebLogic Scripting Tool Command Reference*

34.2.1.2 How to Set Up Microsoft LCS Connections for IMP

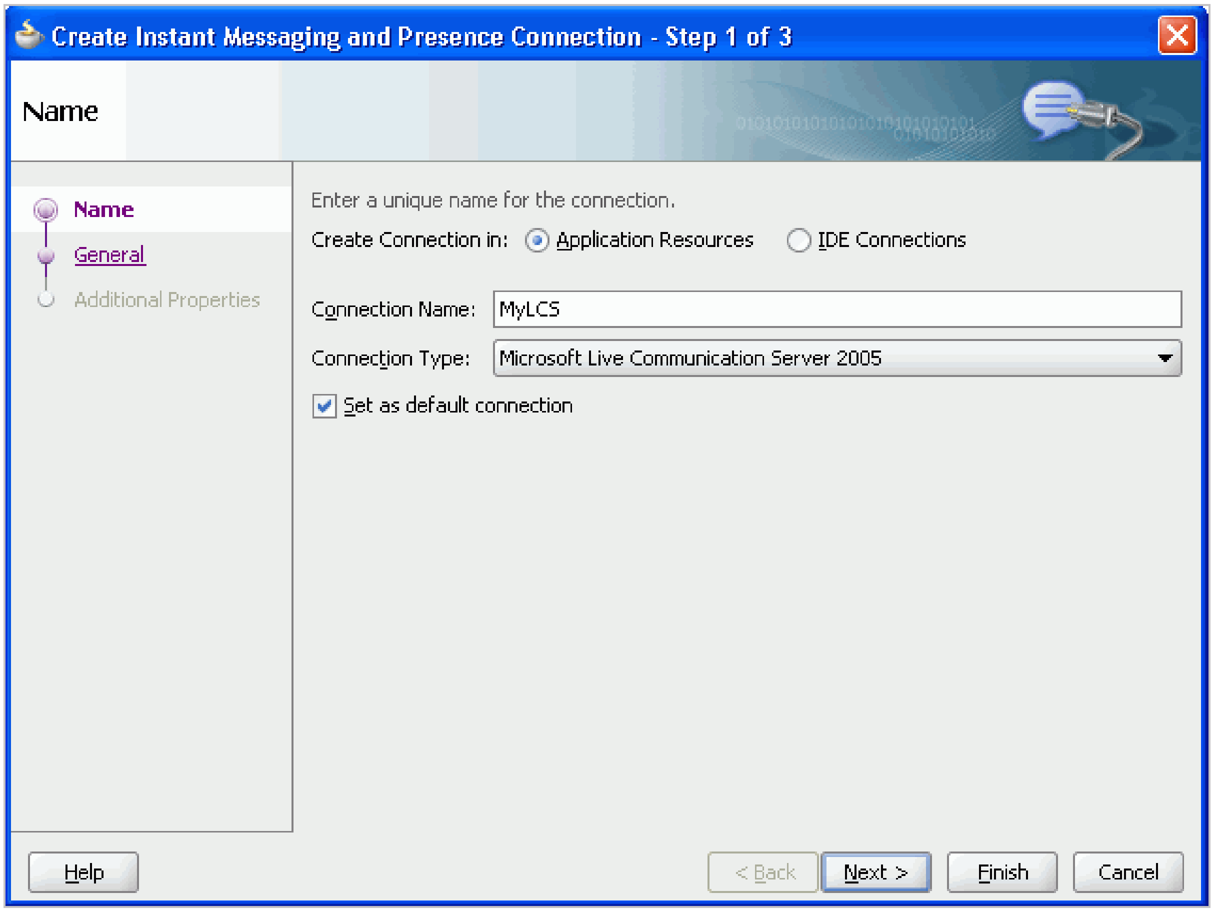
To set up the connection to the LCS presence server:

1. In Oracle JDeveloper, open the application in which to consume instant messaging and presence.
2. In the Application Navigator, under Application Resources, right-click **Connections**, then select **Instant Messaging and Presence** from the list.
3. In the Create Instant Messaging and Presence connection dialog box, select to create the connection in **Application Resources**.

   A connection in Application Resources is available only for that application, while a connection in IDE connections is available for all applications you create. If you plan to use the connection in other applications, then select IDE connections to avoid having to re-create it.
4. On the **Name** page, for **Connection Name**, enter a unique name for your connection.

   No other connection should have the same name.
5. From the **Connection Type** list, select **Microsoft Live Communication Server 2005**.
6. Select the **Set as default connection** checkbox to use this as the default connection, as shown in Figure 34–3.

Figure 34–3 Create LCS Instant Messaging and Presence Connection, Step 1



Enter a unique name for the connection.

Create Connection in: ● Application Resources ○ IDE Connections

Connection Name: MyLCS

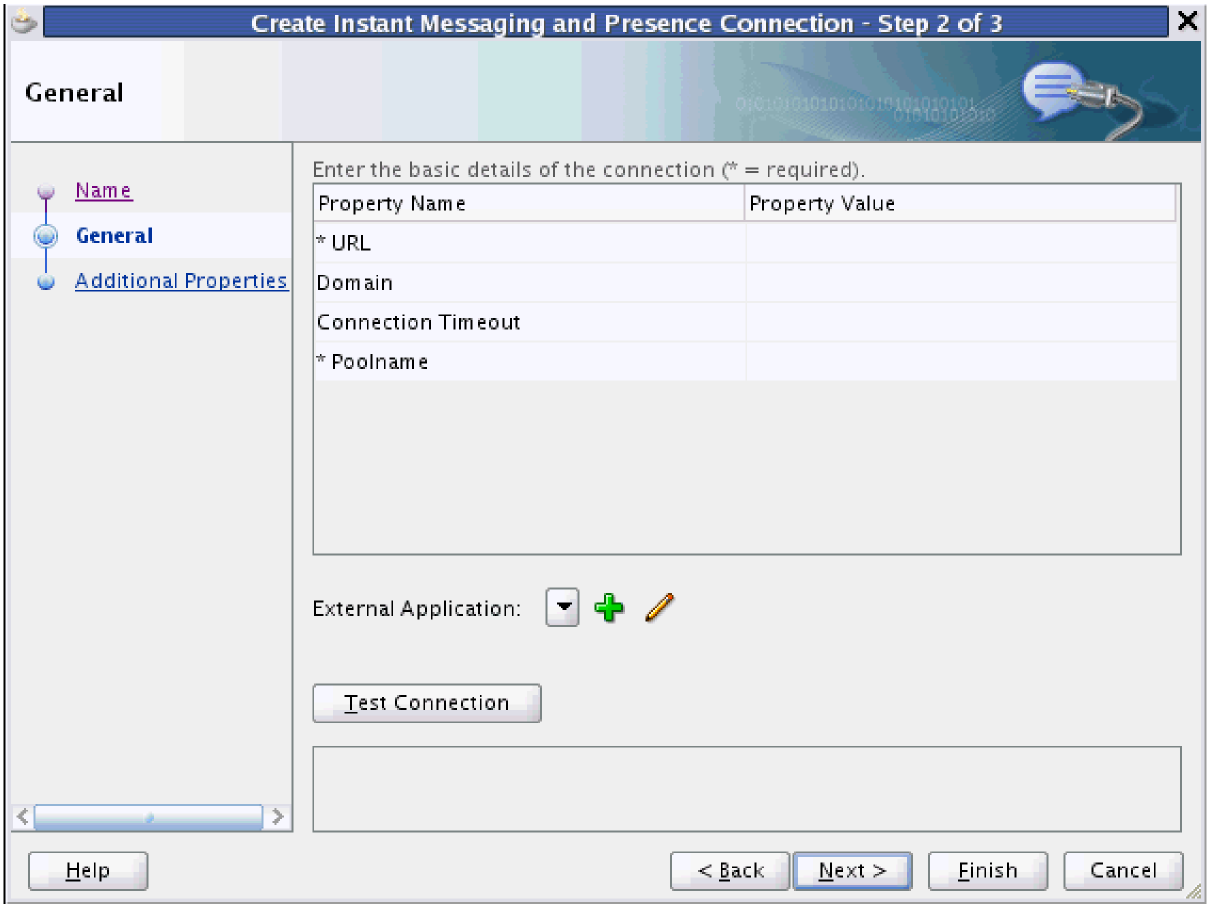
Connection Type: Microsoft Live Communication Server 2005

☑ Set as default connection

7. Click **Next**

8. On the **General** page (Figure 34–4), enter the information for your Microsoft LSC instance.

Figure 34–4 Create LCS Instant Messaging and Presence Connection, Step 2



Create Instant Messaging and Presence Connection - Step 2 of 3

General

Enter the basic details of the connection (* = required).

Property Name	Property Value
* URL	
Domain	
Connection Timeout	
* Poolname	

For example:

- The Url could be http://host:port/RTC where RTC is the virtual directory name under which the server side module is deployed. (See the Microsoft Live Communications Server 2005 documentation for more information.)
- The Domain property is maintained for backward compatibility. It should be left blank.
- The Connection Timeout property is optional. It represents the time (in seconds) WebCenter Portal should wait for the server to respond while making the connection. If the presence server does not respond in the given time, then it aborts the connection and reports an error.
- For PoolName, enter the name of the pool under which Microsoft Communications Server components are deployed. (See the Microsoft Live Communications Server documentation for more information.)

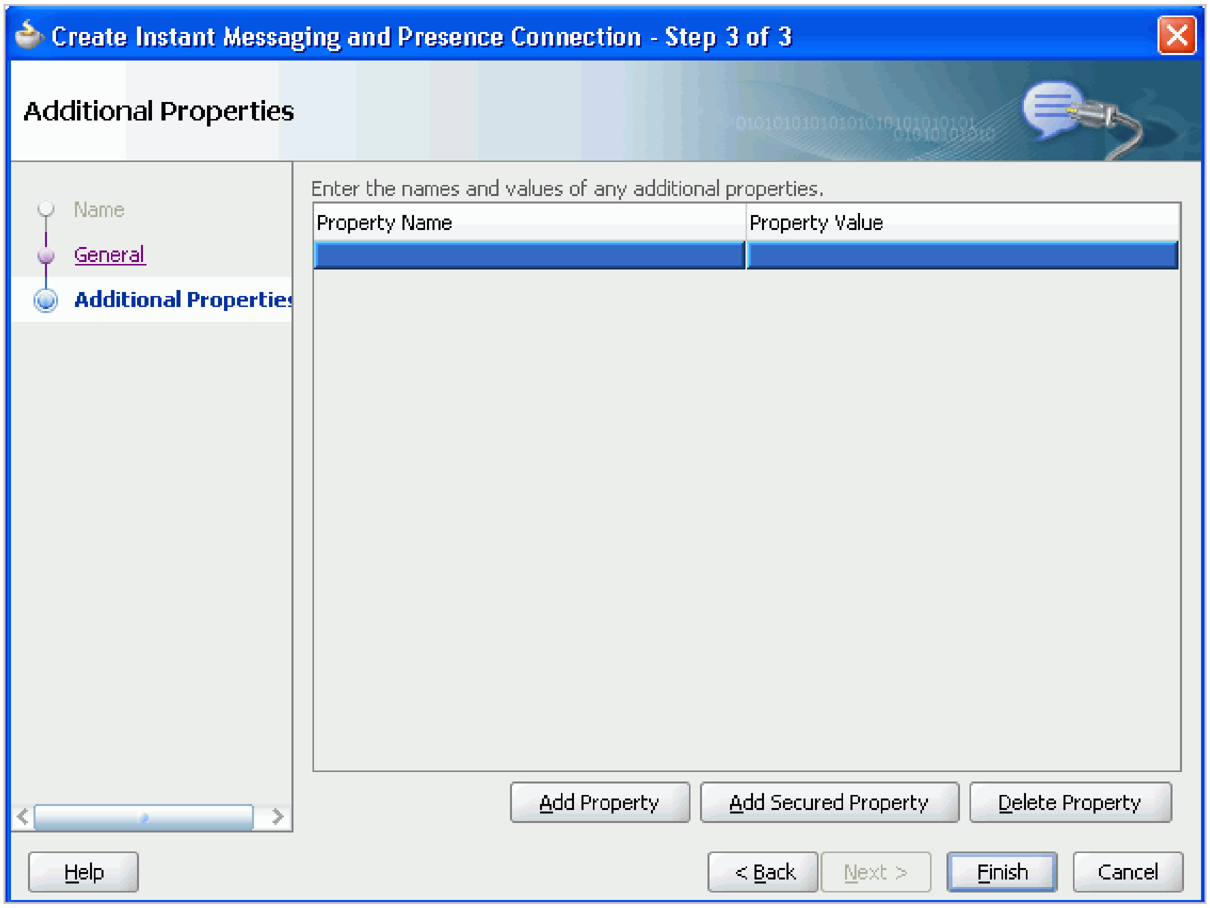
9. On the same page, select an **External Application** to leverage the authentication mechanism (user names and passwords) on the presence server.

   For LCS connections, an external application is mandatory. The application maps the presence server user to the application user such that end users do not have to enter their user names and passwords each time they need information. For detailed information about configuring an external application for IMP, see Section 34.2.3, "Setting Security for IMP."

10. Click **Test Connection** to confirm that the connection is good.

11. Click **Next** to create the connection.
12. On the **Additional Properties** page (Figure 34–5), you can optionally add parameters.

Figure 34–5   Create LCS Instant Messaging and Presence Connection, Step 3



Create Instant Messaging and Presence Connection - Step 3 of 3

Additional Properties

Enter the names and values of any additional properties.

Property Name	Property Value

13. Click **Finish**.

You can see the new IM and presence connection under **Application Resources - Connections**.

34.2.1.3 How to Set Up Microsoft OCS and Microsoft Lync Connections for IMP

To set up the connection to the Microsoft OCS or Microsoft Lync presence server:

1. In Oracle JDeveloper, open the Framework application in which you plan to consume instant messaging and presence.
2. In the Application Navigator, under Application Resources, right-click **Connections**, then select **Instant Messaging and Presence** from the list.
3. In the Create Instant Messaging and Presence connection dialog box, select to create the connection in **Application Resources**.

   A connection in Application Resources is available only for that application, while a connection in IDE connections is available for all applications you create. If you plan to use the connection in other applications, then select IDE connections to avoid having to re-create it.

4. On the **Name** page, for **Connection Name**, enter a unique name for your connection.

   No other connection should have the same name.

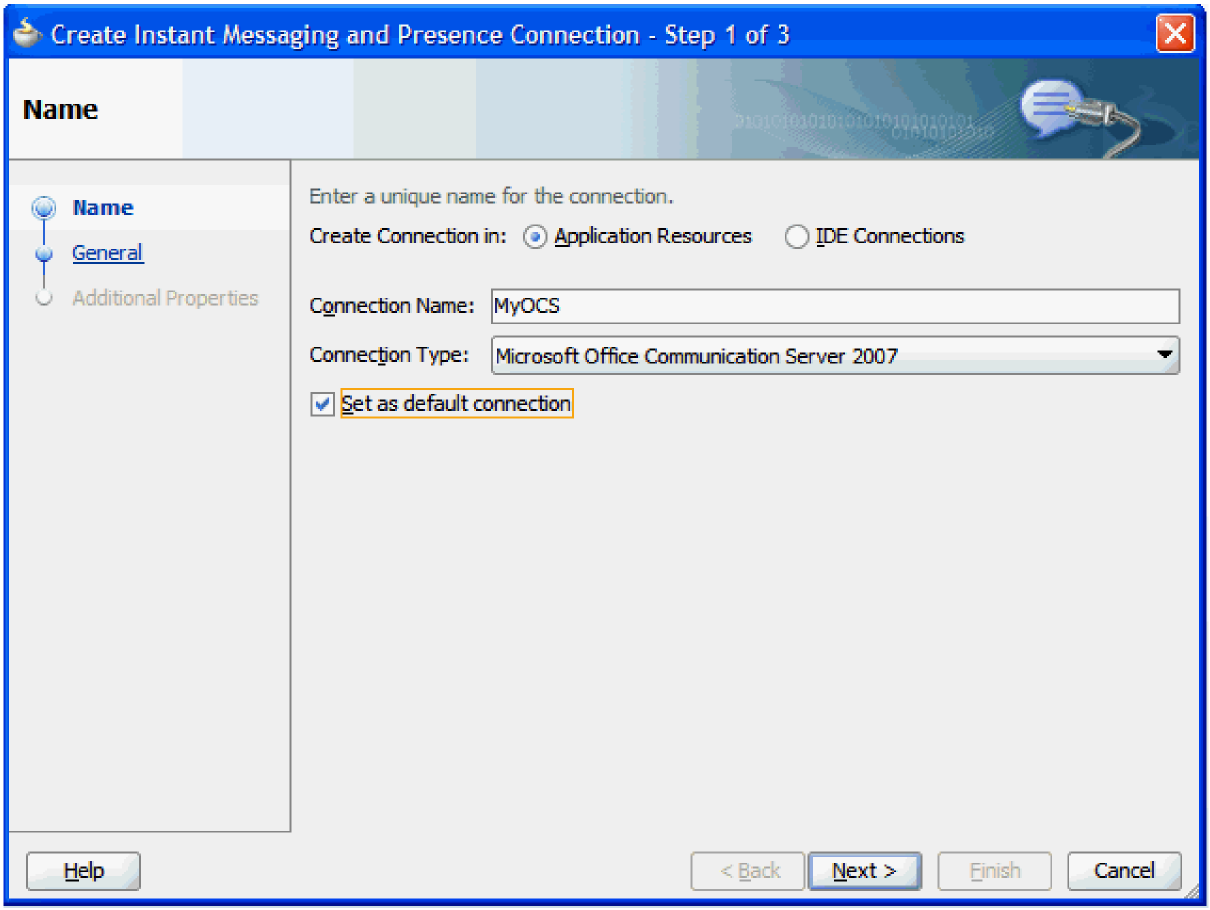
5. From the **Connection Type** list, select **Microsoft Office Communications Server 2007**.

   > **Note:** Microsoft Lync connections use the Microsoft Office Communications Server 2010 connection type.

6. Select the **Set as default connection** checkbox.

   One connection must be marked as the default connection, as shown in Figure 34–6.

Figure 34–6 Create Microsoft OCS or Microsoft Lync IMP Connection, Step 1



Create Instant Messaging and Presence Connection - Step 1 of 3

Name

Enter a unique name for the connection.

Create Connection in: ● Application Resources ○ IDE Connections

Connection Name: MyOCS

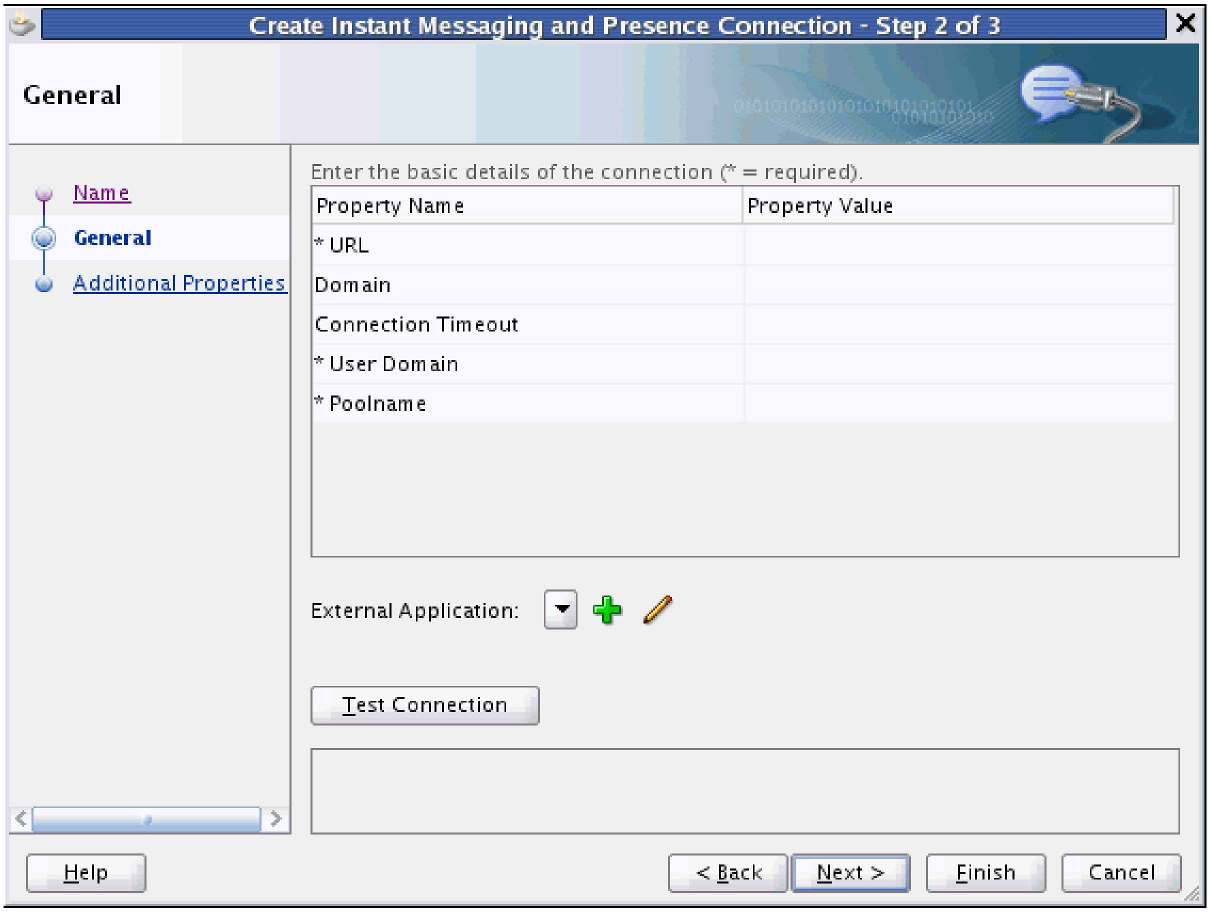
Connection Type: Microsoft Office Communication Server 2007

☑ Set as default connection

7. Click **Next**.

8. On the **General** page (Figure 34–7), enter the parameters for your Microsoft OCS or Microsoft Lync instance.

Figure 34–7 Create Microsoft OCS or Microsoft Lync IMP Connection, Step 2



Create Instant Messaging and Presence Connection - Step 2 of 3

General

Enter the basic details of the connection (* = required).

Property Name	Property Value
* URL	
Domain	
Connection Timeout	
* User Domain	
* Poolname	

External Application:

For example:

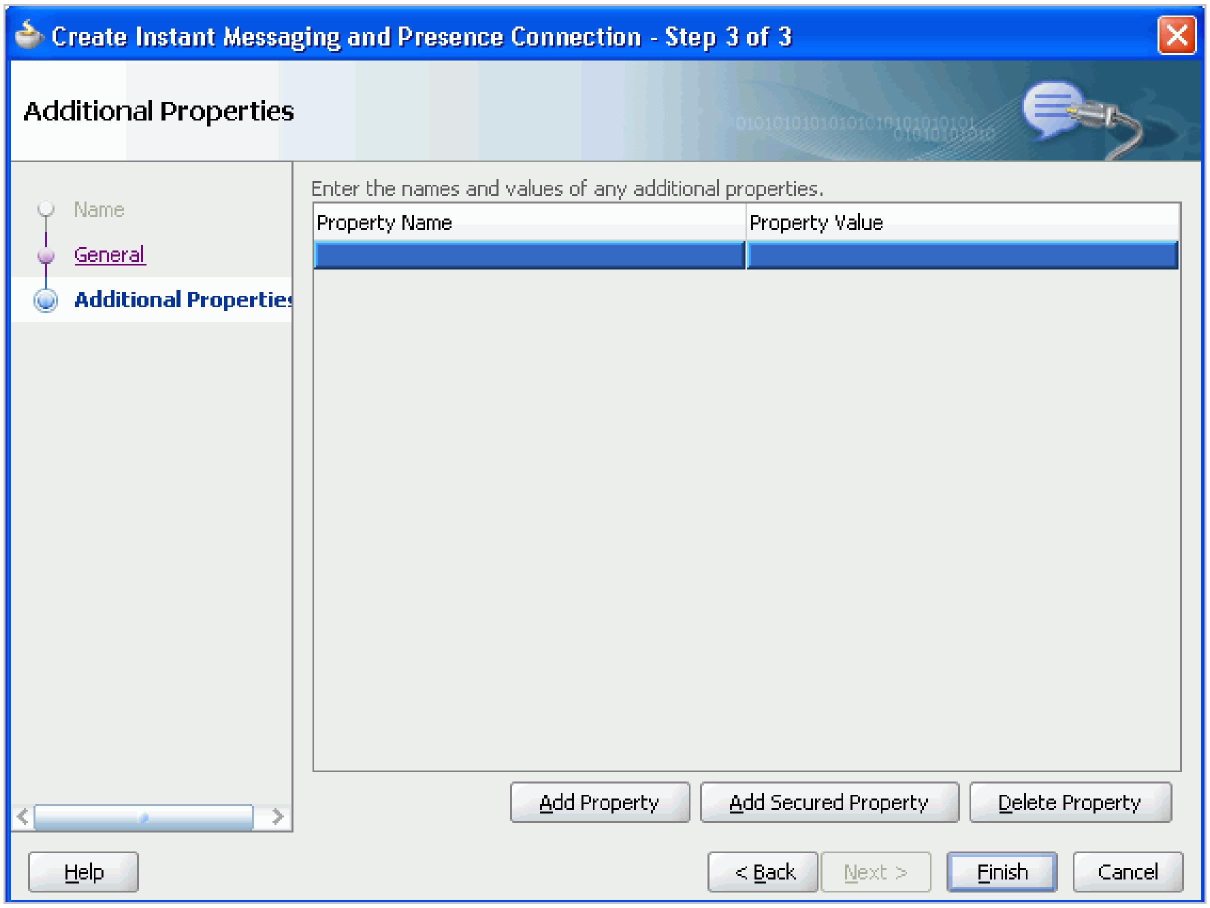
- The URL is the location of your Microsoft OCS or Lync instance. This could be http://host:port/RTC where RTC is the virtual directory name under which the server side module is deployed. (See the Microsoft documentation for more information.)
- The Domain property is maintained for backward compatibility. It should be left blank.
- The Connection Timeout property is optional. It represents the time (in seconds) WebCenter Portal should wait for the server to respond while making the connection. If the presence server does not respond in the given time, then it aborts the connection and reports an error.
- The User Domain is the Active Directory domain on Microsoft OCS or Lync. This parameter is mandatory.
- For Poolname, enter the name of the pool under which Microsoft Communications Server components are deployed. This parameter is mandatory. (See the Microsoft documentation for more information.)

9. On the same page, select an **External Application** to leverage the authentication mechanism (user names and passwords) on the presence server.

   For Microsoft OCS and Microsoft Lync connections, an external application is mandatory. The application maps the presence server user to the application user such that end users do not have to enter their user names and passwords each time they need information. For detailed information about configuring an external application for IMP, see Section 34.2.3, "Setting Security for IMP."

10. Click **Test Connection** to confirm that the connection is good.
11. Click **Next**.
12. On the **Additional Properties** page (Figure 34–5), you can optionally add parameters.

Figure 34–8 Create Microsoft OCS or Microsoft Lync IMP Connection, Step 3



13. Click **Finish**.

You can see the new IM and presence connection under **Application Resources - Connections**.

34.2.2 Adding IMP Functionality at Design Time

This section explains a basic incorporation of IMP into your application. It includes the following subsections:

- Section 34.2.2.1, "IMP Task Flows"
- Section 34.2.2.2, "How to Add IMP Functionality to your Application"

34.2.2.1 IMP Task Flows

IMP does not include any task flows.

34.2.2.2 How to Add IMP Functionality to your Application

To add IMP to your Framework application:

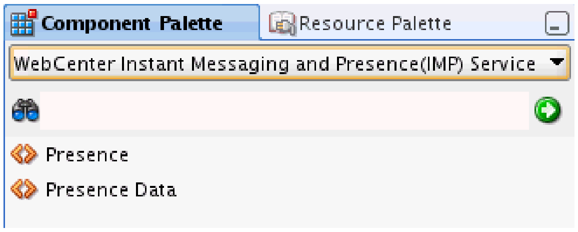
1. Follow the steps described in Chapter 2, "Setting Up Your Development Environment" to create a customizable page in your application.

2. Open the page on which you want to add IMP.

3. Ensure that you have configured your application to connect to the presence server. See Section 34.2.1, "Setting up Connections for IMP."

4. In the Component Palette, drag and drop the **Presence** component to the page to add the Presence icon (Figure 34–9).

Figure 34–9 Component Palette - IMP Components



WebCenter Instant Messaging and Presence(IMP) Service

Presence

Presence Data

Use the **Presence** icon anywhere you want to display a user, for example, as the author of a discussion topic, the sender/recipient of a mail, or the owner of a document.

5. In the resulting dialog box, enter the user name of a user that exists in the back-end server that is linked to in the IM and Presence connection.

   You can add numerous presence components to the application page.

   For information about optional **Presence** component parameters, see Section 34.3.2, "Customizing IMP Views."

6. Click **Finish**.

7. From the Component Palette, drag and drop **Presence Data** to the end of the page (that is, before the `<af:document>` tag).

   This component does not have any attributes.

   The **Presence Data** component provides the status information for all **Presence** components on the page, such as online, offline, or busy. It verifies that all presence information corresponding to the user on the whole page shows consistent status information. Without this component, all users appear offline.

   Because the **Presence Data** component makes a call to the back-end server, for best performance, ensure that this is the last tag on the page. To avoid adding this tag to every page in your application, consider using a page template with **Presence Data** as the last component; that is, before the end of the `</af:form>` tag.

> **Note:** You can create new pages at runtime on which you can add components, such as forums, mail, or documents. Many components have **Presence** tags, but users do not have a handle to add the **Presence Data** tag to the page. To see presence on custom pages, you must manually add the **Presence Data** tag to the underlying template.

8. If **External Application** in IDE connections was selected when you created the connection, then drag and drop the **External Application - Change Password** task flow into your application from the Resource Palette or Component Palette.

   This task flow enables the end user to set the appropriate user name and password for the external application.

9. Save your project, and then run your page to a browser to see the Presence component.

   Figure 34–10 shows the runtime Presence component with the display name of user Monty Montasaurus111.

Figure 34–10 WebCenter Portal Presence Icon - Online

34.2.3 Setting Security for IMP

IMP requires user identity. ADF security is configured by default if you created your application using the WebCenter Portal - Framework Application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."

Credentials are read from the external application (public credentials) and used to log on to the presence server. If you do not apply ADF security or if you do not have an external application configured, then users cannot authenticate and do not see any content at runtime.

> **Note:** The presence server and the Framework application should point to the same identity store. The identity store must be LDAP-based; that is, not file-based with `jazn-data.xml`.

To access the presence server, IMP can use an external application with dedicated user accounts.

Microsoft LCS, OCS, and Lync support external application connections. With a secured application, users get presence status. The Change Credentials option works as an alternative to using an external application. Logged-in users can click their own Presence context menu and select **Change Credentials**. Security should be on a private trusted network.

To use an external application for authentication:

1. On the General page of the Create Instant Messaging and Presence connection wizard, click the **+** icon next to External Application.

   This brings up the Register External Application wizard. The application maps the presence server user to the application user such that end users do not have to enter their user names and passwords each time.

   > **Note:** External application credential provisioning is built into the IMP connection. You do not need to drop **External Application - Change Password** task flow on a page.

2. On the Name page:

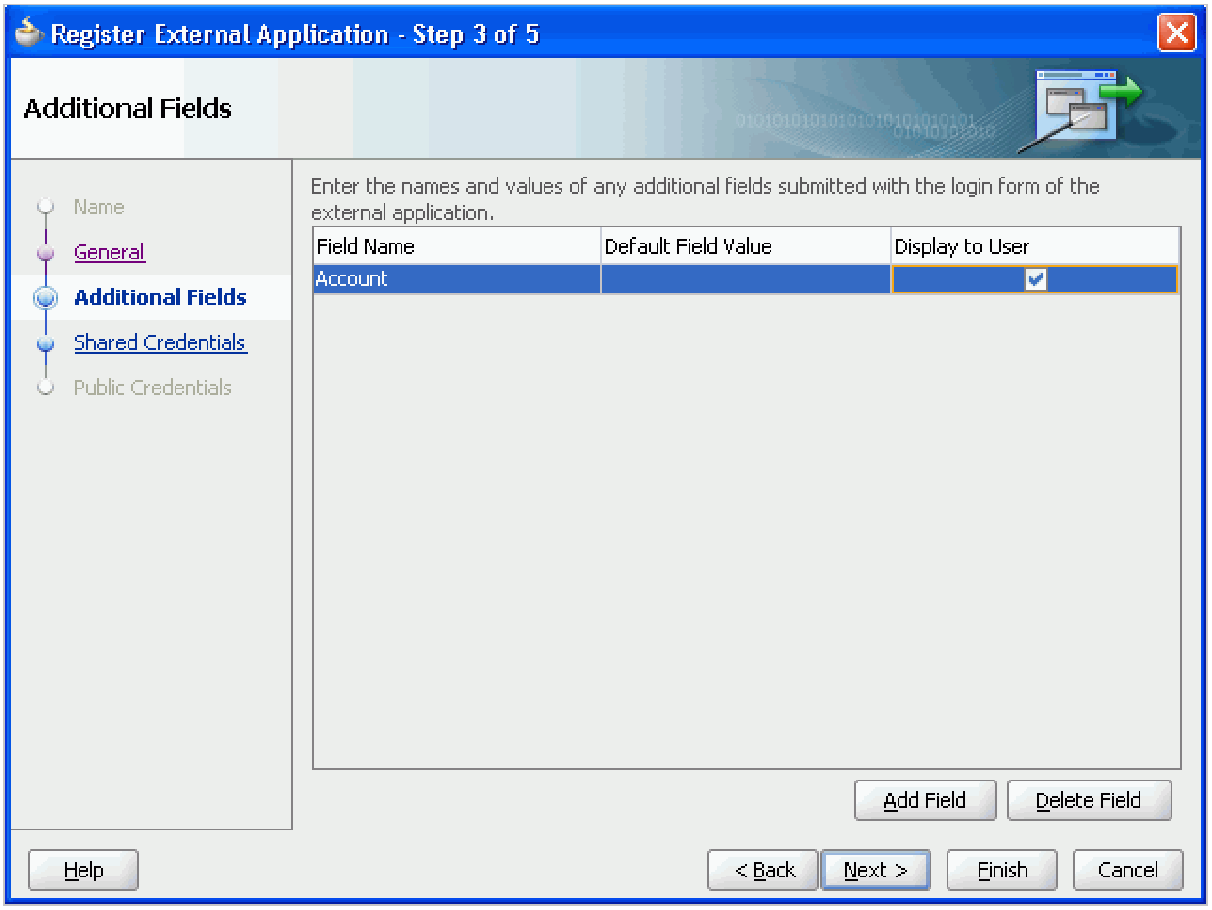
- For **Application Name**, enter a unique name to identify the application. This name must be unique within the Framework application, and among other connections as well. Note that you cannot edit this field afterward.
- For **Display Name**, enter a name for the application that end users see in the credential provisioning screens.

3. Click **Next**.
4. On the General page, leave the following properties with the default values.
   - **Login URL**
   - **User Name/ID Field Name**
   - **Password Field Name**
5. From the **Authentication Method** list, select **POST**. This submits login credentials within the body of a form. The external application for IMP requires this authentication method.
6. Click **Next**.
7. On the Additional Fields page:

   Click **Add Field**, and add an extra field with the name "Account." Make sure to select the **Display to User** checkbox, as shown in Figure 34–11.

> **Note:** The external application for IMP requires this additional field. It must be displayed to users.

Figure 34–11 Account Additional Field



Enter the names and values of any additional fields submitted with the login form of the external application.

Field Name	Default Field Value	Display to User
Account		☑

8. External applications allow different types of credentials to be associated with a connection:

   - When shared credentials are specified, every *authenticated* user uses the same credentials to access the external application; that is, the user name and password you can define here. A single presence session is created for all logged-in users. This is not accessible to public users.
   - With public credentials, without authenticating your Framework application, you can view presence from a certain presence ID for all *unauthenticated* (public) users. Public credentials are used whenever an application is not secured or the user has not yet logged in. A single presence session is created for all public users.
   - With private credentials, each user must authenticate to an *individual* ID (that is, each application user must specify his own credentials). One presence session is created for each user.

9. Click **Finish** to have the external application use private credentials, or click **Next** to set up shared or public credentials.

10. *For Shared Credentials Only*: On the Shared Credentials page, ensure that **Specify Shared Credentials** is selected, then enter the shared user credentials and ID.

11. *For Public Credentials Only*: On the Public Credentials page, ensure that **Specify Public Credentials** is selected, then enter the user credentials and ID for public use.

12. Click **Finish** to register the external application.
13. In the IMP connection wizard, ensure that this newly-created external application connection for IMP is selected.

For information about using external applications, see Section 74.13, "Working with External Applications."

34.3 Advanced Information for IMP

This section describes optional features available with IMP. It includes the following subsections:

- Section 34.3.1, "Enabling Network Presence"
- Section 34.3.2, "Customizing IMP Views"
- Section 34.3.3, "Troubleshooting IMP"

34.3.1 Enabling Network Presence

When WebCenter Portal presence is not available (for example, if your enterprise uses a Jabber/XMPP presence server or has federated presence servers with users distributed across identity management systems), you can connect to a third-party network presence service.

Out-of-the-box, WebCenter Portal supports Yahoo! Messenger on network presence. However, the network presence model can be extended to include other providers, such as ICQ.

This section includes the following subsections:

- Section 34.3.1.1, "Setting Up Yahoo! Messenger Presence"
- Section 34.3.1.2, "Setting Up Other Network Presence Providers"

34.3.1.1 Setting Up Yahoo! Messenger Presence

WebCenter Portal Framework allows end users to set their IM preferences to their Yahoo! Messenger presence. Portal developers enable this functionality by leveraging the `rtcPresenceHandler` bean.

Follow these steps to include Yahoo! Messenger presence in your Framework application.

1. On the Source tab for your JPSX page, add the user interface for users to enter their Yahoo! Messenger credentials: **Display Name** and **IM Address** input boxes and a **Save IM Preferences** button.

   Example 34–2 shows the two `af:inputText` components for users to enter Display Name and IM Address and an `af:commandButton` component for users to save the preferences.

   Setting the `inputText` value with this EL sets the `displayName` and `imAddress` in the preferences bean. To save the values, users click the button, which invokes a method from the bean to save the preferences.

Example 34–2 User Interface for Yahoo! Messenger Presence

```
      <af:inputText label="Display Name"
value="#{rtcPreferenceHandler.displayName}" id="it1"/>
      <af:inputText label="IM Address"
value="#{rtcPreferenceHandler.imAddress}" id="it2"/>
```

```
                        <af:commandButton text="Save IM Preferences" id="cb1"
                 actionListener="#{rtcPreferenceHandler.savePreferences}"/>
```

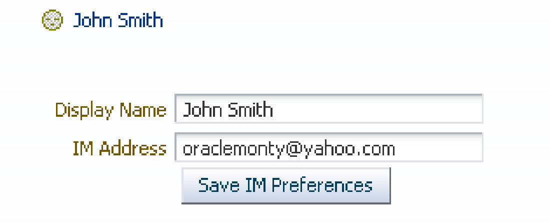
Example 34–3 shows the full source code for the page, with the user interface included.

Example 34–3 Source Code for the Page with Yahoo Presence

```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:rtc="http://xmlns.oracle.com/webcenter/collab/rtc">
  <jsp:directive.page contentType="text/html;charset=UTF-8"/>
  <f:view>
    <af:document id="d1">
      <af:form id="f1" usesUpload="true">
        <af:panelStretchLayout id="psl1">
          <f:facet name="bottom"/>
          <f:facet name="center">
            <af:panelGroupLayout layout="scroll"
                                 xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
                                 id="pgl1">
              <rtc:presence username="#{rtcPreferenceHandler.imAddress}"
displayName="#{rtcPreferenceHandler.displayName}" id="p1"/>
              <rtc:presenceData id="pd1"/>
              <af:inputText label="Display Name" value="#{rtcPreferenceHandler.displayName}"
id="it1"/>
              <af:inputText label="IM Address" value="#{rtcPreferenceHandler.imAddress}" id="it2"/>
              <af:commandButton text="Save IM Preferences" id="cb1"
                                actionListener="#{rtcPreferenceHandler.savePreferences}"/>

            </af:panelGroupLayout>
          </f:facet>
          <f:facet name="start">
            <af:spacer width="10" height="10" id="s1"/>
          </f:facet>
          <f:facet name="end">
            <af:spacer width="10" height="10" id="s2"/>
          </f:facet>
          <f:facet name="top"/>
        </af:panelStretchLayout>
      </af:form>
    </af:document>
  </f:view>
</jsp:root>
```

2. Run the JPSX page to see that now users can enter their Yahoo! Messenger credentials (Figure 34–12).

Figure 34–12 User Interface to Enter Yahoo! Messenger Credentials



John Smith

Display Name: John Smith

IM Address: oraclemonty@yahoo.com

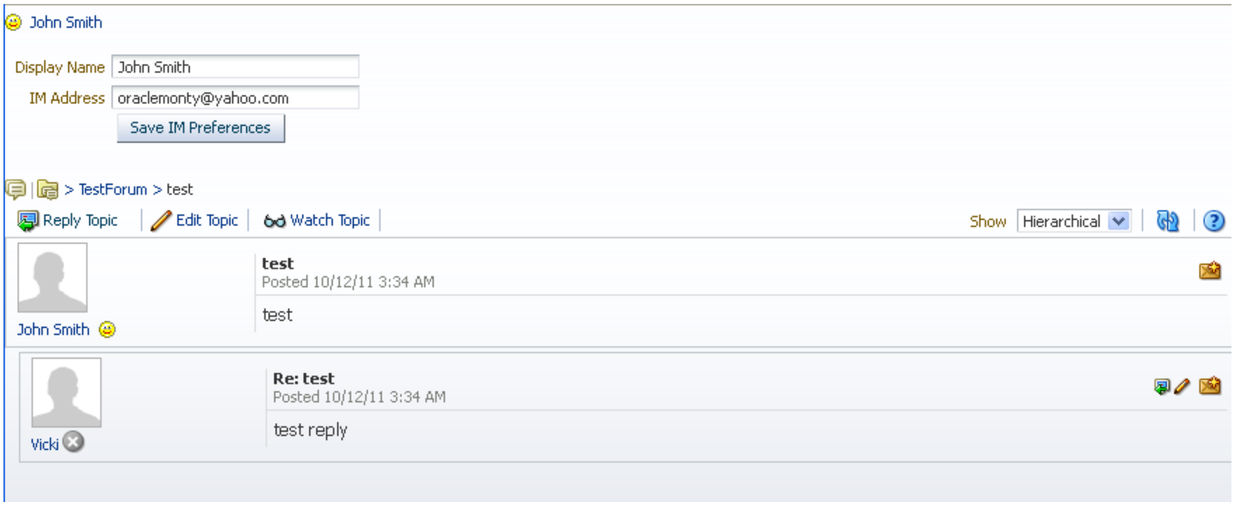
Presence tags for that user shows their Yahoo presence, either online (Figure 34–13) or offline (Figure 34–14).

Figure 34–13 Yahoo Presence Icon - Online

Figure 34–14 Yahoo Presence Icon - Offline

Figure 34–15 shows a sample page that includes the Discussion Forums task flow, where Yahoo! Messenger presence and WebCenter Portal presence are shown together.

Figure 34–15 Sample Page with WebCenter Portal Presence and Yahoo! Messenger Presence



John Smith

Display Name: John Smith

IM Address: oraclemonty@yahoo.com

John Smith

test

Posted 10/12/11 3:34 AM

test

Vicki

Re: test

Posted 10/12/11 3:34 AM

test reply

34.3.1.2 Setting Up Other Network Presence Providers

To use a different network presence provider, deploy your application that contains the `PresenceNetworkAgent` implementation class for that service and an `imp-pna.config` file listing that implementation class into a jar file.

For example, suppose the new Presence Network Agent is called SamplePNA. You must create two files: the `Project1.SamplePNA` class file and the `imp-pna.config` file.

- `Project1.SamplePNA.java`: This class implements `oracle.webcenter.collab.rtc.PresenceNetworkAgent`. It must implement three methods:
  - `isSupported(PNAContext context)`: The method should return true if the PNA supports the user for which presence is requested. The `PNAContext` object supplied contains the user information. For example, if the PNA supports all IM addresses with the domain `example.com`, then it can get the imAddress from the `PNAContext` object and check for the domain `example.com`.
  - `getURL(PNAContext context)`: The method should return the fully qualified URL to reach to the user's Presence icon. Again, it gets the user information from the `PNAContext` object.
  - `getChatURI(PNAContext context)`: The method should return the browser compatible URI to invoke the chat client (for example, `sip:user@example.com`).

  Example 34–3 shows this SamplePNA class file.

Example 34–4 SamplePNA Class File

```
public class SamplePNA implements PresenceNetworkAgent
{
private String DOMAIN = "@example.com";

public SamplePNA()
{
super();
}

//Returns true if the imAddress ends with DOMAIN
public Boolean isSupported(PNAContext context)
{
String imAddress = context.getIMAddress();
if(imAddress.endsWith(DOMAIN))
{
return true;
}

return false;
}

//Returns the URL to the icon representing the current status of a user
public String getURL(PNAContext context)
{
String imAddress = context.getIMAddress();
Strung url = "http://www.example.com?address=" + imAddress;
return url;
}

//Returns the browser compatible chat uri to invoke the thick client
public String getChatURI(PNAContext context)
{
String imAddress = context.getIMAddress();
String chatURI = "sip:" + imAddress;
return chatURI;
}
}
```

- META-INF/imp-pna.config: This file lists the available PNAAgent classes. In this case, it contains only the following line:

  ```
  Project1.SamplePNA
  ```

Whenever a Presence tag is encountered with an IM address as *user@example.com*. The URL configured appears on the user interface as the Presence icon.

```
<rtc:presence username="user1@example.com" resolveAddress="false"/>
```

34.3.2 Customizing IMP Views

Table 34–1 lists the attributes supported by the **Presence** component. Only the username attribute is required; all other attributes are optional. You can update these attributes in the Property Inspector.

Table 34–1 Presence Component Description

Attribute	Description
username	The user whose presence information you want to add to the application page. This attribute is required.
display	How the component should display. Takes one of the following values: ▪ icon: Display only the Presence icon; do not render the name. ▪ name: Display the user name; do not display the Presence icon. ▪ both (default): Display both the icon and the user name.
displayName	By default, the **Presence** component displays the user name. If the flag get.display.name.from.user.profile is set to true in service-config.xml *and* if this displayName attribute is not supplied, then the **Presence** component tries to look up a user's display name from the User Profile.
iconPosition	The position for the icon. Possible values are begin and end. The default value is begin.
controlsEnabled	A Boolean value that defines whether the component should provide rich interactions to the end user. If this attribute is set to false, then the Presence component does not do anything when clicked.
id	A unique identifier for the component on the page. The identifier must follow a subset of the syntax allowed in HTML: ▪ Must not be a zero-length String. ▪ First character must be an ASCII letter (A-Z, a-z) or an underscore ('_'). ▪ Subsequent characters must be an ASCII letter or digit (A-Z, a-z, 0-9), an underscore ('_'), or a dash ('-').
smallIcon	A Boolean value that defines whether to use the small 12x12 icon set (true) or to use the default 16x16 icon set (false). The default value is false.
rendered	A Boolean value that defines whether to render this component. The default value is true.
binding	An EL reference to store the component instance on a bean. Use this to give programmatic access to a component from a backing bean or to move creation of the component to a backing bean.
inlineStyle	The CSS styles to use for this component. Manually enter any style in compliance with CSS version 2.0 or later, or expand this node to specify style elements. This is intended for basic style changes.

Table 34–1 (Cont.) Presence Component Description

Attribute	Description
`styleClass`	A CSS style class to use for this component.
`resolveToAddress`	A Boolean value that defines whether to resolve the supplied `username` to an IM address. The default value is `true`. However, if the supplied `username` is an IM address, then you can set this value to `false`, and IMP uses `username` as the IM address.

34.3.3 Troubleshooting IMP

This section describes common problems and solutions for IMP.

Problem

The Presence icon is not visible in your Framework application.

Solution

Ensure that an IMP connection exists in your application and has been set as active.

Problem

Changes in the presence status of users are not visible in your Framework application.

Solution

For each logged-in user's session, IMP fetches the presence information from the presence server and stores it in the presence cache. For presence requests, IMP returns the data from the cache until the cache expires. The default cache expiry period is 60 seconds.

To view the updated presence status, you can wait for the cache to expire and retrieve the latest presence status.

You can also change the cache expiry time by setting the `rtc.cache.time` configuration property to the desired value (in seconds). Update `adf-config.xml` to include the highlighted entry, which shows the sample value as 30 seconds. Example 34–5 shows an example.

Example 34–5 Setting the rtc.cache.time Expiration Value in adf-config.xml

```
<adf-collaboration-config xmlns="http://xmlns.oracle.com/webcenter/collab/config">
<service-config serviceId="oracle.webcenter.collab.rtc">
<property name="rtc.cache.time" value="30"/></service-config>
</adf-collaboration-config>
```

Problem

A number of options, such as Send Instant Message, are not available in the IMP context menu in your Framework application.

Solution

Ensure that IMP is configured in your Framework application. Also, ensure the following settings for the various context menu options:

- **View Profile** option unavailable: Ensure that your application is secured.
- **Send Instant Message** option unavailable: Ensure that IMP is configured in the application.

Problem

You are unable to send a message from your Framework application. Clicking the **Send Instant Message** option returns an error.

Solution

Ensure that your SIP client is supported by the presence server and you have logged on as an authenticated user. The supported SIP client is Microsoft Communicator.

35

Integrating Mail

This chapter explains how to integrate email functionality in a Portal Framework application at design time.

This chapter includes the following sections:

- Section 35.1, "Introduction to Mail"
- Section 35.2, "Basic Configuration for Mail"
- Section 35.3, "Advanced Information for Mail"

Note: WebCenter Portal Mail supports only the Inbox. No other folders (or moving of messages) are supported.

For more information about managing and including mail, see:

- the "Managing Mail" chapter in *Administering Oracle WebCenter Portal*
- the "Working with Mail" chapter in *Using Oracle WebCenter Portal*

35.1 Introduction to Mail

This section provides an overview of WebCenter Portal mail features and requirements. It includes the following subsections:

- Section 35.1.1, "Understanding Mail"
- Section 35.1.2, "Requirements for Mail"

35.1.1 Understanding Mail

Mail functionality enables users to access the inbox of a mail server that supports Internet Message Access Protocol4 (IMAP4) and Simple Mail Transfer Protocol (SMTP). Additionally, it enables users to compose a new mail message from within the application (with attachments) and delete, reply to, and forward messages.

This mail does not replace users' mail clients; it simply enables users to access and compose mail in a single, collaborative environment.

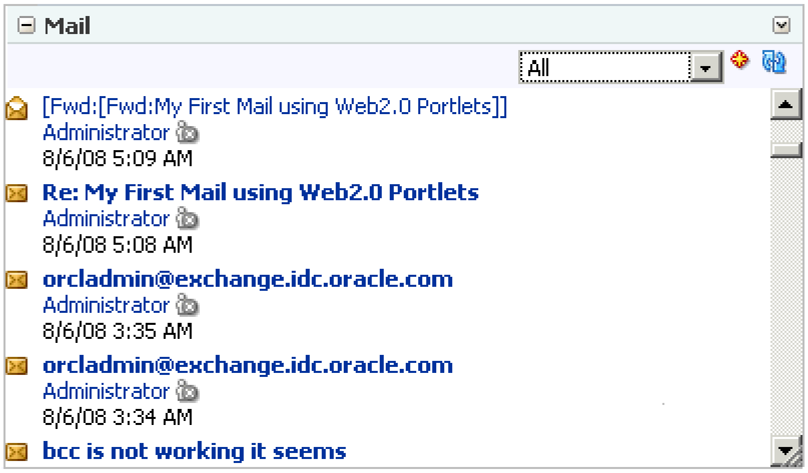
With mail, you can do the following:

- Read a message by clicking the linked mail subject.
- View sender details (including date) by expanding the **From** field.
- Scroll down to see the other messages not in the view. You can navigate among the fetched messages as cached messages.

- Attach a file to a message by expanding the attachment section within the mail dialog and clicking **Attach**. Specify an attachment in the new dialog pop-up. Remove an attachment from the mail by clicking the **Remove Attachment** icon.
- Reply to a message by clicking the **Reply** or **Reply All** icon.
- Forward a message by clicking the **Forward** icon.
- Cancel an operation (for example, sending a mail) by clicking **Cancel**.

Figure 35–1 shows the Mail task flow at runtime. At the top of the view are three elements: a dropdown list that shows the number of mail messages to display (here, **All**), the **Compose** icon, and the **Refresh** icon. The **Refresh** icon provides a means of manually checking for new messages in the inbox.

Figure 35–1 Mail at Runtime



Mail

All

[Fwd:[Fwd:My First Mail using Web2.0 Portlets]]
Administrator
8/6/08 5:09 AM

Re: My First Mail using Web2.0 Portlets
Administrator
8/6/08 5:08 AM

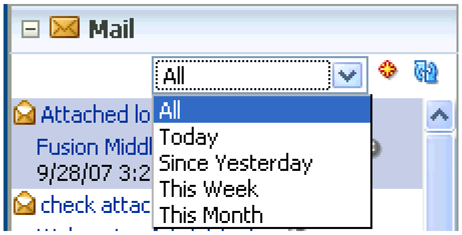
orcladmin@exchange.idc.oracle.com
Administrator
8/6/08 3:35 AM

orcladmin@exchange.idc.oracle.com
Administrator
8/6/08 3:34 AM

bcc is not working it seems

The dropdown list provides filters to focus the view on messages received today, messages received since yesterday, messages received this week, and messages received this month (Figure 35–2).

Figure 35–2 Message Filter



Mail

All

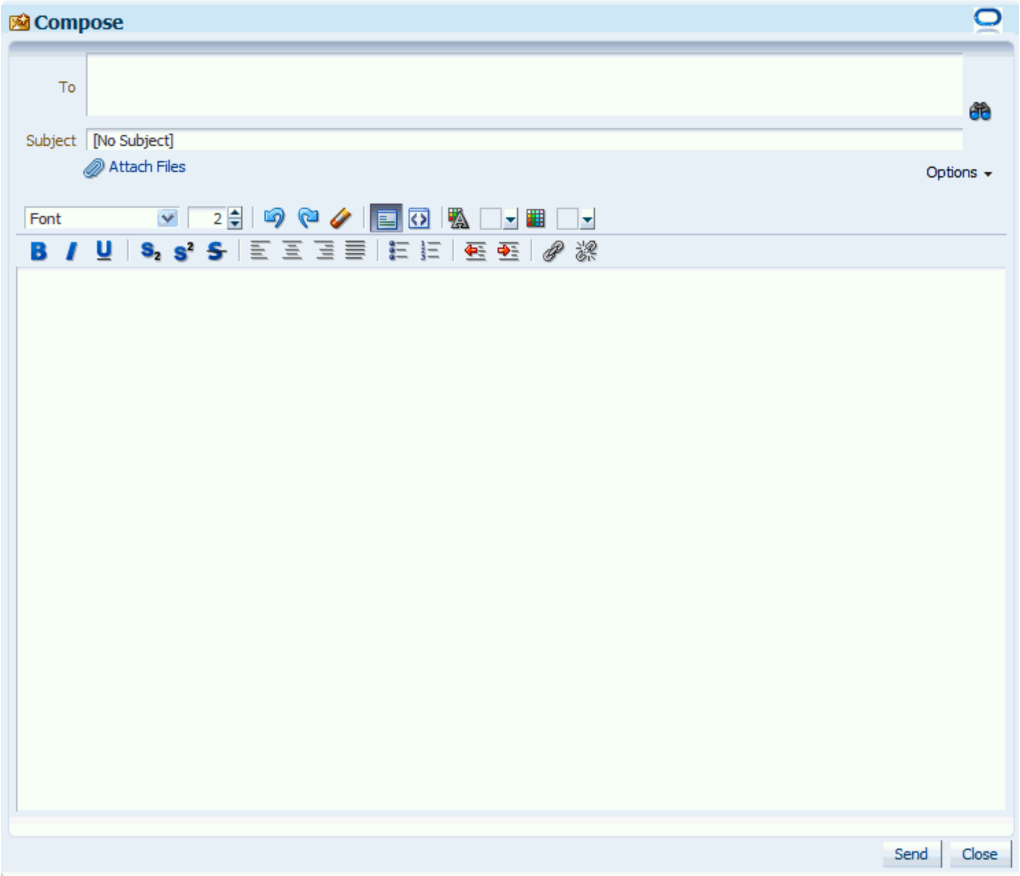
Attached lo
Fusion Middl
9/28/07 3:2
check attac

All
Today
Since Yesterday
This Week
This Month

Note: By default, `All` displays the 50 most recent messages. For information on how to increase this amount, see Section 35.3.2, "Configuring the Number of Mail Messages Displayed."

Click the **Compose** icon next to the dropdown list to compose a new message right from your application. Clicking this icon displays the Compose page, as shown in Figure 35–3.

Figure 35–3 Compose Mail



Use the **Search** icons to find mail addresses and contacts of users in the LDAP store that the Framework application uses. For any user not in the LDAP store, you must enter an explicit mail address.

For more information about mail at runtime, see the "Working with Mail" section in *Using Oracle WebCenter Portal*.

35.1.2 Requirements for Mail

Mail requires a mail server that supports IMAP4 and SMTP. The Microsoft Exchange mail server is required for automatic creation of distribution lists when portals are created. In a Portal Framework application, this feature may not be desirable. To disable it, do not provide the LDAP (Active Directory) server details in the mail connection.

35.2 Basic Configuration for Mail

This section describes the steps required for adding mail functionality to your application. It includes the following subsections:

- Section 35.2.1, "Configuration Roadmap - Mail"
- Section 35.2.2, "Setting up Connections for Mail"
- Section 35.2.3, "Adding Mail Functionality at Design Time"
- Section 35.2.4, "Setting Security for Mail"

35.2.1 Configuration Roadmap - Mail

Use the roadmap in this section as a guide through the configuration process.

Figure 35–4 and Table 35–1 provide an overview of the prerequisites and tasks required to get mail working in Portal Framework applications.

Figure 35–4 Configuring Mail for Portal Framework Applications

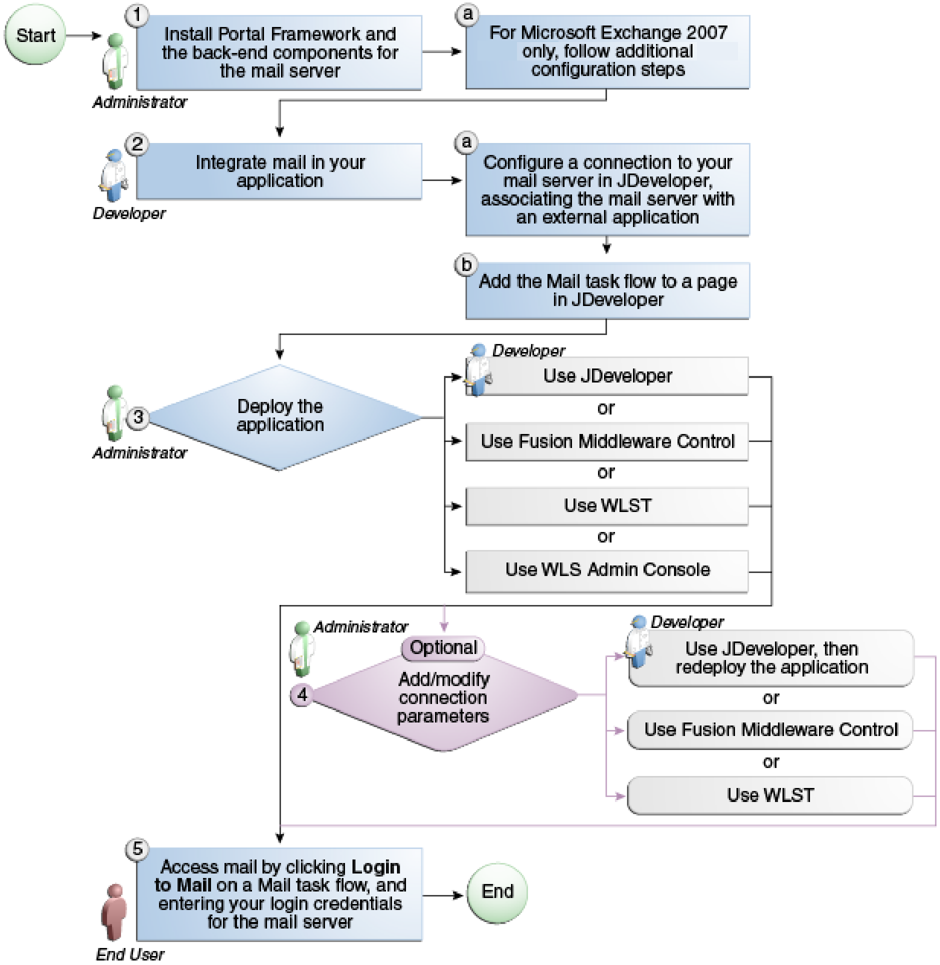

Start
1
Administrator
Install Portal Framework and the back-end components for the mail server
a
For Microsoft Exchange 2007 only, follow additional configuration steps
2
Developer
Integrate mail in your application
a
Configure a connection to your mail server in JDeveloper, associating the mail server with an external application
b
Add the Mail task flow to a page in JDeveloper
3
Administrator
Deploy the application
Developer
Use JDeveloper
or
Use Fusion Middleware Control
or
Use WLST
or
Use WLS Admin Console
Administrator
Optional
4
Add/modify connection parameters
Developer
Use JDeveloper, then redeploy the application
or
Use Fusion Middleware Control
or
Use WLST
5
Access mail by clicking Login to Mail on a Mail task flow, and entering your login credentials for the mail server
End User
End

Table 35–1 Configuring Mail for Portal Framework Applications

Actor	Task	Sub-task
Administrator	1. Install WebCenter Portal and the back-end components for mail	1.a For Microsoft Exchange 2007 only, follow additional configuration steps
Developer	2. Integrate mail in your Portal Framework application	2.a Configure a connection to your mail server in JDeveloper, associating the mail server with an external application
		2.b Add the Mail task flow to a page in JDeveloper

Table 35–1 (Cont.) Configuring Mail for Portal Framework Applications

Actor	Task	Sub-task
Developer or Administrator	3. Deploy the Portal Framework application using one of the following tools: ■ JDeveloper (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator) ■ WLS Admin Control (Administrator)	
Developer or Administrator	4. (Optional) Add/modify connection parameters using one of the following tools: ■ JDeveloper, then redeploy the application (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator)	
End User	5. Access mail by clicking **Login to Mail** on a Mail task flow, and entering your login credentials for the mail server	

35.2.2 Setting up Connections for Mail

Before you can use mail, you must first set up the connection to your mail server. This can be any mail server based on IMAP4 and SMTP protocol.

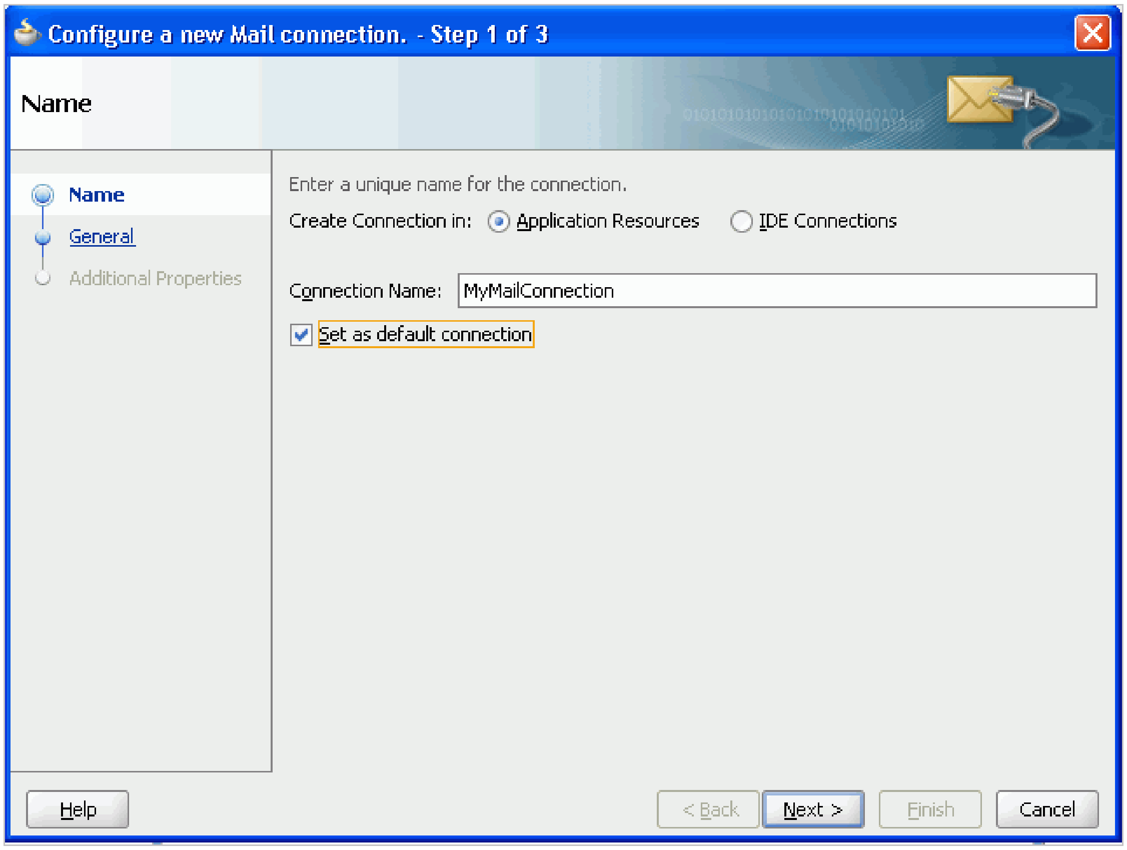
> **Note:** While you can set up the connections to back-end servers at design time in Oracle JDeveloper, you can later add, delete, or modify connections in your deployed environment using Enterprise Manager Fusion Middleware Control. For more information, see *Administering Oracle WebCenter Portal*.

To create a connection to your mail server from the application:

1. In Oracle JDeveloper, open the application in which to consume mail.
2. In your application, under Application Resources, right-click **Connections**, then select **Mail** from the list.
3. Select to create the Mail connection in **Application Resources**.

   A connection in Application Resources is available only for that application; while a connection in IDE Connections is available for all applications you create. If you plan to use the connection in other applications, then select IDE Connections to avoid having to re-create it.
4. In the **Connection Name** field, enter a unique name for the connection.
5. When configuring a single mail account, select the **Set as default connection** checkbox to use this as the active connection (Figure 35–5).

Figure 35–5 Configure a New Mail Connection, Step 1



Enter a unique name for the connection.

Create Connection in: ● Application Resources ○ IDE Connections

Connection Name: MyMailConnection

☑ Set as default connection

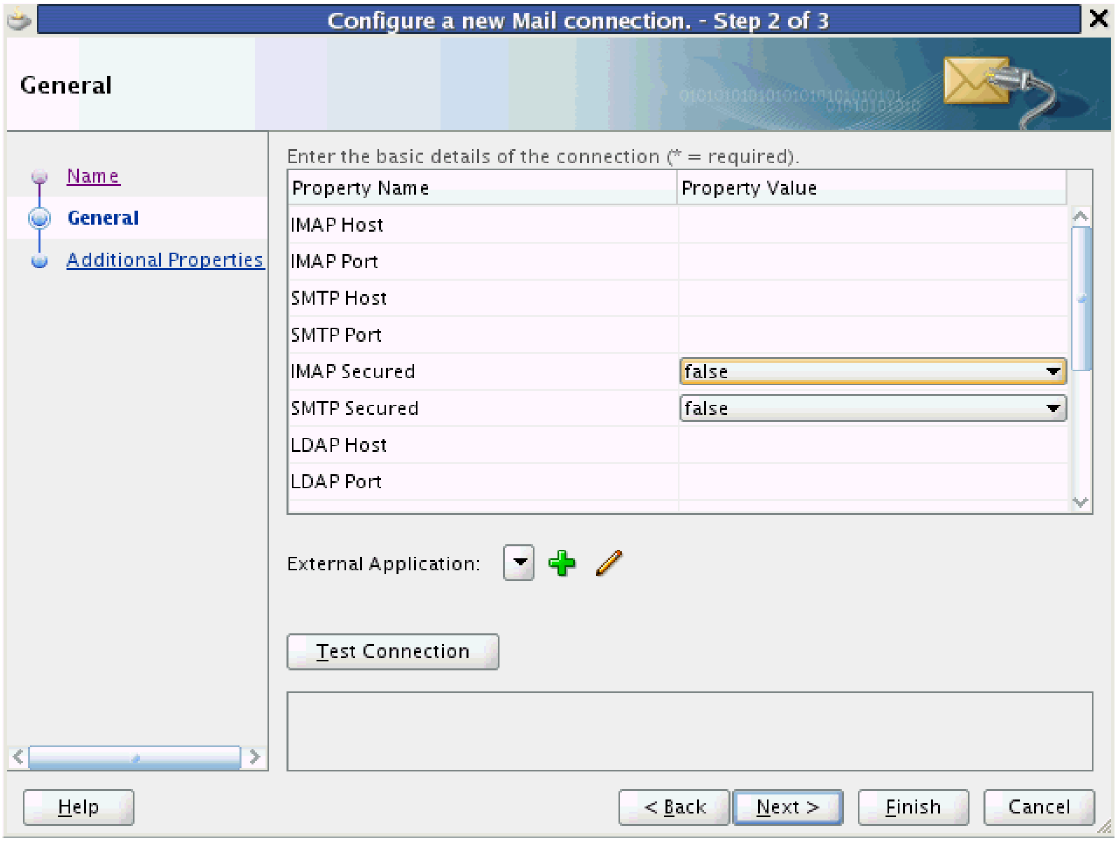
When configuring multiple mail accounts, you are not necessarily required to select this as the default connection. Keep in mind, however, that one connection must be marked as the default connection.

Note: After you create a connection as the default connection, you cannot edit it so that it is *not* the default. To use a different default connection, you must create a new connection and mark that as the default connection.

---

6. On the **General** page, enter values for the parameters (Figure 35–6).

Figure 35–6 Configure a New Mail Connection, Step 2



Configure a new Mail connection. - Step 2 of 3

General

Enter the basic details of the connection (* = required).

Property Name	Property Value
IMAP Host	
IMAP Port	
SMTP Host	
SMTP Port	
IMAP Secured	false
SMTP Secured	false
LDAP Host	
LDAP Port	

External Application:

- `IMAP Host`: The location of your IMAP server
- `IMAP Port`: The IMAP server port number (default is -1)
- `SMTP Host`: The location of your SMTP server
- `SMTP Port`: The SMTP server port number (default is -1)
- `IMAP Secured`: Indicates (true/false) a secure SSL connection (default is false)
- `SMTP Secured`: Indicates (true/false) a secure SSL connection (default is false)
- `LDAP Host` and `LDAP Port`: These, and all other LDAP values, are required only if Microsoft Exchange is the mail server. For mail to create distribution lists reliably, the WebCenter Portal application should use the same Active Directory server as Microsoft Exchange.
- `Connection Timeout`: The connection timeout (in seconds).

7. Click **Test Connection** to check that the host and port are available.
8. You must select an existing external application or create a new external application to proceed:

   a. For **External Application**, click the **+** icon to open the Register External Application wizard

   The application maps the mail server user to the application user so that end users are not required to enter their user names and passwords each time.

   For more information on external applications, see Section 74.13, "Working with External Applications."

Note: External application credential provisioning is built into the mail connection. You do not need to drop the **External Application - Change Password** task flow on a page.

b. On the Name page:

For **Application Name**, enter a unique name to identify the application. This name must be unique not only within the Framework application, but also among other connections. Note that you cannot edit this field afterward.

For **Display Name**, enter a name for the application that end users see in the credential provisioning screens.

c. Click **Next**.

d. On the General page, you can *optionally* enter values if you want the external application for mail to participate in Click Through Login.

For **Login URL**, enter the URL to which the HTML login page is submitted. View the HTML source of the application's login form to retrieve this URL.

For **User Name/ID Field Name**, enter the label that the application uses for the user name field, for example, User Name.

For **Password Field Name** field, enter the label that the application uses for the password field, for example Password.

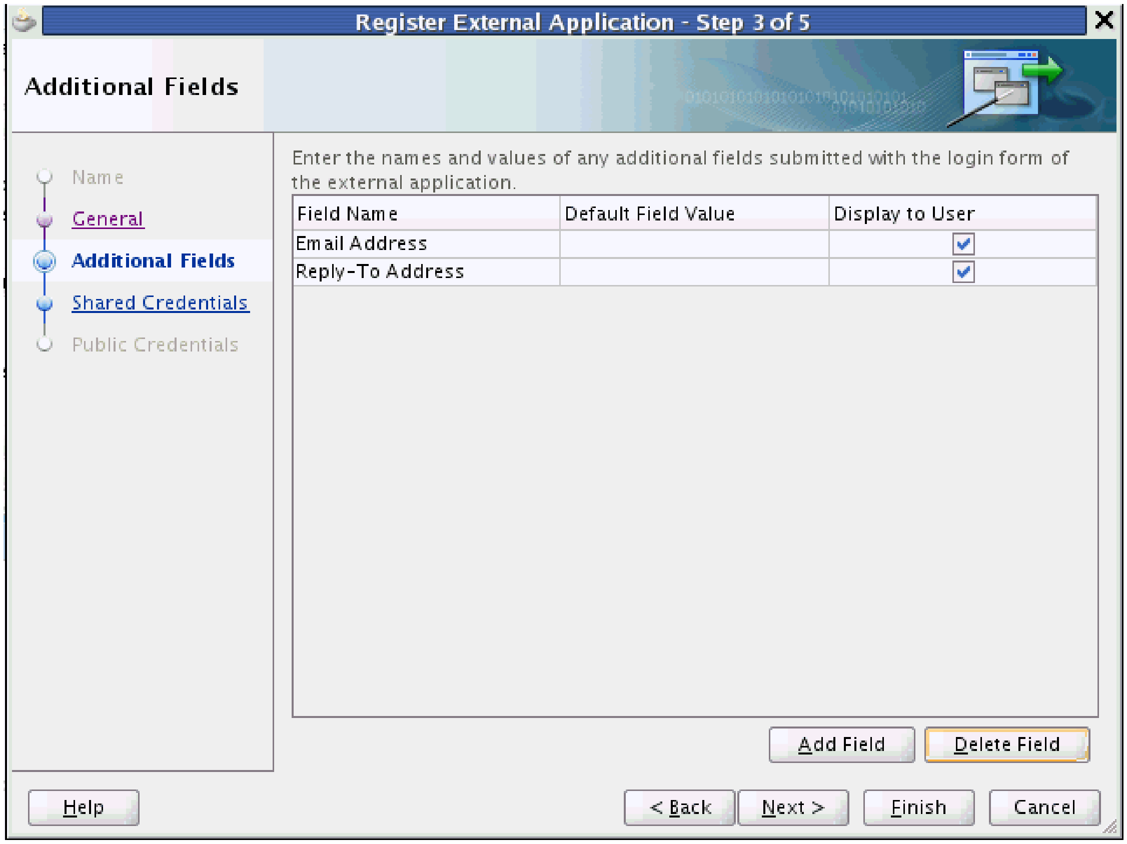
From the **Authentication Method** list, select **POST**. This submits login credentials within the body of a form. The external application for mail requires this authentication method.

e. Click **Next**.

f. On the Additional Fields page, click **Add Field**, and add an extra field with the name `Email Address`. This field captures the user's mail address, so that when the user sends mail, the sender address is this mail address. Select the **Display to User** checkbox.

Additionally, to specify that replies to the user's mail should go to different mail address than the `Email Address` field, click **Add Field** again, and add an extra field with the name `Reply-To Address`. Select the **Display to User** checkbox, as shown in Figure 35–7.

Figure 35–7 Email Address and Reply-To Additional Fields



Enter the names and values of any additional fields submitted with the login form of the external application.

Field Name	Default Field Value	Display to User
Email Address		☑
Reply-To Address		☑

Note: The external application for mail requires the `Email Address` field, and it must be shown to users. Fields for `Display Name` and `Reply-To Address` also are leveraged when sending mail.

---

g. External applications allow different types of credentials to be associated with a connection.

When shared credentials are specified, every *authenticated* user uses the same credentials to access the external application; that is, the user name and password you define here.

With public credentials, without authenticating your Framework application, you can view mail from a certain mail ID for all *unauthenticated* (public) users. Public credentials are used whenever an application is not secured or the user has not yet logged in.

Note: Public credentials are required to send mail from a self-registration page.

With private credentials, each user must authenticate to an *individual* mail ID. That is, each application user must specify his own credentials.

h. Click **Finish** to have the external application use private credentials, or click **Next** to set up shared or public credentials.

i. *For Shared Credentials Only*: On the Shared Credentials page, ensure that **Specify Shared Credentials** is selected and then enter the shared user credentials and mail ID.

j. *For Public Credentials Only*: On the Public Credentials page, ensure that **Specify Public Credentials** is selected and then enter the user credentials and mail ID for public use.

k. Click **Finish** to register the external application.

9. Back on the Mail connection wizard, ensure that this newly-created external application connection for mail is selected.

10. Optionally, you can add LDAP parameter values for the Active Directory server to manage portal distribution lists.

For detailed parameter information, see Table 35–2.

> **Note:** For WebCenter Portal and mail to share an identity management system for setting up portal mailing lists, you must use Active Directory. For information about installing and configuring mail servers as the WebCenter Portal administrator, see *Administering Oracle WebCenter Portal*.

Table 35–2 LDAP Directory Server Configuration Parameters

Field	Description
LDAP Host	Enter the host name of the computer where the LDAP directory server is running.
LDAP Port	Enter the port on which the LDAP directory server listens.
LDAP Base DN	Enter the base distinguished name for the LDAP schema. For example, CN=Users,DC=oracle,DC=com.
LDAP Domain	Enter the domain to be appended to distribution list names. For example, if the domain value is set to `oracle.com`, then the Finance Project portal maintains a distribution list named `FinanceProject@oracle.com`.
LDAP Administrator User Name	Enter the user name of the LDAP directory server administrator. A valid user with privileges to make entries into the LDAP schema.
LDAP Administrator Password	Enter the password for the LDAP directory server administrator. The password is stored in a secured store.
LDAP Default User	Enter a comma-delimited list of user names to whom you want to grant moderator capabilities. These users become members of every portal distribution list that is created. The users specified must exist in the base LDAP schema (specified in the `LDAP Base DN` field).
`ldap.secured`	Indicate whether a secured connection (SSL) is required between the Framework application and the LDAP directory server. If LDAP is configured to run in secure mode, then add this property (set to true/false) to use LDAP while creating distribution lists.

11. Click **Finish**.

You can see the new mail connection under **Application Resources - Connections**.

35.2.3 Adding Mail Functionality at Design Time

This section explains a basic incorporation of mail functionality. It includes the following subsections:

- Section 35.2.3.1, "Mail Task Flows"
- Section 35.2.3.2, "How to Add Mail to your Application"

35.2.3.1 Mail Task Flows

The Mail task flow displays a mail inbox.

35.2.3.2 How to Add Mail to your Application

To add mail to your application:

1. Follow the steps described in Chapter 2, "Setting Up Your Development Environment" to create a customizable page in your application.
2. Ensure that you have configured your application to connect to the mail server.
3. If you configured your external application for private or shared credentials, then the Framework application must be made secure using ADF security. ADF security is configured by default if you created your application using WebCenter Portal's Framework application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."
4. Open the page on which to add mail functionality.
5. In the Resource Palette, expand **My Catalogs**, **WebCenter Portal - Services Catalog**, and **Task Flows**.
6. Drag and drop the **Mail** task flow on to the page.
7. In the Create list, select **Region** to add the task flow to your page.
8. The resulting Edit Task Flow Binding dialog displays the optional `tabularView` parameter. If this parameter is set to `true`, then mail messages appear in a table, like an Inbox on any mail client. If this parameter is set to `false`, then mail messages render in a list view.

   Note: If you created a connection in IDE and not in the application, then the connection must be added to the application. For example, in the Resource Palette under IDE Connections, right-click the connection and select **Add to Application**.

9. Save your page and run it to the browser.
10. When you run the page with the Mail task flow for the first time, you are prompted to enter external application mail credentials from within the Mail task flow.

    Enter the credentials, then click **Submit**.

Notes:

- All instances of the Mail task flow in an application run against the same mail server, and it serves no purpose to add multiple Mail task flow instances. This is true for all task flows that require connections to back-end servers, such as task flows from discussions or announcements.
- After an application has been accessed with saved credentials, those credentials are persisted even after redeployment. To ignore saved credentials from previous deployments, edit `appUID` in `adf-config.xml` before redeploying the application. Edit the following value in bold to specify a modified value; for example, add 1 to the last value to update it as `WCApp1-1235`).

```
 <adf:adf-properties-child
xmlns="http://xmlns.oracle.com/adf/config/properties">
     <adf-property name="adfAppUID" value="WCApp1-1234"/>
 </adf:adf-properties-child>
```

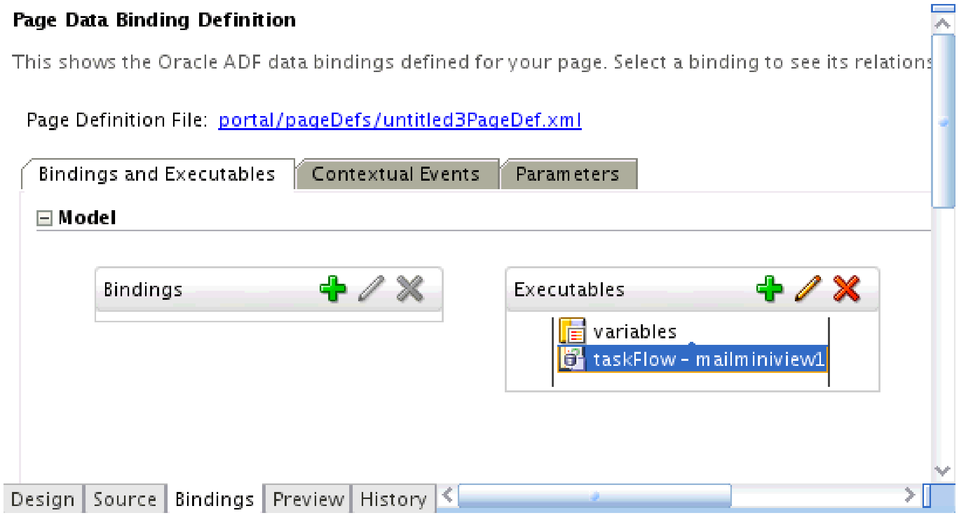
35.2.3.3 How to Modify the Mail Task Flow Parameters

The Mail task flow has an optional task flow binding parameter.

You can adjust the parameter values when you drop the task flows onto a page or after you have placed a task flow on a page:

1. Navigate to the Edit Task Flow Binding dialog by clicking the **Bindings** tab at the bottom of the page (next to the **Source** tab).
2. Under **Executables**, you'll see the task flow you added. Figure 35–8 shows an example of a Search task flow in the Executables section.

Figure 35–8 Page Data Binding Definition



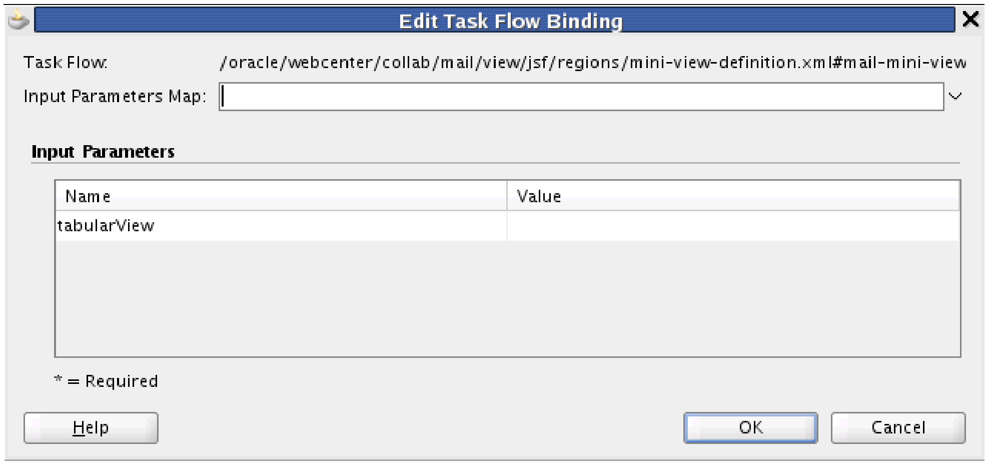
Page Data Binding Definition

This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relations

Page Definition File: portal/pageDefs/untitled3PageDef.xml

3. Select the task flow, and next to the Executables heading, click the **Edit selected element** (pencil) icon.
4. In the Edit Task Flow Binding dialog Figure 35–9, revise the binding parameter values as required.

Figure 35–9 Edit Task Flow Binding Dialog for Mail Task Flow



Task Flow: /oracle/webcenter/collab/mail/view/jsf/regions/mini-view-definition.xml#mail-mini-view

Input Parameters Map:

Input Parameters

Name	Value
tabularView	

* = Required

5. When you are finished, click **OK.**
6. Save and run your page to see the results.

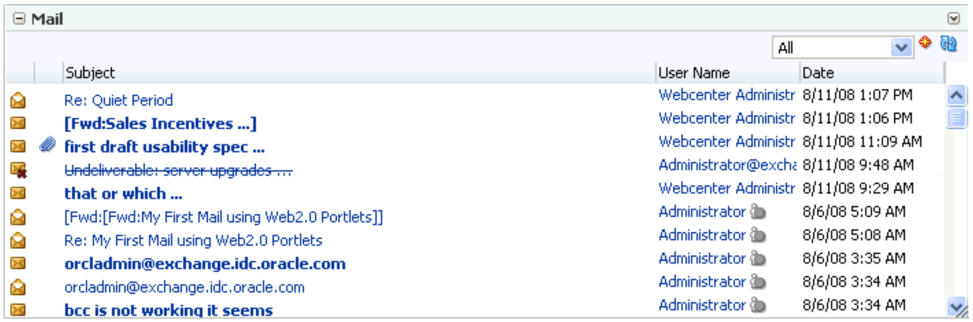
Table 35–3 describes the properties that are unique to the Mail task flow.

Table 35–3 Mail Task Flow Parameters

Property	Description	Task Flow
`tabularView`	Using the EL value type, enter a value of true to display the information associated with a mail message, such as its subject, sender, and, date sent, in a tabular format. If this parameter is set to false, then mail messages render in a list view.	Mail

Figure 35–10 depicts the Mail task flow where the region parameter `tabularView` is set to true.

Figure 35–10 A Mail Task Flow where the Region Parameter Tabular Is Set to True



Subject	User Name	Date
Re: Quiet Period	Webcenter Administr	8/11/08 1:07 PM
[Fwd:Sales Incentives ...]	Webcenter Administr	8/11/08 1:06 PM
first draft usability spec ...	Webcenter Administr	8/11/08 11:09 AM
~~Undeliverable: server upgrades ...~~	Administrator@excha	8/11/08 9:48 AM
that or which ...	Webcenter Administr	8/11/08 9:29 AM
[Fwd:[Fwd:My First Mail using Web2.0 Portlets]]	Administrator	8/6/08 5:09 AM
Re: My First Mail using Web2.0 Portlets	Administrator	8/6/08 5:08 AM
orcladmin@exchange.idc.oracle.com	Administrator	8/6/08 3:35 AM
orcladmin@exchange.idc.oracle.com	Administrator	8/6/08 3:34 AM
bcc is not working it seems	Administrator	8/6/08 3:34 AM

35.2.4 Setting Security for Mail

Mail requires security to fetch mail for each logged-in user. ADF security is configured by default if you created your application using WebCenter Portal's Framework application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."

The external application credentials for the user name used to log in to the application are fetched and used to log in to the mail server. The recommended approach is to have the mail server and the application point to the same identity store.

Note: Even if the application and the mail server share the same identity store, mail does not support identity propagation. Single sign-on functionality is enabled through the external application mechanism.

Mail works in a non-secured application if, and only if, the external application connection is configured with public credentials. If you do not apply security, and if mail requires a login to access the content, then users are not able to authenticate and do not see any content at runtime.

For information about using external applications, see Section 74.13, "Working with External Applications."

35.3 Advanced Information for Mail

This section describes optional features available with mail. It includes the following subsections:

- Section 35.3.1, "Invoking the Mail Compose Page"
- Section 35.3.2, "Configuring the Number of Mail Messages Displayed"
- Section 35.3.3, "Troubleshooting Mail"

35.3.1 Invoking the Mail Compose Page

The **Mail Compose** page enables users to determine how they want to compose individual messages within the application.

Invoke the **Mail Compose** page directly with a navigation rule that directs the user to the full page (Example 35–1).

Example 35–1 Invoking the Mail Compose Page

```
/oracle/workplace/collab/mail/view/jsf/pages/ComposeView.jspx
```

When you cannot provision mail accounts for all users within a portal but want to provide the ability for portal members to send mail to other members, then specify a shared (public) mail connection with the `useConnection` parameter. (Specify the connection name as a region input parameter to the mail-service compose view.) The end user Mail Preferences does not display mail connections with shared credentials.

You can pass optional parameters to seed the compose message. For example, you can pass parameters to pre-populate fields like To, Cc, Bcc, From, Subject, and Content. Set parameters only for items you want to pre-populate. If you require an empty `ComposeView.jspx`, then no `setActionListener` is necessary. You must set all parameters on `pageFlowScope`.

Use the `scope` parameter to set the scope within which the compose view should be launched.

Use the `sendMailToGSMembers` parameter to select the option to send mail to all portal members.

Example 35–2 shows some parameters for the Mail Compose page (`ComposeView.jspx`):

Example 35–2 Parameters of the Mail Compose Page

```
<af:commandLink text="Compose Mail" action="sendMail">

    <af:setActionListener from="#{'john.doe@oracle.com'}"
to="#{pageFlowScope['collab.mail.compose.toList']}"/>
    <af:setActionListener from="#{'Mail......'}"
to="#{pageFlowScope['collab.mail.compose.subject']}"/>
    <af:setActionListener from="#{'Mail Service'}"
to="#{pageFlowScope['collab.mail.compose.content']}"/>
    <af:setActionListener from="#{'ruby@oracle.com'}"
to="#{pageFlowScope['collab.mail.compose.ccList']}" />
    <af:setActionListener from="#{'ruby@oracle.com'}"
to="#{pageFlowScope['collab.mail.compose.bccList']}" />
    <af:setActionListener from="#{'monty@oracle.com'}"
to="#{pageFlowScope['collab.mail.compose.from']}" />
    <af:setActionListener from="#{'text/html'}"
to="#{pageFlowScope['collab.mail.compose.contentType']}" />
    <af:setActionListener from="Shared-mail-connection-name"
to="${pageFlowScope['collab.mail.compose.useConnectionName']}" />

</af:commandLink>
```

Example 35–3 shows how to hide the recipients fields (like **To**, **Cc** and **Bcc**) by setting the following action listener in `ComposeView.jspx`:

Example 35–3 Hiding Recipient Fields in the Mail Compose Page

```
    <af:setActionListener from="#{'false'}"
to="#{pageFlowScope['collab.mail.message.showrecipients']}" />
```

35.3.2 Configuring the Number of Mail Messages Displayed

By default, the 50 most recent mail messages are displayed from your Inbox folder. Providing that your mail server supports the increase in memory cache that fetching additional mail requires, the administrator can change this to a higher number in the `adf-config.xml` file.

Add the `mail.messages.fetch.size` property as shown in Example 35–4:

Example 35–4 Increasing the Number of Mail Messages Displayed

```
<adf-collaboration-config xmlns="http://xmlns.oracle.com/webcenter/collab/config">

<service-config
serviceId="oracle.webcenter.collab.mail">
<property name="mail.messages.fetch.size" value="500"/>
</service-config>

</adf-collaboration-config>
```

Alternatively, your Fusion Middleware administrator can increase this value with the WLST command `setMailServiceProperty`.

This change applies to all users; that is, following Example 35–4, all users see 500 recent mail messages in their Inbox in the Framework application. Increasing the number of messages shown correspondingly increases the cache size on the Framework application. Take care to set this to a reasonable size.

35.3.3 Troubleshooting Mail

This section describes common problems and solutions for mail.

Problem

Users are not able to retrieve their mail messages or send mail messages from within the Portal Framework application.

Solution

Ensure the following:

- Ensure that a Mail connection exists in your application.
- Ensure that the required Mail connection is marked as the default connection.
- Ensure the mail server configured in the connection is up and running. You can try connecting from any other mail client to ensure that the connection details are correct.

Problem

The mail within your Portal Framework application requires users to log in, but users are not able to authenticate and do not see any content at runtime. When users access mail, it throws an ExtApp Authorization Exception.

Solution

Mail works in a non-secured Portal Framework application if, and only if, the Mail connection is configured to use an external application connection with public credentials. If your application is running in non-secured mode, then ensure that you have configured public credentials for your external application.

If you want your Portal Framework application to run in secure mode, then you must configure ADF security for your application.

Problem

When users receive mail in Portal Framework applications, message content is shown as an attachment (named `content.html`) rather than within the message body. This can occur if the mail server is running Microsoft Exchange Server 2007 and the "*Update Rollup 3 for Microsoft Exchange Server 2007*" is not yet installed.

Solution

Mail server administrators must download and install "*Update Rollup 3 for Microsoft Exchange Server 2007*" which fixes this issue. For more information, see `http://support.microsoft.com/kb/930468`.

36

Integrating Polls

This chapter explains how to integrate polling functionality into a Portal Framework application at design time.

This chapter includes the following topics:

- Section 36.1, "Introduction to Polls"
- Section 36.2, "Basic Configuration for Polls"
- Section 36.3, "Advanced Information for Polls"

For more information about using polls, see the "Adding Polls to a Portal" chapter in *Building Portals with Oracle WebCenter Portal*.

36.1 Introduction to Polls

WebCenter Portal and Framework application users can create, edit, and take online polls on your application pages. Polls let you survey your audience (such as their opinions and their experience level), check whether they can recall important information, and gather feedback on the efficacy of presentations.

This section includes the following subsections:

- Section 36.1.1, "Understanding Polls"
- Section 36.1.2, "Requirements for Polls"
- Section 36.1.3, "What Happens at Runtime"

36.1.1 Understanding Polls

In addition to taking available polls, users can do the following:

- Quickly create and publish polls.
- Customize an existing poll; for example, add or change questions, and publish (open) and close the poll
- Take a specific or the most recently-published poll
- View poll results
- See the status of all polls and available actions for each poll, such as edit, delete, publish, analyze, and clear results

Polls is integrated with instant messaging and presence in the Polls Manager.

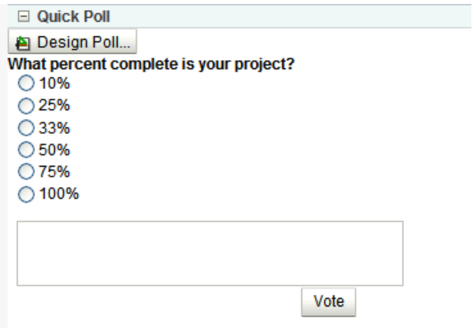
36.1.2 Requirements for Polls

In a Framework application, polls requires a connection to the WebCenter Portal database schema. For details about setting up a database connection, see Section 4.2.2, "Setting Up a Database Connection."

36.1.3 What Happens at Runtime

At runtime, users can quickly create polls with just a name and a question. Figure 36–1 shows a sample quick poll.

Figure 36–1 Quick Poll



⊟ Quick Poll

Design Poll...

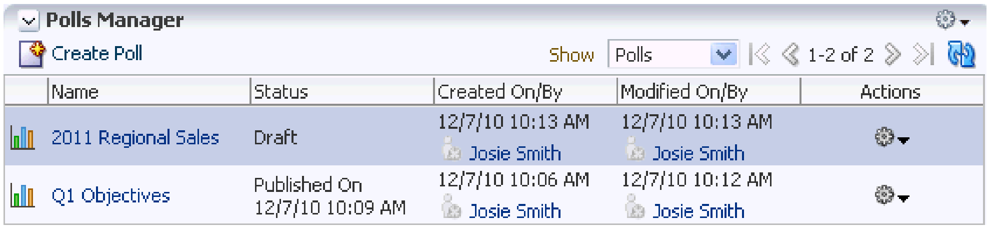
What percent complete is your project?

○ 10%
○ 25%
○ 33%
○ 50%
○ 75%
○ 100%

Vote

WebCenter Portal application administrators can access the Polls Manager, which lets you create polls with multiple questions or with templates. The Actions dropdown list lets continue designing the poll, publish polls, analyze results, clear results, and delete the poll (Figure 36–2).

Figure 36–2 Polls Manager



Polls Manager

Create Poll   Show Polls   1-2 of 2

Name	Status	Created On/By	Modified On/By	Actions
2011 Regional Sales	Draft	12/7/10 10:13 AM Josie Smith	12/7/10 10:13 AM Josie Smith	⚙
Q1 Objectives	Published On 12/7/10 10:09 AM	12/7/10 10:06 AM Josie Smith	12/7/10 10:12 AM Josie Smith	⚙

Polls created through the Polls Manager must be published and open to be taken. Users cannot take unpublished or closed polls.

For more information about using polls at runtime, see the "Adding Polls to a Portal" chapter in *Building Portals with Oracle WebCenter Portal*.

36.2 Basic Configuration for Polls

This section describes required steps for adding this to your application. It includes the following subsections:

- Section 36.2.1, "Setting up Connections for Polls"
- Section 36.2.2, "Adding Polls Functionality at Design Time"
- Section 36.2.3, "Setting Security for Polls"

36.2.1 Setting up Connections for Polls

Polls requires a connection to the database where the WebCenter Portal schema is installed. For details about setting up a database connection, see Section 4.2.2, "Setting Up a Database Connection."

36.2.2 Adding Polls Functionality at Design Time

This section explains a basic incorporation of polls. It includes the following sections:

- Section 36.2.2.1, "Polls Task Flows"
- Section 36.2.2.2, "How to Add the Quick Poll Task Flow to Your Page"
- Section 36.2.2.3, "How to Modify the Polls Task Flow Parameters"

36.2.2.1 Polls Task Flows

Polls task flows are described in Table 36–1.

Table 36–1 Polls Task Flows

Task Flow	Description
Poll - Quick Poll	This task flow displays a view that enables users to create one-question polls to be published immediately. Each quick poll needs its own Quick Poll task flow on the page.
Polls - Polls Manager	This task flow allows users to perform administrative operations on polls. Any user who has access to this task flow can perform the administrative operations, such as edit or delete the poll.
Polls - Take Polls	This task flow displays the most recently-published available poll, unless it is set to a specific poll in the `pollId` parameter.
Polls - View Poll Results	This task flow displays the results of a poll as a graph for the supplied `pollId`. This task flow works only if `pollId` is supplied.

36.2.2.2 How to Add the Quick Poll Task Flow to Your Page

The Quick Poll task flow display polls and provides tools to create, edit, and delete polls. It also provides controls for determining when a poll when it expires. This task flow lets you present polls to end users where manage controls are not needed.

To add the Quick Poll task flow to your WebCenter Portal Framework application:

1. Open the page on which you want to add polls functionality.
2. In the Resource Palette, expand **My Catalogs**, **WebCenter Portal - Services Catalog**, and **Task Flows**.
3. Drag **Polls - Quick Poll** from the Resource Palette and drop it onto the page inside of the `af:form` `begin` and `end` tags.
4. When prompted, select **Region** as the way to create the task flow (and confirm with **Add Library**). This operation may take a moment to complete.
5. Click **OK**.
6. Save and run your page.

36.2.2.3 How to Modify the Polls Task Flow Parameters

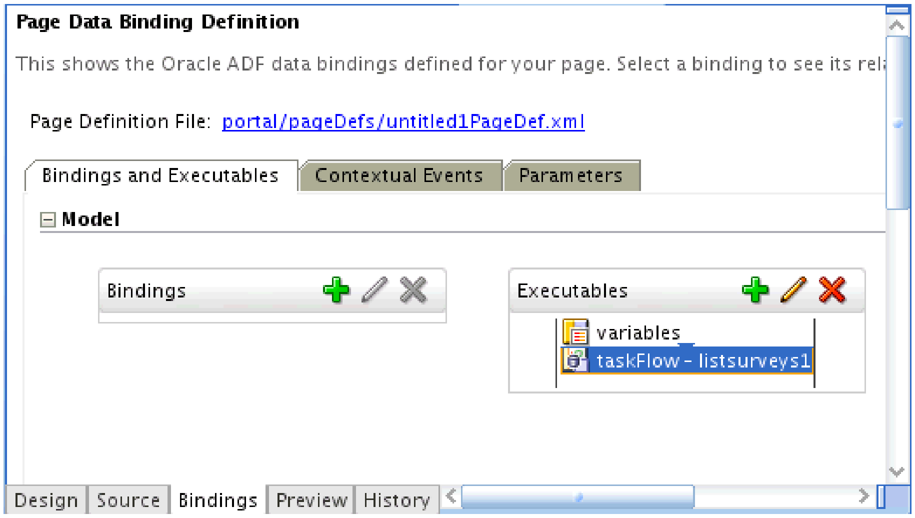
Polls task flows have optional task flow binding parameters.

In addition to providing required values for successful task flow rendering, you can use task flow parameters to customize the appearance and behavior of a task flow instance. For example, you can use parameter values to set which poll to display.

You can adjust the parameter values when you drop the task flows onto a page or after you have placed a task flow on a page:

1. Navigate to the Edit Task Flow Binding dialog by clicking the **Bindings** tab at the bottom of the page (next to the **Source** tab).
2. Under **Executables**, you'll see the task flow you added. Figure 36–4 shows an example of a Search task flow in the Executables section.

Figure 36–3 Page Data Binding Definition



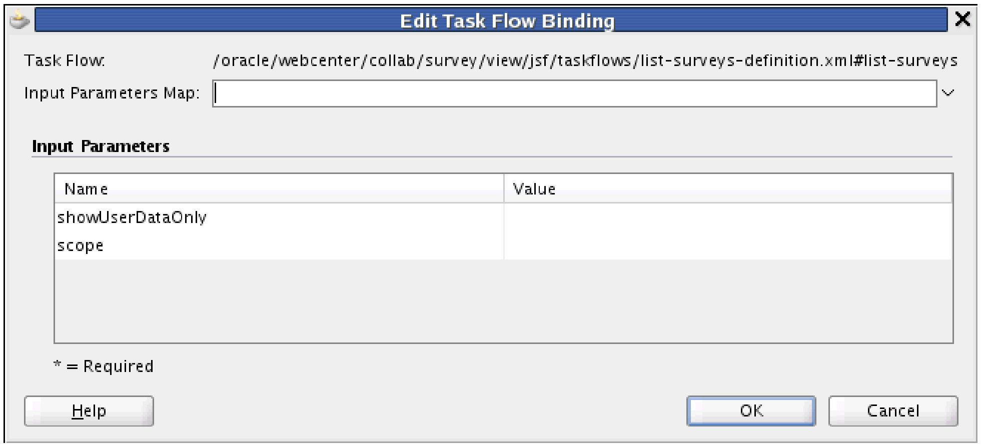
Page Data Binding Definition

This shows the Oracle ADF data bindings defined for your page. Select a binding to see its rel

Page Definition File: portal/pageDefs/untitled1PageDef.xml

3. Select the task flow, and next to the Executables heading, click the **Edit selected element** (pencil) icon.
4. In the Edit Task Flow Binding dialog Figure 36–4, revise the binding parameter values as required.

Figure 36–4 Edit Task Flow Binding Dialog for Polls Manager Task Flow



Edit Task Flow Binding

Task Flow: /oracle/webcenter/collab/survey/view/jsf/taskflows/list-surveys-definition.xml#list-surveys

Input Parameters Map:

Input Parameters

Name	Value
showUserDataOnly	
scope	

* = Required

5. When you are finished, click **OK.**
6. Save and run your page to see the results.

Table 36–2 describes the properties that are unique to the Polls task flows.

Table 36–2 Polls Task Flow Parameters

Property	Description
`scope`	The portal name from which polls are to be fetched. If this is supplied, then polls of that particular portal are shown. On the Home portal, when this parameter is not supplied, it fetches polls from all portals. This parameter appears in the properties for the Polls Manager task flow.
`showUserDataOnly`	This parameter determines whether to display all polls or only those polls created by the user. The default (No) is to show all polls. Set to Yes to display only those polls created by the user. If the `scope` parameter is specified, then this parameter works the same but within only that scope. This parameter appears in the properties for the Polls Manager task flow.
`pollId`	The poll to display. This parameter appears in the properties for the following task flows. ■ Take Polls ■ View Poll Results
`showInEditMode`	This parameter determines whether users can edit a quick poll. When a quick poll is in Edit mode, a Design Poll box for editing the poll appears. When a quick poll is not a Edit mode, the Design Poll box for editing is not visible. This parameter appears in the properties for the Quick Poll task flow.

36.2.3 Setting Security for Polls

Polls do not require security. Administrators control access to Polls task flows through the Resource Catalog, where they define the users and groups privileged to see polls. Security is driven by the page security on which the task flow exists or by the task flow permissions on that page. Any user who can see the task flow can edit the poll.

ADF security is configured by default if you created your application using WebCenter Portal's Framework application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."

36.3 Advanced Information for Polls

This section describes optional features available with polls. It includes the following subsections:

- Section 36.3.1, "How to Add the Polls Manager Task Flow"
- Section 36.3.2, "How to Add the Take Polls Task Flow"
- Section 36.3.3, "How to Add the View Poll Results Task Flow"
- Section 36.3.4, "Using the Polls Data Controls"

36.3.1 How to Add the Polls Manager Task Flow

The Polls Manager task flow provides a complete view of polls and perform actions on them.

To add this to your Framework application, follow the same instructions that you did for the Quick Poll task flow in Section 36.2.2, "Adding Polls Functionality at Design Time," but drag and drop Polls Manager onto the page.

36.3.2 How to Add the Take Polls Task Flow

This task flow displays published polls for users to take. It displays the most recently-published available poll, unless it is set to display a specific poll with the `pollId` parameter. After a user submits a response for that poll, it displays the next most recently-published poll.

To add this to your Framework application, follow the same instructions that you did for the Quick Poll task flow in Section 36.2.2, "Adding Polls Functionality at Design Time," but drag and drop Polls - Take Polls onto the page.

36.3.3 How to Add the View Poll Results Task Flow

The View Poll Results task flow displays the results of a poll as a graph for the poll supplied with the required `pollId` parameter.

To add this task flow to your Framework application, follow the same instructions that you did for the Quick Poll task flow in Section 36.2.2, "Adding Polls Functionality at Design Time," but drag and drop Polls - View Poll Results onto the page.

36.3.4 Using the Polls Data Controls

Use the Polls data controls to build a customized user interface for polls with a Framework application or a custom task flow.

Polls includes two data controls to customize the user interface:

- Take Poll Data Control
- Polls Manager Data Control

> **See Also:** Section 4.1.3, "Using WebCenter Portal Data Controls" for information on how to consume data controls

36.3.4.1 Take Poll Data Control

The Take Poll data control contains the following methods:

- createResponse
- createResponseForLatestAvailablePoll
- getPublishedPolls
- getResults
- saveResponse

36.3.4.1.1 createResponse This method lets users respond to a particular poll. Table 36–3 describes the required parameters for this method.

Table 36–3 createResponse Input Parameters

Parameter	Type	Description
`pollId`	String	The poll to display.

36.3.4.1.2 createResponseForLatestAvailablePoll This method lets users respond to the most recently-published poll. It has no parameters.

36.3.4.1.3 getPublishedPolls Table 36–4 describes the required parameters for this method.

Table 36–4 getPublishedPolls Input Parameters

Parameter	Type	Description
`startIndex`	Integer	The index of the first matching result that should be included in the result set (0-n ... zero based). This is used for pagination.
`numResults`	Integer	The number or results to display.

36.3.4.1.4 getResults This method gets the poll results for a particular poll. Table 36–5 describes the required parameters for this method.

Table 36–5 getResults Input Parameters

Parameter	Type	Description
`pollId`	String	The poll to display.

36.3.4.1.5 saveResponse Table 36–6 describes the required parameters for this method.

Table 36–6 saveResponse Input Parameters

Parameter	Type	Description
`response`	Response	The response object acquired from the data control calls to `createResponse` or `createResponseForLatestAvailablePoll`.

36.3.4.2 Polls Manager Data Control

The Polls Manager data control contains the following methods:

- addQuestion
- addQuestion
- closePoll
- closePollAfterDate
- closePollAfterDays
- closePollAfterResponses
- createPoll
- deletePoll
- editPoll
- editPoll
- findPoll
- getPolls
- getPollsByUser
- getPollsByUserCount
- publishPoll

- publishPollOnDate

36.3.4.2.1 addQuestion This method creates polls with multiple choice questions. Table 36–7 describes the required parameters for this method.

Table 36–7 addQuestion Input Parameters

Parameter	Type	Description
`pollId`	String	The poll to display.
`question`	String	The text of the question; for example, What is your favorite color?
`rowOptions`	String	Corresponding list of options for the question. This should be line-separated list of options.
`allowMultipleSelection`	Boolean	True to allow multiple options to be selected; false to allow only a single option selection.

36.3.4.2.2 addQuestion This method creates complex polls with matrix-type questions. Table 36–8 describes the required parameters for this method.

Table 36–8 addQuestion Input Parameters

Parameter	Type	Description
`pollId`	String	The poll to display.
`questionType`	Question Type	Question type, either: ■ Matrix of choices (only one answer per row) ■ Matrix of choices (multiple answers per row)
`question`	String	The text of the question; for example, What is your favorite color?
`rowOptions`	String	Corresponding list of options for the question. This should be line-separated list of options.
`columnOptions`	String	Column options.
`isOptional`	Boolean	True if the question is optional (that is, users can ignore answering it); false if question is mandatory.
`commentLabel`	String	Enables a comment field for users to provide feedback or enter personalized text with their answers.
`commentFieldHeight`	Integer	Size for the comment field. To capture feedback, set this to 3; otherwise, set it to 1. This parameter value depends on the type of answer expected in the comment field.

36.3.4.2.3 closePoll This method closes a particular poll. Table 36–9 describes the required parameters for this method.

Table 36–9 closePoll Input Parameters

Parameter	Type	Description
`pollId`	String	The poll to display.

36.3.4.2.4 closePollAfterDate This method closes a poll on a specific date. Table 36–10 describes the required parameters for this method.

Table 36–10 closePollAfterDate Input Parameters

Parameter	Type	Description
pollId	String	The poll to display.
date	Date	Date at which the poll should close.

36.3.4.2.5 closePollAfterDays This poll closes a poll at a set number of days after the poll is published. Table 36–11 describes the required parameters for this method.

Table 36–11 closePollAfterDays Input Parameters

Parameter	Type	Description
pollId	String	The poll to display.
days	Integer	Number of days, after the publish date, at which the poll should close.

36.3.4.2.6 closePollAfterResponses This method closes as poll after a set number of responses have been collected. Table 36–12 describes the required parameters for this method.

Table 36–12 closePollAfterResponses Input Parameters

Parameter	Type	Description
pollId	String	The poll to display.
responses	Integer	Number of responses at which the poll should close.

36.3.4.2.7 createPoll This method creates a quick poll. Table 36–13 describes the required parameters for this method.

Table 36–13 createPoll Input Parameters

Parameter	Type	Description
name	String	Name of the poll.
description	String	Description of the poll.

36.3.4.2.8 deletePoll This method deletes a particular poll. Table 36–14 describes the required parameters for this method.

Table 36–14 deletePoll Input Parameters

Parameter	Type	Description
pollId	String	The poll to display.

36.3.4.2.9 editPoll Table 36–15 describes the required parameters for this method.

Table 36–15 editPoll Input Parameters

Parameter	Type	Description
pollInstance	Poll	If a poll instance is directly edited, then that instance can be supplied for editing.

36.3.4.2.10 editPoll This method edits a particular poll. Table 36–16 describes the required parameters for this method.

Table 36–16 editPoll Input Parameters

Parameter	Type	Description
`pollId`	String	The poll to display.
`name`	String	Name of the poll.
`description`	String	Description of the poll.

36.3.4.2.11 findPoll This method finds a particular poll. Table 36–17 describes the required parameters for this method.

Table 36–17 findPoll Input Parameters

Parameter	Type	Description
`id`	String	Poll instance ID

36.3.4.2.12 getPolls This method displays all polls, as defined in its parameters. Table 36–18 describes the required parameters for this method.

Table 36–18 getPolls Input Parameters

Parameter	Type	Description
`startIndex`	Integer	The index of the first matching result that should be included in the result set (0-n ... zero based). This is used for pagination.
`numResults`	Integer	The number or results to display.

36.3.4.2.13 getPollsByUser This method displays polls created by a particular user. Table 36–19 describes the required parameters for this method.

Table 36–19 getPollsByUser Input Parameters

Parameter	Type	Description
`createdBy`	String	User name of the person who created the poll.
`startIndex`	Integer	The index of the first matching result that should be included in the result set (0-n ... zero based). This is used for pagination.
`numResults`	Integer	The number or results to display.

36.3.4.2.14 getPollsByUserCount Table 36–20 describes the required parameters for this method.

Table 36–20 getPollsByUserCount Input Parameters

Parameter	Type	Description
`createdBy`	String	User name of the person who created the poll.

36.3.4.2.15 publishPoll This method publishes a particular poll. Table 36–21 describes the required parameters for this method.

Table 36–21 publishPoll Input Parameters

Parameter	Type	Description
pollId	String	The poll to display.

36.3.4.2.16 publishPollOnDate This method publishes a poll on a specific date. Table 36–22 describes the required parameters for this method.

Table 36–22 publishPollOnDate Input Parameters

Parameter	Type	Description
pollId	String	The poll to display.
date	Date	Date at which the poll should be published.

Part VI

Working with People Connections

Part VI contains the following chapters:

37

Introducing the People Connections Service

This chapter describes the task flows associated with the People Connections service. The People Connections service provides social networking tools that enhance connection and communication in a project team and throughout an enterprise. The service provides its social networking features through Activity Stream, Connections, Feedback, Message Board, Profile, and Publisher task flows.

This chapter includes the following topics:

- Section 37.1, "Overview of the People Connections Service"
- Section 37.2, "Troubleshooting the People Connections Service"

37.1 Overview of the People Connections Service

The People Connections service provides social networking tools for creating, interacting with, and tracking the activities of one's connections. The following features enable users to manage their personal profiles, access the profiles of other users, provide ad hoc feedback, post messages, track activities, and connect with others:

- **Activity Stream** for viewing user activities generated through application or social networking actions.
- **Connections** for connecting to other application users to share information, comment on performance, exchange messages, and track activity
- **Feedback** for giving *ad hoc* performance feedback to other users
- **Message Board** for posting messages to other users
- **Profile** for entering personal contact information and viewing the contact information of other users
- **Publisher** for publishing status messages and posting files and links

In a production environment, an enterprise can leverage its back-end identity store as a means of providing People Connections with a population of potential connections. In a development environment, developers can add test-users to the `jazn-data.xml` file.

> **See Also:** For information about connecting to a back-end (LDAP) identity store for the production version of your application, see the "Configuring the Identity Store" chapter in *Administering Oracle WebCenter Portal*. For information about creating test users in `jazn-data.xml`, see Section 22.2.2, "How to Define Roles and Grant Privileges in the jazn-data.xml File."

This section provides an overview of the People Connections service. It includes the following subsections:

- Section 37.1.1, "People Connections Service Task Flows"
- Section 37.1.2, "People Connections Service Requirements"

37.1.1 People Connections Service Task Flows

The features of the People Connections service fall into five categories. Each category includes a set of task flows that expose People Connections features to your end users. The Publisher task flow does not belong to these categories, but rather, works in concert with the Activity Stream.

This section introduces these categories. It includes the following subsections:

- Section 37.1.1.1, "Activity Stream"
- Section 37.1.1.3, "Feedback"
- Section 37.1.1.4, "Message Board"
- Section 37.1.1.2, "Connections"
- Section 37.1.1.5, "Profile"
- Section 37.1.1.6, "The Publisher Task Flow"

> **See Also:** For information about the People Connections service at runtime, see the associated chapters in *Using Oracle WebCenter Portal*.
>
> For information about People Connections task flows, see Section 37.1.1, "People Connections Service Task Flows."

37.1.1.1 Activity Stream

The Activity Stream feature tracks the application activities of a user's connections. Table 37–1 lists the types of activities that can be tracked by the Activity Stream.

Table 37–1 Activities Tracked by Activity Stream

Service	Tracked Activities
Announcements	■ Create announcement ■ Edit announcement
Blogs	■ Create blog ■ Update blog
Connections	■ Invitations to connect ■ People are connected
Discussions	■ Create forum ■ Create topic ■ Reply to topic
Documents	■ Create document ■ Edit document ■ Add tag ■ Remove tag
Events	■ Create an event ■ Edit an event

Table 37–1 (Cont.) Activities Tracked by Activity Stream

Service	Tracked Activities
Feedback	■ Feedback left ■ Feedback received
Lists	■ Create a list ■ Add a row to a list ■ Edit a list row
Message Board	■ Message left ■ Message received
Pages	The following activities are tracked when they are performed within the service framework scope (for example, if a user creates pages under `/myapp/mypages/`, the page operations are not tracked): ■ Create page ■ Edit page ■ Delete page ■ Add tag
Profiles	■ Photo updated ■ Profile updated ■ Personal status note updated
Tagging	■ Add tag ■ Remove tag

Activity Stream compares somewhat to the Recent Activities service, which also tracks and reports on application activities (for more information, see Chapter 51, "Integrating Recent Activities"). Both track the application activities of integrated services, though Activity Stream tracks a broader range of services. For example, Recent Activities tracks the Documents (including wikis and blogs), Announcements, Discussions, and Page services. Activity Stream tracks these services as well as People Connections. Recent Activities tracks activities no matter who performs the action. Activity Stream tracks activities performed by a user's connections and includes information about who performed the activity. Recent Activities does not include names.

The basic difference between these two services can be summarized as follows: Recent Activities provides an overview of what is happening in an application. Activity Stream provides an overview of what is happening with a user's connections.

The Publisher task flow works in concert with Activity Stream to provide content in the form of user messages. A message posted through the Publisher task flow is published to the Activity Streams of the user who entered it and that user's connections.

Activity Stream messages may include attachments, such as a file or a link. Depending on a file's mime type, Activity Stream allows for displaying a preview of such attachments. Activity Stream previews files through either a native web format or through UCM slide rendition. The previewer used depends on the mime type of the file to be previewed.

The mime types that use the native web format include:

- `image`

- `htm`
- `text`

The mime types that use UCM slide rendition include:

- `pdf`
- `powerpoint`
- `powerpnt`
- `pptx`

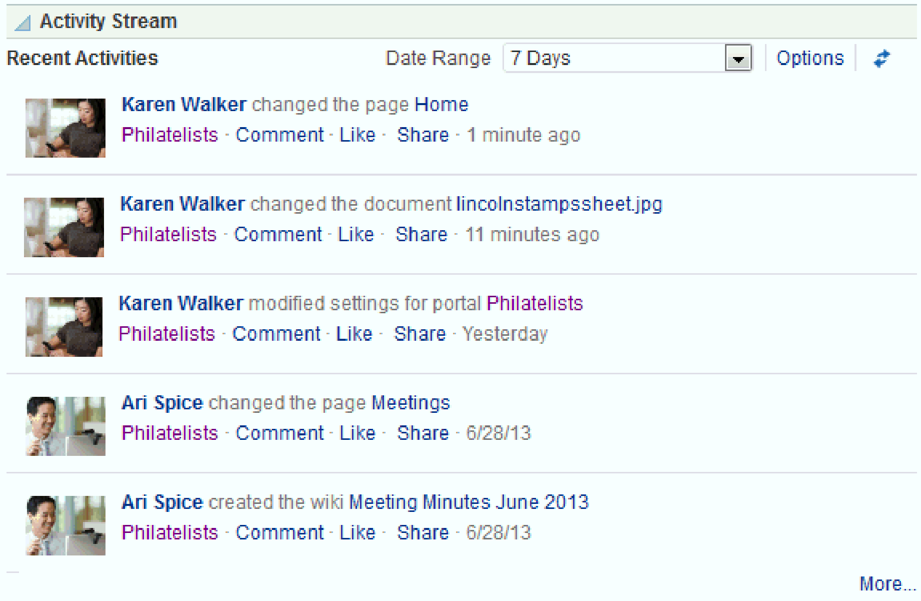
> **Note:** PDF file previews are available in Activity Stream when the mime type is `pdf`, `webContextRoot` is specified in the UCM connection, and the WebCenter Portal application is accessed through an Oracle HTTP Server.

The mime types shown in these bullet lists are the only mime types that are previewed. Other mime types appear as links. The mime types `docx` and `xlsx` are *not* previewed in Activity Stream. You can set a parameter associated with an Activity Stream task flow instance to omit file previews (for more information, see Section 39.3, "People Connections Task Flow Binding Parameters").

Two Activity Stream task flows are available through the Resource Palette:

- Activity Stream—Provides users with the main view of the most recent activities of their connections (Figure 37–1).

Figure 37–1 Activity Stream Task Flow



Activity Stream

Recent Activities

Date Range: 7 Days

Options

Karen Walker changed the page Home
Philatelists · Comment · Like · Share · 1 minute ago

Karen Walker changed the document lincolnstampssheet.jpg
Philatelists · Comment · Like · Share · 11 minutes ago

Karen Walker modified settings for portal Philatelists
Philatelists · Comment · Like · Share · Yesterday

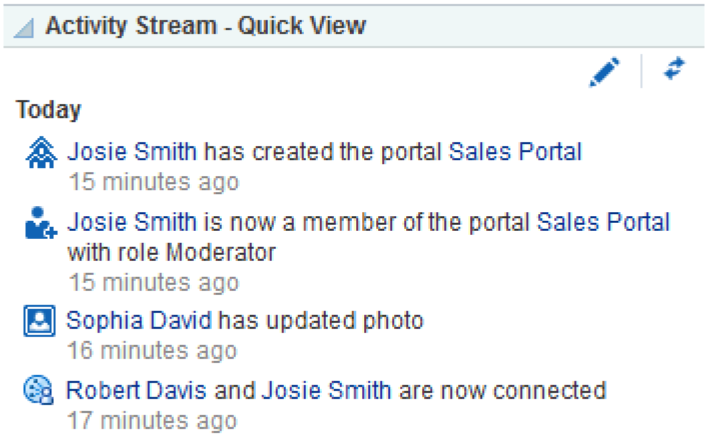
Ari Spice changed the page Meetings
Philatelists · Comment · Like · Share · 6/28/13

Ari Spice created the wiki Meeting Minutes June 2013
Philatelists · Comment · Like · Share · 6/28/13

More...

- Activity Stream - Quick View—Provides users with a truncated view of streamed activities, where only the most recent of their connections' activities are shown (Figure 37–2). Users who want to see all activities can click a **More** link to navigate to the main view (Activity Stream) of the task flow.

Figure 37–2 Activity Stream - Quick View Task Flow



Activity Stream - Quick View

Today

Josie Smith has created the portal Sales Portal
15 minutes ago

Josie Smith is now a member of the portal Sales Portal with role Moderator
15 minutes ago

Sophia David has updated photo
16 minutes ago

Robert Davis and Josie Smith are now connected
17 minutes ago

> **See Also:** For information about Activity Stream task flows at runtime, see the "Tracking Portal Activities" chapter in *Using Oracle WebCenter Portal*.

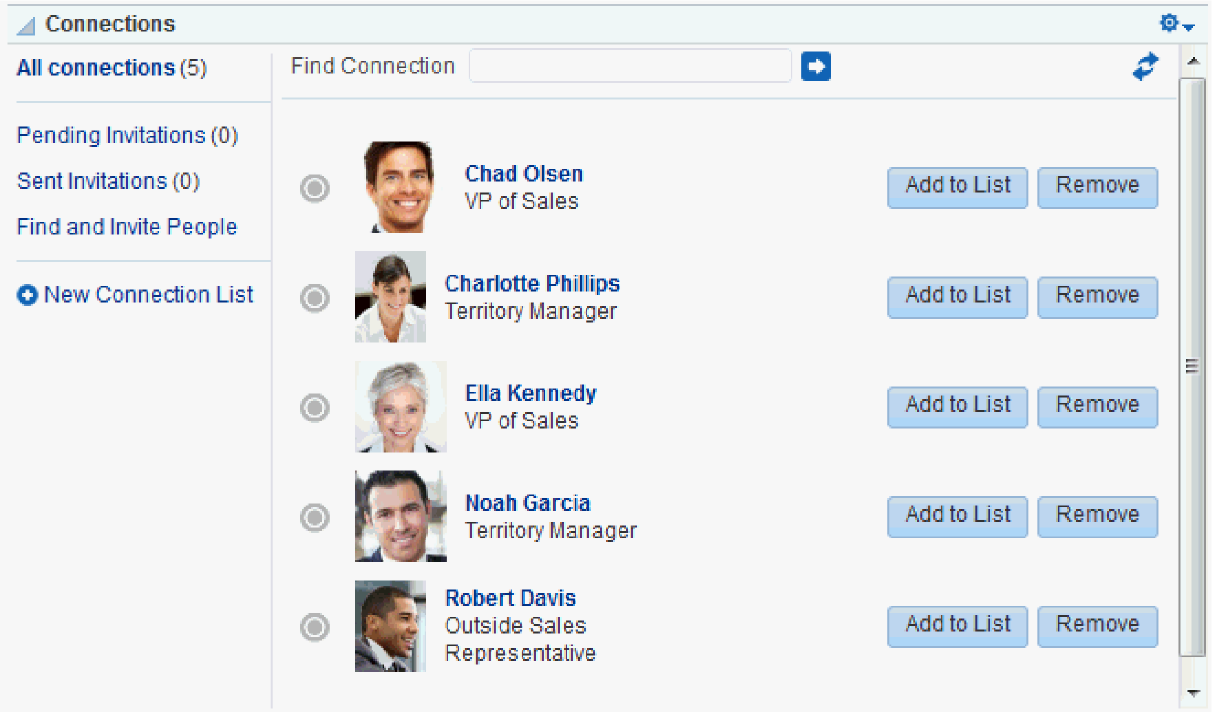
37.1.1.2 Connections

Connections provides users with a means of managing their own connections and viewing the connections of others. Use Connections to collect business friends and contacts into one or more smaller social groups. Use connections lists to manage the way your connections are displayed.

The following Connections task flows are available through the Resource Palette:

- Connections—Provides users with a means of viewing and managing their connections, creating connections lists, and sending and responding to invitations to connect (Figure 37–3).

Figure 37–3 Connections Task Flow

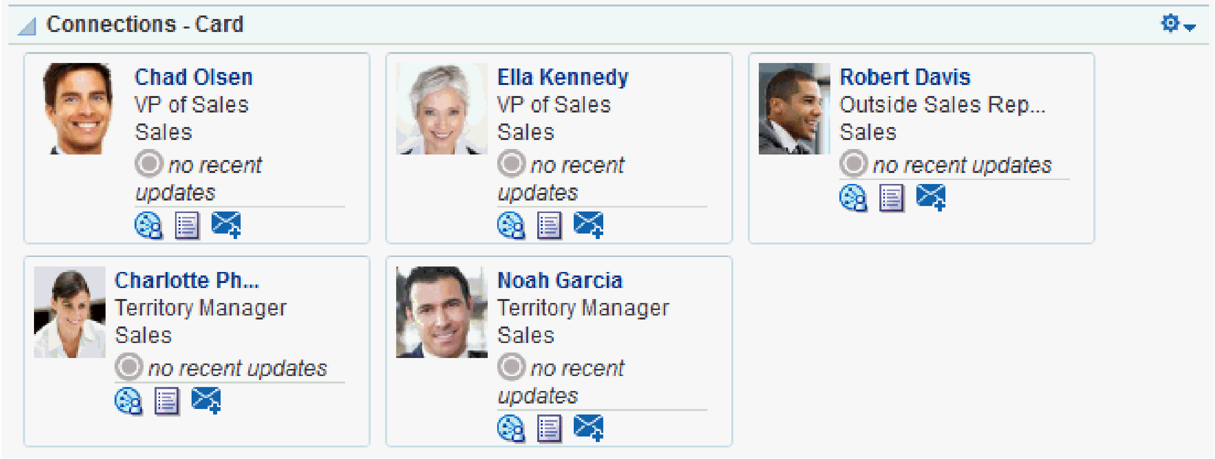


- Connections - Card—Provides a choice of the following views:
  - `vcard` displays a connection's photo, job title, and status message (Figure 37–4).
  - `iconic` displays a connection's photo and user name.
  - `list` displays connections in a list, with each list row showing the profile photo, user name, job title, and an **Add to List** button.
  - `tiled` renders the connection's personal Profile photo and shows the user name and job title beside the photo.

  Tip: In all views, the name links to a summary view of the user's Profile.

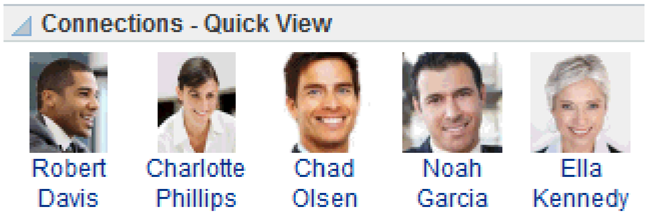
  Select one of these views through task flow bindings (for more information, see Chapter 39, "People Connections Task Flow Binding Parameters").

Figure 37–4 Connections - Card Task Flow



- Connections - Quick View—Provides users with a view of their connections' uploaded profile photos and a link to a summary view of their Profiles (Figure 37–5).

Figure 37–5 Connections - Quick View Task Flow



> **See Also:** For information about Connections task flows at runtime, see the "Managing Your Contacts" chapter in *Using Oracle WebCenter Portal*.

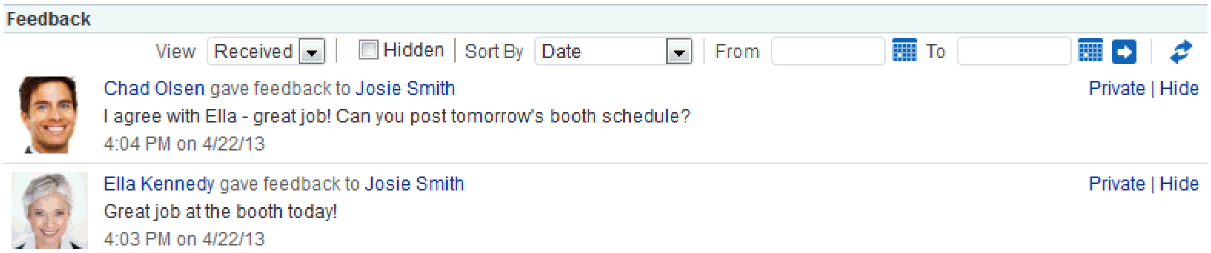
37.1.1.3 Feedback

Feedback provides users with a means of viewing, posting, and managing feedback. By default, users can view feedback in their own Feedback views. Users can view and post feedback in other users' Feedback views when given the proper permissions.

Two Feedback task flows are available through the Resource Palette:

- Feedback—Provides users with the main view of the Feedback task flow. The main view contains controls for viewing, posting, sorting, and filtering Feedback—both given and received—and for hiding received Feedback (Figure 37–6).

Figure 37–6 Feedback Task Flow



Feedback

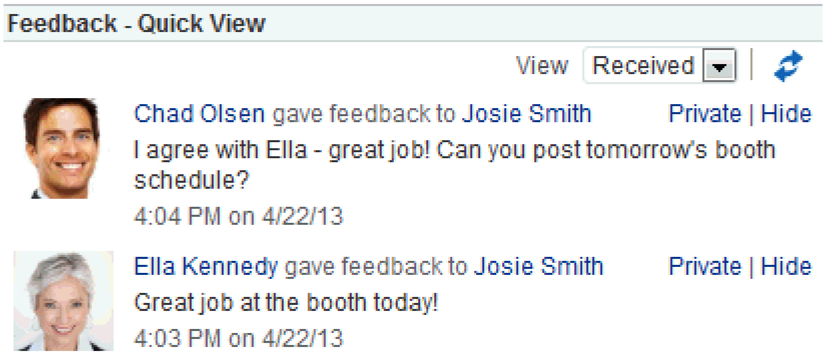
View Received | □ Hidden | Sort By Date | From To

Chad Olsen gave feedback to Josie Smith Private | Hide
I agree with Ella - great job! Can you post tomorrow's booth schedule?
4:04 PM on 4/22/13

Ella Kennedy gave feedback to Josie Smith Private | Hide
Great job at the booth today!
4:03 PM on 4/22/13

- Feedback - Quick View—Provides users with a truncated view of the Feedback task flow, where only the most recent posts are shown (Figure 37–7). When there are more posts than can be displayed in the initial view, users can click a **More** link to navigate to the main view of the Feedback task flow. When user `A` accesses user `B`'s view of Feedback - Quick View, user `A` additionally sees an **Add Feedback** option.

Figure 37–7 Feedback - Quick View Task Flow



Feedback - Quick View

View Received

Chad Olsen gave feedback to Josie Smith Private | Hide
I agree with Ella - great job! Can you post tomorrow's booth schedule?
4:04 PM on 4/22/13

Ella Kennedy gave feedback to Josie Smith Private | Hide
Great job at the booth today!
4:03 PM on 4/22/13

> **See Also:** For information about Feedback task flows at runtime, see the "Working with Feedback and the Message Board" chapter in *Using Oracle WebCenter Portal*.

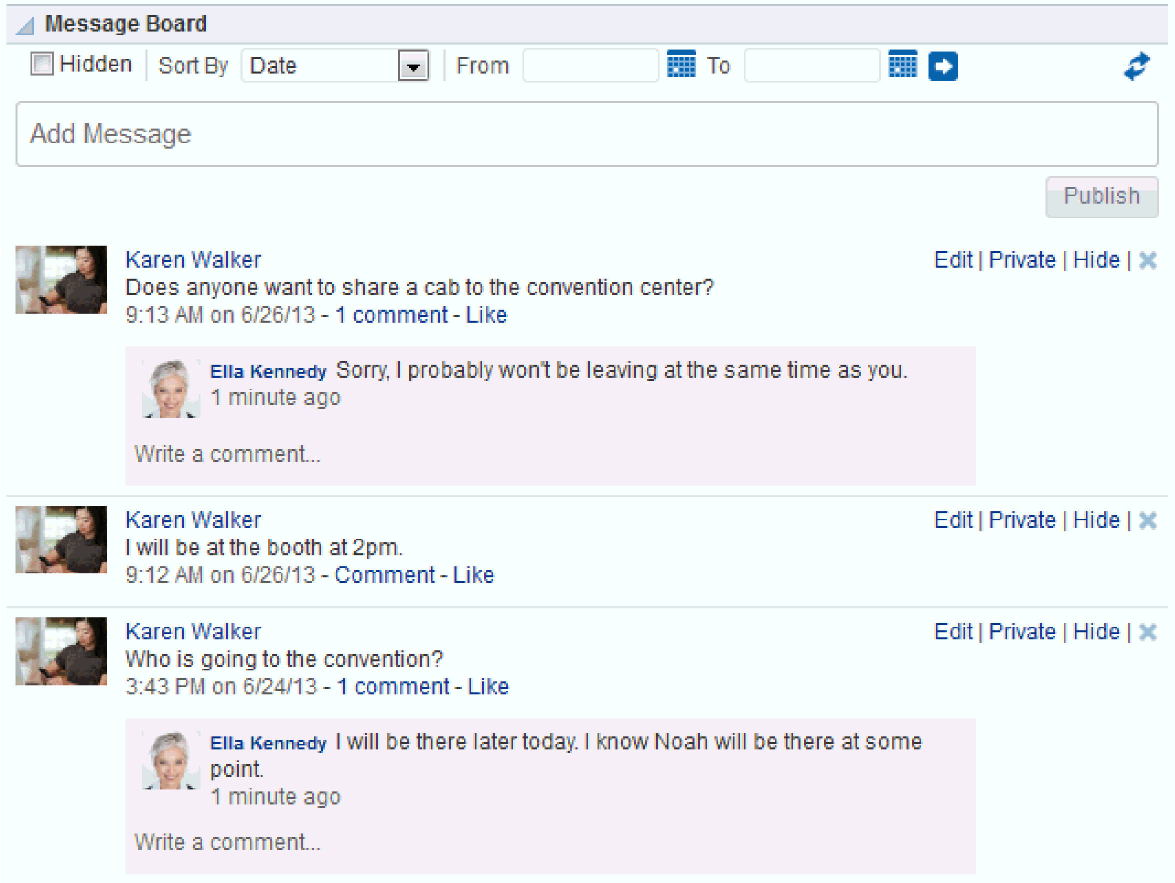
37.1.1.4 Message Board

Message Board provides a means of viewing and posting messages and attachments to Message Boards and Activity Streams.

Two Message Board task flows are available through the Resource Palette:

- Message Board—Provides users with the main view of Message Board messages and a means of adding, viewing, updating, hiding, deleting, and managing your view of messages, and for marking messages as private and sharing private messages (Figure 37–8).

Figure 37–8 Message Board Task Flow



Karen Walker
Does anyone want to share a cab to the convention center?
9:13 AM on 6/26/13 - 1 comment - Like

Ella Kennedy Sorry, I probably won't be leaving at the same time as you.
1 minute ago

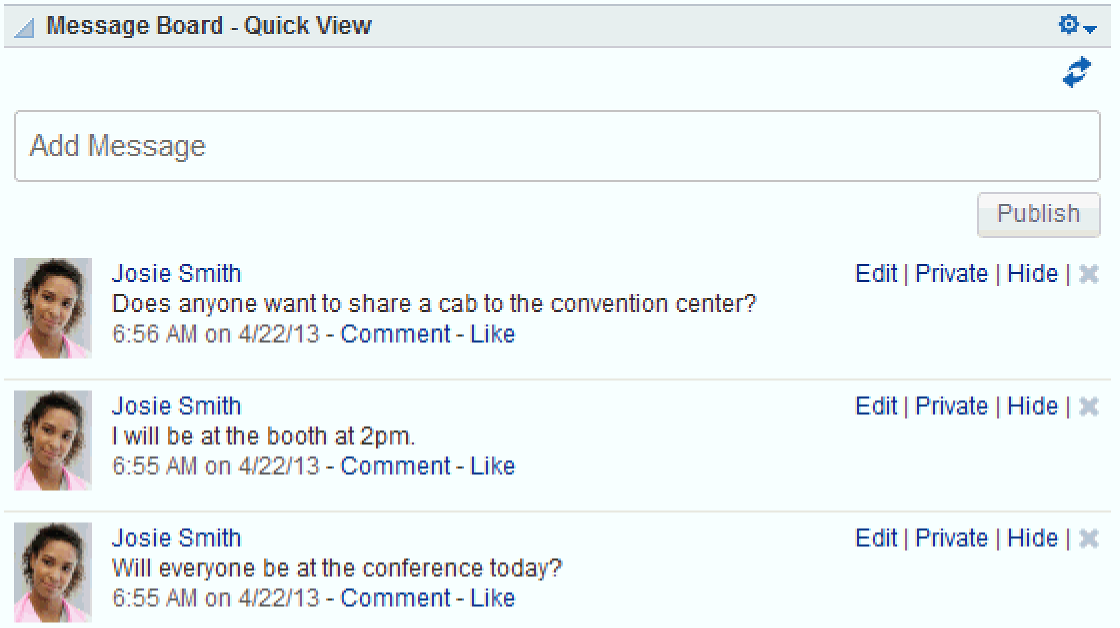
Karen Walker
I will be at the booth at 2pm.
9:12 AM on 6/26/13 - Comment - Like

Karen Walker
Who is going to the convention?
3:43 PM on 6/24/13 - 1 comment - Like

Ella Kennedy I will be there later today. I know Noah will be there at some point.
1 minute ago

- Message Board - Quick View—Provides users with a truncated view of Message Board messages and a means of adding, viewing, updating, hiding, and deleting messages, and for marking messages as private and sharing private messages (Figure 37–9). Users can click a **More** link to navigate to the Detailed View.

Figure 37–9 Message Board - Quick View Task Flow



Message Board - Quick View

Add Message

Publish

Josie Smith
Does anyone want to share a cab to the convention center?
6:56 AM on 4/22/13 - Comment - Like
Edit | Private | Hide |

Josie Smith
I will be at the booth at 2pm.
6:55 AM on 4/22/13 - Comment - Like
Edit | Private | Hide |

Josie Smith
Will everyone be at the conference today?
6:55 AM on 4/22/13 - Comment - Like
Edit | Private | Hide |

See Also: For information about Message Board task flows at runtime, see the "Working with Feedback and the Message Board" chapter in *Using Oracle WebCenter Portal*.

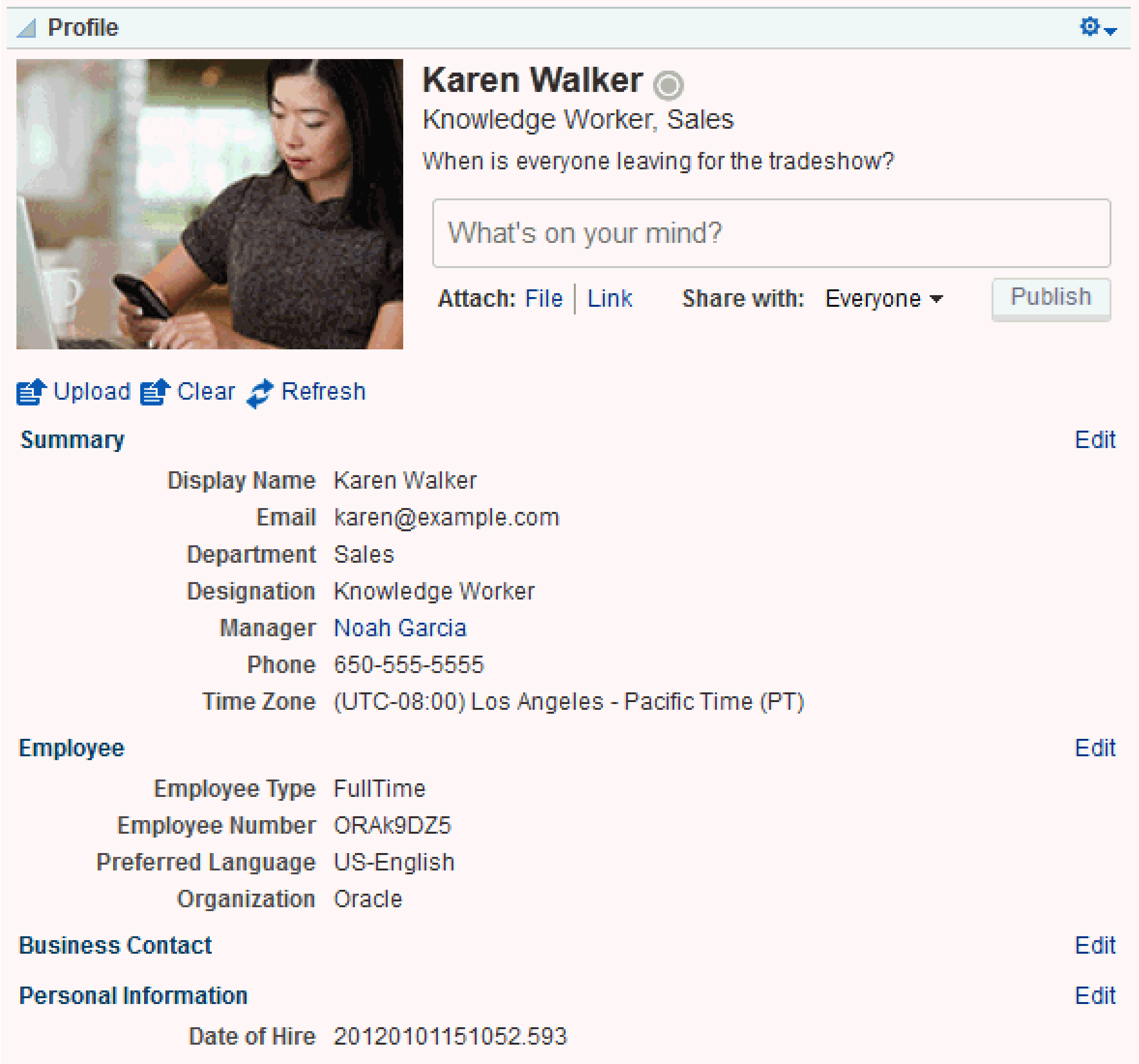
37.1.1.5 Profile

Profile provides users with a variety of views into their own and other users' personal profile information. Such information can include a user's email address, phone number, office location, department, manager, direct reports, and so on. Profile takes the bulk of its information from the back-end identity store that provides your WebCenter Portal application with its users. Additionally, Profile may offer opportunities for altering some of this information and for providing additional data not included in the identity store.

Three Profile task flow are available through the Resource Palette:

- Profile—Exposes a user's profile details, such as a user's email address, phone number, office location, department, manager, direct reports, and so on. It also exposes any personal image a user may have provided and the user's personal status message (Figure 37–10).

Figure 37–10 Profile Task Flow



Karen Walker

Knowledge Worker, Sales

When is everyone leaving for the tradeshow?

What's on your mind?

Summary

Display Name	Karen Walker
Email	karen@example.com
Department	Sales
Designation	Knowledge Worker
Manager	Noah Garcia
Phone	650-555-5555
Time Zone	(UTC-08:00) Los Angeles - Pacific Time (PT)

Employee

Employee Type	FullTime
Employee Number	ORAk9DZ5
Preferred Language	US-English
Organization	Oracle

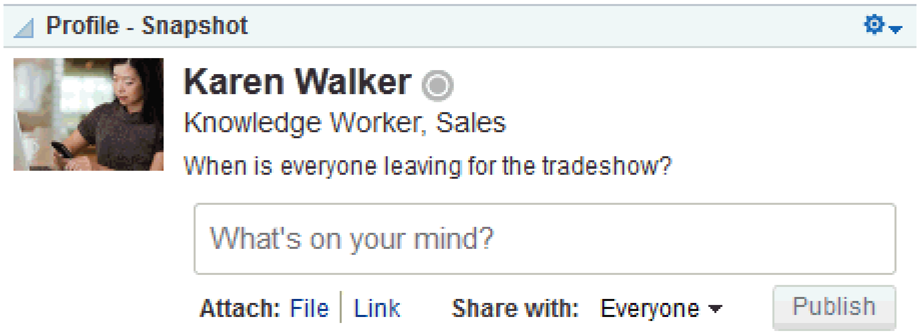
Business Contact

Personal Information

Date of Hire	20120101151052.593

- Profile - Snapshot—Exposes any personal image a user may have uploaded and provides a means of publishing messages, files, and links to a selected audience (Figure 37–11).

Figure 37–11 Profile - Snapshot Task Flow



Karen Walker

Knowledge Worker, Sales

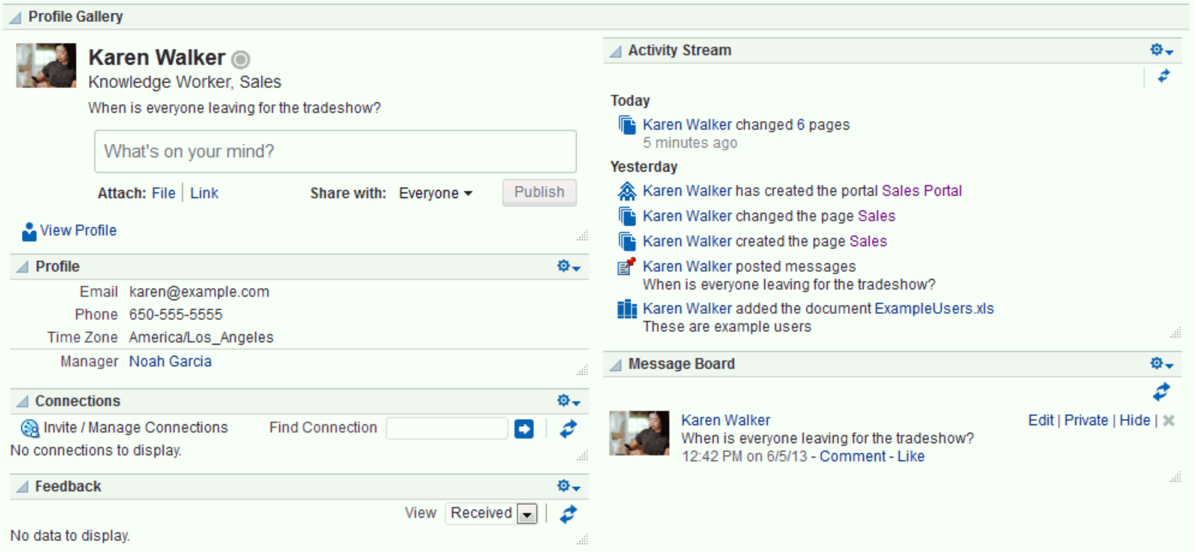
When is everyone leaving for the tradeshow?

What's on your mind?

Note: To enable users to upload anything to your ADF-based application at runtime, the page on which you have placed the upload task flow must have the `usesUpload` attribute set on the form. Additionally, for profile images, you must set the task flow binding parameter `photoUploadAllowed` to `true`. For more information, see the Note at the end of Section 38.2, "How to Add People Connections Task Flows to a Page," and see Chapter 39, "People Connections Task Flow Binding Parameters."

- Profile Gallery—Provides a summary view of each People Connections task flow (Figure 37–12). For example, it includes Activity Stream - Quick View, Connections - Quick View, and so on.

Figure 37–12 Profile Gallery Task Flow



When is everyone leaving for the tradeshow?

Email karen@example.com
Phone 650-555-5555
Time Zone America/Los_Angeles
Manager Noah Garcia

No connections to display.

No data to display.

Karen Walker changed 6 pages
5 minutes ago

Karen Walker has created the portal Sales Portal
Karen Walker changed the page Sales
Karen Walker created the page Sales
Karen Walker posted messages
When is everyone leaving for the tradeshow?
Karen Walker added the document ExampleUsers.xls
These are example users

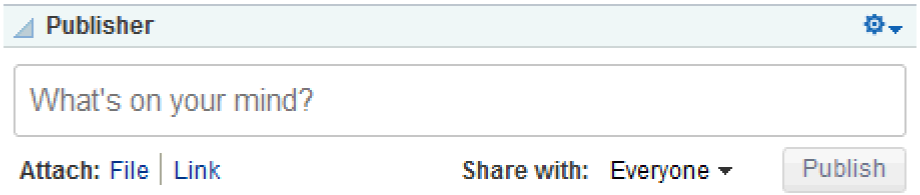
Karen Walker
When is everyone leaving for the tradeshow?
12:42 PM on 6/5/13 - Comment - Like

See Also: For information about Profile task flows at runtime, see the "Managing Your Profile" chapter in *Using Oracle WebCenter Portal*.

37.1.1.6 The Publisher Task Flow

The Publisher task flow works in concert with Activity Stream. Users enter content into Publisher, which is then published to the Activity Stream of the user who posted it as well as to the Activity Streams of that user's connections (Figure 37–13).

Figure 37–13 Publisher Task Flow



> **See Also:** For information about the Publisher task flow at runtime, see the "Sharing Messages, Files, and URLs" section in *Using Oracle WebCenter Portal*.

37.1.2 People Connections Service Requirements

For a successful integration of People Connections with your WebCenter Portal Framework application, ensure that the following steps have been taken:

1. Create a WebCenter Portal Framework application (for more information, see Section 6.1, "Creating a New WebCenter Portal Framework Application").
2. Set up the WebCenter schema, and create a database connection to it (for more information, see Chapter 4, "Preparing Your Application for WebCenter Portal Tools and Services").
3. Create a JSF (`.jspx`) page (for more information, see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application").
4. Secure your application and create some test users (for more information, see Chapter 74, "Securing Your WebCenter Portal Framework Application" and Section 22.2.2, "How to Define Roles and Grant Privileges in the jazn-data.xml File").
5. Drag and drop a People Connections task flow onto your page (for more information, see Section 38.2, "How to Add People Connections Task Flows to a Page").
6. Provide required values for task flow bindings (for more information, see Chapter 39, "People Connections Task Flow Binding Parameters").
7. Run the page.
8. When required, provide the user name and password of a test user you created at Step 4.

37.2 Troubleshooting the People Connections Service

This section provides information to assist you in troubleshooting problems you may encounter while using the People Connections service.

People Connections Task Flows Take Up the Full Browser, Even When Empty

This problem might arise if you are using Internet Explorer, version 8 (IE8). In IE8, go to **Tools**, **Compatibility View Settings**. In the Compatibility View Settings dialog, clear the following check boxes:

- Display intranet sites in Compatibility View
- Display all websites in Compatibility View

New Profile Image is Not Shown

Changes to a Profile image may not be rendered immediately due to a stale WebCenter Database cache. Clicking the **Refresh** icon under the stale image will cause the image to update.

38

Basic Configuration for the People Connections Service

This chapter describes how to work with the People Connections service, including adding People Connections task flows to a page, setting People Connections security, and configuring site-level People Connections settings.

This chapter includes the following topics:

- Section 38.1, "How to Set Up a Database Connection for the People Connections Service"
- Section 38.2, "How to Add People Connections Task Flows to a Page"
- Section 38.3, "Setting Security for the People Connections Service"
- Section 38.4, "Establishing Site-Level Settings for People Connections Features"

38.1 How to Set Up a Database Connection for the People Connections Service

For information about setting up a database connection in support of Oracle WebCenter Portal tools and services, see Section 4.2.2, "Setting Up a Database Connection."

38.2 How to Add People Connections Task Flows to a Page

This section describes how to add a People Connections task flow to an application page. The steps provided here are largely the same for all People Connections task flows. Differences are noted.

To add People Connections task flows to your WebCenter Portal Framework application:

1. Prepare your application as described in Section 37.1.2, "People Connections Service Requirements."
2. Open the page on which to add a People Connections task flow.
3. In the Resource Palette, open **My Catalogs**, then **WebCenter Portal - Services Catalog**, then the **Task Flows** folder.
4. Drag and drop a task flow (for example, Connections - Quick View) onto the JSF (`.jspx`) page.
5. Select **Region** from the resulting context menu.

It may ask whether you want to add the People Connections library to the project. Confirm by clicking **Add Library**.

6. In the Edit Task Flow Binding dialog, specify parameter values for the task flow.

   For example, for Connections - Quick View, the parameter `userid` represents the name of the current user at runtime. You can specify an EL expression for the parameter that will evaluate to the currently logged-in user. For example, for `userid`, enter `#{securityContext.userName}`. For more information, see Chapter 39, "People Connections Task Flow Binding Parameters."

7. Click **OK**.

   The task flow is added to the page, and the ViewController project's libraries are configured to run the task flow.

8. Save and run your page to the browser.

Note: To enable users to upload anything to your ADF-based application at runtime, the page on which you have placed the task flow must have the `usesUpload` attribute set on the form. For example, to enable the upload of a document to the document library or a photo to a profile, add the following to the relevant page:

```
<af:form usesUpload="true">
  …
  <af:region value="#{bindings.profile1.regionModel}"/>
  …
</af:form>
```

Additionally, to enable the upload of a profile snapshot, the task flow binding parameter `photoUploadAllowed` must be set to `true`. For more information, see Chapter 39, "People Connections Task Flow Binding Parameters."

38.3 Setting Security for the People Connections Service

Because People Connections features are centered around users, application security must be set up for successful use of the service. Ideally, test users are also in place to enable you to interact in a meaningful way with each feature. Each feature in the People Connections service can be secured separately.

- ADF security is configured by default when you create your application using the WebCenter Portal Application template. For details about how to implement a basic security solution for your WebCenter Portal application, see Section 74.3, "Configuring ADF Security."

- To create test users, follow the steps outlined in Section 22.2.2, "How to Define Roles and Grant Privileges in the jazn-data.xml File."

  Once you have added test users, you can add additional user attributes, such as `business_email`, `title`, or `department`:

  1. Open the `jazn-data.xml` file.

     Tip: You will find the `jazn-data.xml` file in the Application Resources panel in the META-INF folder under Descriptors.

  2. Select the tab for **Source** at the bottom of the main content area.

3. Inside the `<user>` node for a selected user, insert the following:

```
<property name="[property-name]" value="[property-value]"/>
```

For example, to add `business_email` as `monty@example.com` for the user `monty`, add:

```
<user>
     <name>monty</name>
     <display-name>monty</display-name>
     <credentials>{903}EfEepsY6I/TrKthpcmjJIsrlP36Ysr/j</credentials>
     <property name="business_email" value="monty@example.com"/>
</user>
```

38.4 Establishing Site-Level Settings for People Connections Features

Two scripts are available to configure and revise People Connections site-level settings:

```
RCUHOME/rcu/integration/webcenter/sql/oracle/settings-insert.sql

RCUHOME/rcu/integration/webcenter/sql/oracle/settings-update.sql
```

The variable *`RCUHOME`* refers to your install location of the Resource Creation Utility (RCU). The RCU may be used in setting up the WebCenter schema and is packaged with the Oracle JDeveloper ship home. `RCUHOME` is the root folder where the RCU is installed.

This section describes the scripts and provides information about the types of settings they control. It includes the following subsections:

- Section 38.4.1, "Understanding the People Connections Site-Level Setting Scripts"
- Section 38.4.2, "Supported Site-Level Settings for People Connections Features"
- Section 38.4.3, "Example: Configuring Connections to Accept Invitations Automatically"

38.4.1 Understanding the People Connections Site-Level Setting Scripts

All site-level settings for People Connections features are stored in the WebCenter schema table `WC_PPL_COMMON_SETTING`. Out-of-the-box, this table does not contain any setting values. In the absence of values, the application assumes default values. To change the value of any setting, the setting must first be inserted into this table and then updated with the desired value. Two SQL scripts enable you to perform these steps in their proper sequence.

This section describes how to prepare and run the People Connections site-level settings scripts. It includes the following subsections:

- Section 38.4.1.1, "Preparing and Running settings-insert.sql"
- Section 38.4.1.2, "Preparing and Running settings-update.sql"

38.4.1.1 Preparing and Running settings-insert.sql

Before you can change People Connections site-level settings, you must run the `settings-insert.sql` script once. The script has `INSERT` statements for all supported settings. All `INSERT` statements are commented out by default. Before you run the script, you must prepare it by uncommenting all the settings you plan to change.

> **See Also:** For an example of the settings-insert.sql script in action, see Section 38.4.3, "Example: Configuring Connections to Accept Invitations Automatically."

To prepare and run the settings-insert.sql script:

1. Open the script in an editor.
2. For the settings you plan to change, uncomment the corresponding INSERT statement.

   > **Tip:** To uncomment an INSERT statement, remove the leading double dash (--) on the lines the statement spans.

3. Once you have uncommented all the INSERT statements for the settings of interest, save and run the script.

   The uncommented settings are populated with default values.

   > **Note:** You can run the settings-insert.sql script only once for a given set of settings on a given schema. If you must run it more than once—for example, if you must update a different set of settings—then the previously uncommented INSERT statements must be commented before you can run the script again. Otherwise, a SQL error is thrown during the re-execution of the INSERT statement.

38.4.1.2 Preparing and Running settings-update.sql

To change People Connections site-level settings, you must run the settings-update.sql script after you run settings-insert.sql once. The settings-update.sql script has UPDATE statements for all supported settings. All UPDATE statements are commented out by default.

You can run the settings-update.sql script as many times as required for a given set of settings on a given schema, provided you have run settings-insert.sql once for those settings.

> **See Also:** For an example of the settings-update.sql script in action, see Section 38.4.3, "Example: Configuring Connections to Accept Invitations Automatically."

To prepare and run the settings-update.sql script:

1. Open the script in an editor.
2. For the settings you plan to change, uncomment the corresponding UPDATE statement.

   > **Tip:** To uncomment an INSERT statement, remove the leading double dash (--) on the lines the statement spans.

3. For each uncommented statement, change the value of the SETTING_KEY column to the desired value.

   For information about settings and values, see Section 38.4.2, "Supported Site-Level Settings for People Connections Features."

4. Once you have revised all UPDATE statements of interest, save and run the script.

The table WC_PPL_COMMON_SETTING is updated with the revised values.

5. If your WebCenter Portal Framework application is running, restart it for the changes to take effect.

38.4.2 Supported Site-Level Settings for People Connections Features

This section lists and describes the supported site-level application settings for the People Connections service. It includes the following subsections:

- Section 38.4.2.1, "Activity Stream Site-Level Settings"
- Section 38.4.2.2, "Connections Site-Level Settings"
- Section 38.4.2.3, "Feedback Site-Level Settings"
- Section 38.4.2.4, "Message Board Site-Level Settings"
- Section 38.4.2.5, "Profile Site-Level Settings"

38.4.2.1 Activity Stream Site-Level Settings

Table 38–1 lists and describes the site-level settings for the People Connections service Activity Stream feature.

The service ID for Activity Stream is `oracle.webcenter.activitystreaming`. For a list of service IDs, see Table G–7.

Table 38–1 Site-Level Settings for Activity Stream

Setting Key	Description	Valid Site-Level Values
`accesscontrol.value.accessControlLevel`	Specifies who can view a user's Activity Stream.	`SELF`, `CONNECTIONS`, `USERS` (that is, authenticated users), `PUBLIC`
`accesscontrol.endUserConfigurable`	Specifies whether individual users can override in their own application views the application-level setting for who can view their Activity Stream. This setting is honored only when the application exposes the override control in a user preferences screen.	`+`, `-` +=TRUE -=FALSE

Table 38–1 (Cont.) Site-Level Settings for Activity Stream

Setting Key	Description	Valid Site-Level Values
`connectionsActivities.value`	Specifies whether the Home portal activities of a user's connections are included in the user's Activity Stream. Users can override this setting on a task flow instance.	`NONE`, `ALL` `NONE`=No activities of the user's connections are shown. `ALL`=All activities of the user's connections are shown.
`groupSpaceActivities.value`	Specifies whether any portal activities of a user's connections are included in the user's Activity Stream. Users can override this setting on a task flow instance.	`GSNONE`, `GSALL` `GSNONE`=No portal activities are shown `GSALL`=Activities are shown for all of the portals of which the user is a member and on which the user has view access.
`servicePublishedSettings[`*`serviceId`*`]`	Specifies whether to show activities published by the WebCenter service *`serviceId`* in a user's Activity Stream. A *`serviceId`* is the WebCenter service ID of any service that publishes activities. For a list of service IDs, see Table G–7. For example: `servicePublishedSettings[oracle.webcenter.community]` Users can override this setting on a task flow instance.	`+`, `-` `+`=TRUE `-`=FALSE

38.4.2.2 Connections Site-Level Settings

Table 38–2 lists and describes the site-level settings for the People Connections service Connections feature.

The service ID for Connections is `oracle.webcenter.peopleconnections.connections`. For a list of service IDs, see Table G–7.

Table 38–2 Site-Level Settings for Connections

Setting Key	Description	Valid Site-Level Values
`autoAcceptInvitations`	Specifies that connection invitations are accepted automatically by default. Individual users can override this application-level setting in their own view, provided the application exposes the override control in a user preferences screen.	`+, -` +=TRUE -=FALSE
`connectionsVisibility.accessControlSettings.accessControlLevel`	Specifies who can view a user's Connections.	`SELF, CONNECTIONS, USERS` (that is, authenticated users), `PUBLIC`
`connectionsVisibility.personalizable`	Specifies whether individual users can override in their own application views the application-level setting for who can view their Connections. This setting is honored only when the application exposes the override control in a user preferences screen.	`+, -` +=TRUE -=FALSE

38.4.2.3 Feedback Site-Level Settings

Table 38–3 lists and describes the site-level settings for the People Connections service Feedback feature.

The service ID for Feedback is `oracle.webcenter.peopleconnections.kudos`. For a list of service IDs, see Table G–7.

Table 38–3 Site-Level Settings for Feedback

Setting Key	Description	Valid Site-Level Values
`visibility.accessControlSettings.accessControlLevel`	Specifies who can view a user's received Feedback.	`SELF, CONNECTIONS, USERS` (that is, authenticated users), `PUBLIC`
`visibility.endUserConfigurable`	Specifies whether individual users can override in their own application views the application-level setting for who can view their received Feedback. This setting is honored only when the application exposes the override control in a user preferences screen.	`+, -` +=TRUE -=FALSE
`addControl.accessControlSettings.accessControlLevel`	Specifies who can give Feedback to a user.	`SELF, CONNECTIONS, USERS` (that is, authenticated users), `PUBLIC`
`addControl.endUserConfigurable`	Specifies whether individual users can override in their own application views the application-level setting for who can give them Feedback. This setting is honored only when the application exposes the override control in a user preferences screen.	`+, -` +=TRUE -=FALSE

Table 38–3 (Cont.) Site-Level Settings for Feedback

Setting Key	Description	Valid Site-Level Values
`miniViewRowCount.value`	Specifies the number of Feedback entries to show in a Feedback - Quick View task flow.	Positive integers
`miniViewRowCount.endUserConfigurable`	Specifies whether individual users can override in their own application views the application-level setting for the number of entries to show in a Feedback - Quick View task flow. This setting is honored only when the application exposes the override control in a user preferences screen.	`+, -` +=TRUE -=FALSE
`postedUserActions.delete`	Specifies whether users are allowed to delete the Feedback they leave for other users.	`+, -` +=TRUE -=FALSE

38.4.2.4 Message Board Site-Level Settings

Table 38–4 lists and describes the site-level settings for the People Connections service Message Board feature.

The service ID for Message Board is `oracle.webcenter.peopleconnections.wall`. For a list of service IDs, see Table G–7.

Table 38–4 Site-Level Settings For Message Board

Setting Key	Description	Valid Site-Level Values
`visibility.accessControlSettings.accessControlLevel`	Specifies who can view a user's Message Board.	`SELF`, `CONNECTIONS`, `USERS` (that is, authenticated users), `PUBLIC`
`visibility.endUserConfigurable`	Specifies whether individual users can override in their own application views the application-level setting for who can view their Message Board. This setting is honored only when the application exposes the override control in a user preferences screen.	`+, -` +=TRUE -=FALSE
`addControl.accessControlSettings.accessControlLevel`	Specifies who can post to a user's Message Board.	`SELF`, `CONNECTIONS`, `USERS` (that is, authenticated users), `PUBLIC`
`addControl.endUserConfigurable`	Specifies whether individual users can override in their own application views the application-level setting for who can post to their Message Board. This setting is honored only when the application exposes the override control in a user preferences screen.	`+, -` +=TRUE -=FALSE
`miniViewRowCount.value`	Specifies the number of messages to show in a Message Board - Quick View task flow.	Positive integer

Table 38–4 (Cont.) Site-Level Settings For Message Board

Setting Key	Description	Valid Site-Level Values
`miniViewRowCount.endUserConfigurable`	Specifies whether individual users can override in their own application views the application-level setting for the number of messages to show in a Message Board - Quick View task flow. This setting is honored only when the application exposes the override control in a user preferences screen.	+, - +=TRUE -=FALSE
`postedUserActions.edit`	Specifies whether users are allowed to edit the messages they post on other users' Message Boards.	+, - +=TRUE -=FALSE
`postedUserActions.delete`	Specifies whether users are allowed to delete messages they post on other users' Message Boards.	+, - +=TRUE -=FALSE

38.4.2.5 Profile Site-Level Settings

Table 38–5 lists and describes the site-level settings for the People Connections service Profile feature.

The service ID for Profile is `oracle.webcenter.peopleconnections.profile`. For a list of service IDs, see Table G–7.

Note: If Oracle WebCenter Portal is connected to embedded LDAP (the default), you must disable profile editing or users will see an error when they try to edit their profiles.

Table 38–5 Site-Level Settings for Profile

Setting Key	Description	Valid Site-Level Values
`general-profile-settings.logActivity`	Specifies whether profile updates, such as uploading a photo, updating personal status, changing profile attributes, should result in activities getting published in Activity Stream.	`true`, `false`
`general-profile-settings.prersonalWebVisibility`	Specifies who can view a user's Profile Gallery.	`SELF`, `CONNECTIONS`, `USERS` (that is, authenticated users), `PUBLIC`
`general-profile-settings.pwVisibilityPersonalizable`	Specifies whether individual users can override in their own views the application-level setting for who can view their Profile Gallery. This setting is honored only when the application exposes the override control in a user preferences screen.	`true`, `false`

Table 38–5 (Cont.) Site-Level Settings for Profile

Setting Key	Description	Valid Site-Level Values
`general-profile-settings.view.name.`*`profileSectionName`*`.access-control-level`	Specifies who can view the Profile section identified by *`profileSectionName`*. For example: `general-profile-settings.view.name.personalInfo.access-control-level` For more information, see Table 38–6, " Profile Section Names".	`SELF`, `USERS` (that is, authenticated users), `PUBLIC` **Note:** `CONNECTIONS` is not a valid value for this setting.
`general-profile-settings.view.name.`*`profileSectionName`*`.allow-personalize-visibility`	Specifies whether individual users can override in their own application views the application-level setting for who can view the Profile section identified by *`profileSectionName`* on their profile. This setting is honored only when the application exposes the override control in a user preferences screen. For more information, see Table 38–6, " Profile Section Names".	`true`, `false`
`general-profile-settings.view.name.`*`profileSectionName`*`.allow-user-edit`	Specifies whether users are allowed to edit the Profile section identified by *`profileSectionName`* on their own Profiles. For example: `general-profile-settings.view.name.personalInfo.allow-user-edit` For more information, see Table 38–6, " Profile Section Names".	`true`, `false`
`ootb-view-edit-settings.view.name.`*`profileSectionName`*`.`*`profileFieldName`*`.allow-edit`	Specifies whether users are allowed to update the field identified by *`profileFieldName`* when they edit the Profile section identified by *`profileSectionName`* on their own profile. For example: `ootb-view-edit-settings.view.name.personalInfo.homePhone.allow-edit` For more information, see Table 38–6, " Profile Section Names" and Table 38–7, " Profile Field Names".	`true`, `false`

Table 38–6 Profile Section Names

Section Name	Description
`basic`	Profile summary These details are discoverable in an application search.
`employee`	Employee detail
`businessContact`	Business contact information

Table 38–6 (Cont.) Profile Section Names

Section Name	Description
`personalInfo`	Personal information

Table 38–7 Profile Field Names

Field Name	Description
`email`	Business email address
`displayName`	User display name
`Dept`	Office department
`title`	Job title
`phone`	Business phone number
`timeZone`	Time zone
`photo`	User photo
`persStatNote`	Personal status message
`description`	About me
`empType`	Employee type
`empNo`	Employee number
`prefLang`	User's preferred language
`organization`	Employee's organization
`expertise`	Employee's expertise
`fax`	Fax number
`mobile`	Mobile/cell phone number
`pager`	Page number
`street`	Office address: street
`city`	Office address: city
`state`	Office address: state
`poBox`	Office address: P.O. box
`poCode`	Office address: ZIP/PIN/P.O. code
`country`	Office address: country
`homeAdd`	Home address
`homePhone`	Home phone number
`dob`	Date of birth
`maidenName`	Maiden name/surname before marriage
`doh`	Date of hire

38.4.3 Example: Configuring Connections to Accept Invitations Automatically

By default, when users send invitations to connect, recipients must explicitly accept them. Through site-level settings, the application administrator can configure the application to accept invitations automatically. This setting is identified by the key, `autoAcceptInvitations`, and the service ID, oracle.webcenter.peopleconnections.connections. To change the setting, the administrator performs the following steps:

1. Open the settings-insert.sql script and uncomment the following lines:

   ```
   -- INSERT INTO WC_PPL_COMMON_SETTING (ID, APPLICATION_ID, SCOPE_ID, SERVICE_ID,
   USER_ID, TASKFLOW_INST_ID, SETTING_KEY, SETTING_VALUE)
   --   VALUES ('768e5d1f-a73d-41b4-819d-74be081e1de1', 'webcenter',
   'defaultScope', 'oracle.webcenter.peopleconnections.connections', 'SYSTEM',
   'SITE', 'autoAcceptInvitations', '-')
    -- ;
   ```

   After modification, the lines appear as follows:

   ```
    INSERT INTO WC_PPL_COMMON_SETTING (ID, APPLICATION_ID, SCOPE_ID, SERVICE_ID,
   USER_ID, TASKFLOW_INST_ID, SETTING_KEY, SETTING_VALUE)
      VALUES ('768e5d1f-a73d-41b4-819d-74be081e1de1', 'webcenter', 'defaultScope',
   'oracle.webcenter.peopleconnections.connections', 'SYSTEM', 'SITE',
   'autoAcceptInvitations', '-')
    ;
   ```

2. Save and run the script.

3. Open the settings-update.sql script and uncomment the following lines:

   ```
     -- UPDATE WC_PPL_COMMON_SETTING SET SETTING_VALUE='-'
     --   WHERE APPLICATION_ID='webcenter' AND SCOPE_ID='defaultScope' AND USER_
   ID='SYSTEM' AND TASKFLOW_INST_ID='SITE'
     --   AND SERVICE_ID='oracle.webcenter.peopleconnections.connections' AND
   SETTING_KEY='autoAcceptInvitations'
      -- ;
   ```

   After the modification, the lines appear as follows:

   ```
      UPDATE WC_PPL_COMMON_SETTING SET SETTING_VALUE='-'
        WHERE APPLICATION_ID='webcenter' AND SCOPE_ID='defaultScope' AND USER_
   ID='SYSTEM' AND TASKFLOW_INST_ID='SITE'
        AND SERVICE_ID='oracle.webcenter.peopleconnections.connections' AND
   SETTING_KEY='autoAcceptInvitations'
       ;
   ```

4. Change the value of SETTING_VALUE to a plus sign (+).

   After modification, the lines appear as follows:

   ```
      UPDATE WC_PPL_COMMON_SETTING SET SETTING_VALUE='+'
        WHERE APPLICATION_ID='webcenter' AND SCOPE_ID='defaultScope' AND USER_
   ID='SYSTEM' AND TASKFLOW_INST_ID='SITE'
        AND SERVICE_ID='oracle.webcenter.peopleconnections.connections' AND
   SETTING_KEY='autoAcceptInvitations'
       ;
   ```

5. Save and run the script.

6. If your WebCenter Portal Framework application is running, restart the application.

   After you restart, the setting takes effect. In this example, when a user invites another user to connect, the connection is created automatically.

See Also: For lists and descriptions of People Connections site-level settings, see Section 38.4.2, "Supported Site-Level Settings for People Connections Features."

39

People Connections Task Flow Binding Parameters

This chapter describes how to revise task flow parameter values at design time and provides a table of binding parameters associated with People Connections task flows.

This chapter includes the following topics:

- Section 39.1, "About People Connections Task Flow Binding Parameters"
- Section 39.2, "How to Revise People Connections Task Flow Binding Parameters"
- Section 39.3, "People Connections Task Flow Binding Parameters"
- Section 39.4, "About the Activity Stream Advanced Query Option"

39.1 About People Connections Task Flow Binding Parameters

Each People Connections task flow has a set of required and optional task flow binding parameters that capture information that is useful to the task flow's successful function. For example, all People Connections task flows provide a binding parameter for capturing the ID of the current runtime user. This value (typically `#{securityContext.userName}`) enables the task flow to return People Connections data that is relevant to the current user.

In addition to providing required values for successful task flow rendering, you can use task flow binding parameters to customize the appearance and behavior of a task flow instance. For example, you can use parameter values to determine whether headers and footers are rendered, the number of rows and columns of information to show, whether to apply a filter to returned data, and the like.

You can provide task flow binding parameter values when you drag and drop a task flow onto an application page. Doing so opens the Task Flow Bindings dialog (for more information, see Section 38.2, "How to Add People Connections Task Flows to a Page"). You can also adjust task flow binding parameter values after you have placed a task flow on a page.

39.2 How to Revise People Connections Task Flow Binding Parameters

After you have added a task flow to a page, you might want to customize the instance by revising its binding parameter values. This section describes how to access the Edit Task Flow Binding dialog and change binding parameter values.

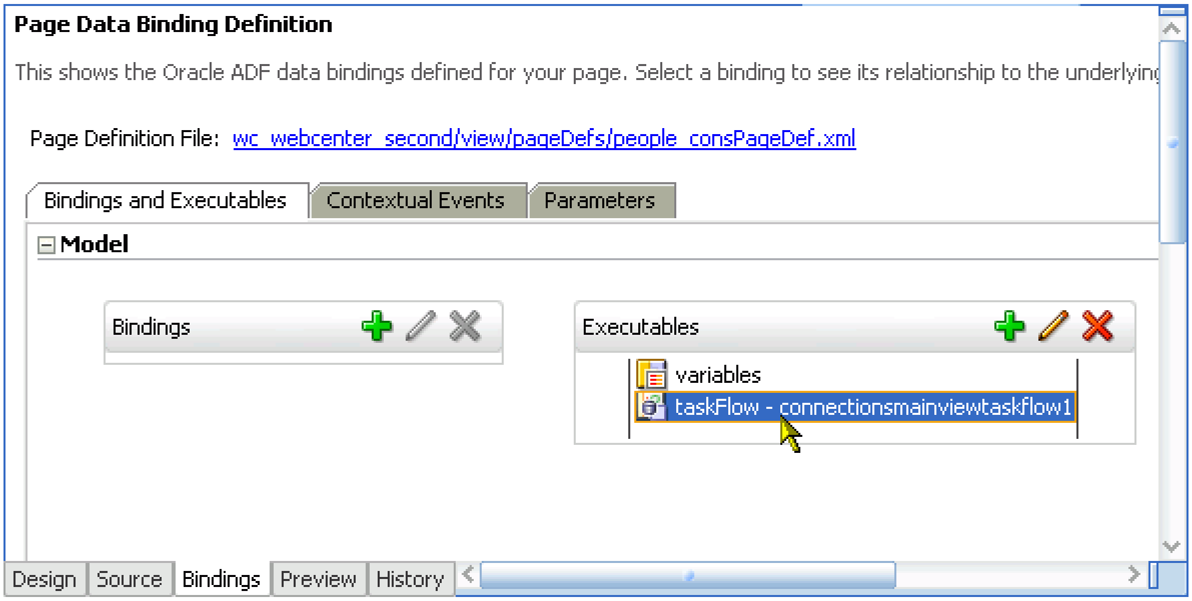
To access the Edit Task Flow Binding dialog:

1. Open the application page and set the view to bindings by clicking the **Bindings** tab at the bottom of the page.

2. Under **Executables**, double-click the task flow for which to revise task flow binding parameters (Figure 39–1) to open the Edit Task Flow Binding dialog (Figure 39–2).

   > **Tip:** Task flow names under **Executables** differ from names in design view. For example, Message Board task flows are instead referred to as *wall*, and Feedback task flows are instead referred to as *kudos*.

Figure 39–1 Bindings View of an Application Page

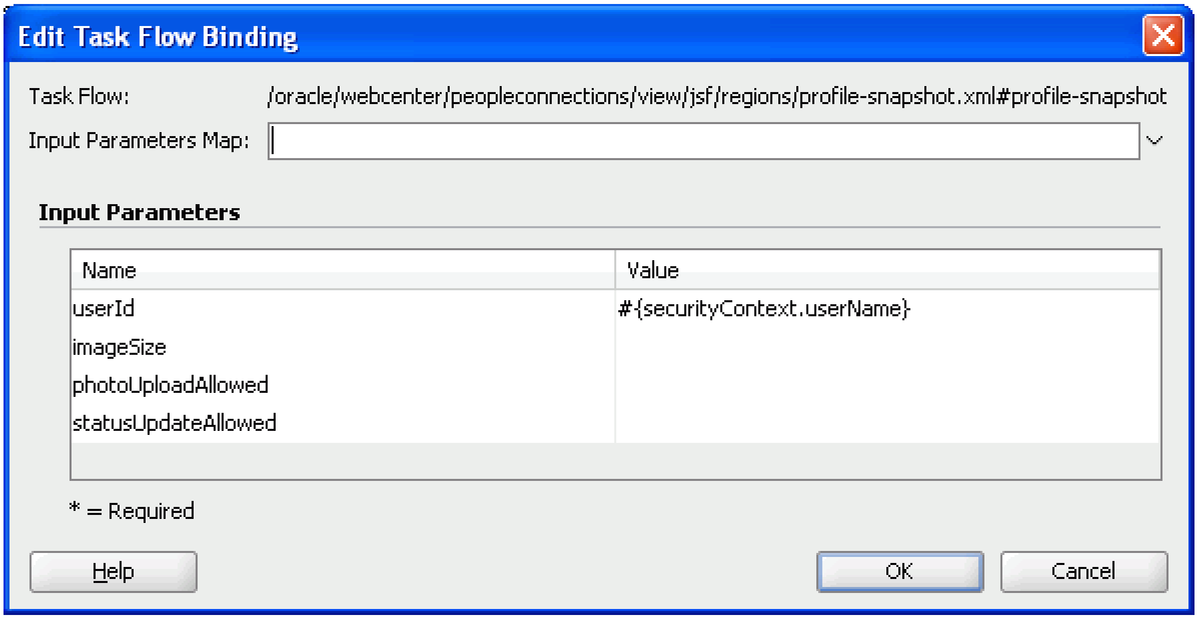


Page Data Binding Definition

This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relationship to the underlyin

Page Definition File: wc_webcenter_second/view/pageDefs/people_consPageDef.xml

Figure 39–2 Edit Task Flow Binding Dialog



Edit Task Flow Binding

Task Flow: /oracle/webcenter/peopleconnections/view/jsf/regions/profile-snapshot.xml#profile-snapshot

Input Parameters Map:

Input Parameters

Name	Value
userId	#{securityContext.userName}
imageSize	
photoUploadAllowed	
statusUpdateAllowed	

* = Required

3. Revise binding parameter values (for more information, see Section 39.3, "People Connections Task Flow Binding Parameters").

4. Click **OK** to save your changes and exit the dialog.
5. Save and run your page to see the results.

39.3 People Connections Task Flow Binding Parameters

Table 39–1 lists and describes task flow binding parameters applicable to the People Connections service.

Table 39–1 People Connections Service Task Flow Binding Parameters

Parameter	Description
`__followEnforced`	A means of enforcing the follow logic when querying Activity Stream ■ Enter `#{true}` to establish that the user must follow the business object to access streamed activities, even when the object's activities are queried in an advance query clause. The default is true. ■ Enter `#{false}` to omit this requirement. The activities streamed for Fusion business objects are returned as far as required by the advanced query, no matter whether the user follows the objects. This parameter (for Fusion application business objects) is used in conjunction with the `advancedQuery` parameter. This parameter is associated with the Activity Stream task flow.
`__objectExtHandlerEnabled`	A means of using the object extension handler to process Fusion application business objects ■ Enter `#{true}` to use the object extension handler to process business objects. ■ Enter `#{false}` to omit using the object extension handler. False is the default. When you enter `#{true}`, then, before querying activities for the business objects, the Activity Stream uses the object extension handler to process the business objects. The handler checks whether the user has permission to access the business object. If the user does not have permission, the object is removed from the list, and, none activities are retrieved from this object. This parameter is associated with the following task flows: ■ Activity Stream ■ Activity Stream - Quick View
`__objects`	A comma separated list of objects for which to show activities Enter objects in the format `object-id;object-type;service-id`. Typically used only for followed objects. This parameter is associated with the Activity Stream task flow.
`__objectSecured`	A means of enforcing a security check on a Fusion application business object ■ Enter `#{true}` to enforce the security check. ■ Enter `#{false}` to omit the security check. False is the default. The security check is performed by the resource authorizer that is implemented by the Fusion application. If a user has no permission on a business object, the activities related to that business object are filtered out. This parameter is associated with the Activity Stream task flow. This parameter is associated with the following task flows: ■ Activity Stream ■ Activity Stream - Quick View

Table 39–1 (Cont.) People Connections Service Task Flow Binding Parameters

Parameter	Description
`advancedQuery`	A field for specifying a custom query to filter streamed items For more information, see Section 39.4, "About the Activity Stream Advanced Query Option." This parameter is associated with the Activity Stream task flow.
`connectionListName`	The name of a connections list This parameter is associated with the task flow Connections - Card.
`currentView`	The view to display by default Valid values include: ■ `connections`—(the default value) a list of connections ■ `receivedInvitations`—a list of connections invitations you received ■ `sentInvitations`—a list of connections invitations you sent ■ `people`—a search field for finding people with whom to connect When users access the task flow instance, the view specified here is the first one they see. All selections, except `people`, provide controls for navigating to the application default view (`connections`). Selecting `people` provides search and select controls for inviting other users to connect. This parameter is associated with the Connections task flow.
`displayCount`	The number of items to show in the task flow For example, enter `5` to specify that a maximum of five items can appear in the task flow. In quick views, a **More** link appears at the bottom of the task flow when there are more items than the specified number of items. Users click **More** to open the main view of the task flow where all items are accessible. In main views, **Previous** and **Next** links are shown. Users click these to page through entries. This parameter appears in the component properties for the following task flows: ■ Feedback ■ Feedback - Quick View ■ Message Board ■ Message Board - Quick View
`displayMessageSize`	The number of characters to show for each feedback message Messages exceeding the specified value are truncated, and an ellipse (…) is appended to the end. This parameter is associated with the task flow Feedback - Quick View.
`display_maxConnections`	The maximum number of connections to show in the task flow For example, enter `5` to specify that a maximum of five connections can appear in the task flow. A **More** link appears at the bottom of the task flow when there are more connections than the specified number of connections. Users click More to open the main view of the task flow where all connections are show. The value entered for this parameter is honored only when values for `display_numberOfRows` and `display_numberOfColumns` have not both been specified. If values for both of these parameters have been specified, then **Previous** and **Next** links appear when there are more connections than can fit into the specified numbers of rows and columns. This parameter is associated with the following task flows: ■ Connections - Card ■ Connections - Quick View

Table 39–1 (Cont.) People Connections Service Task Flow Binding Parameters

Parameter	Description
`display_numberOfColumns`	The number of columns to show in the task flow For example, in a Connections - Card task flow that shows six connections, a value of `2` means those connections are shown in two columns with three rows (see also `display_numberOfRows` and `display_maxConnections`). This parameter is associated with the following task flows: - Connections - Card - Connections - Quick View
`display_numberOfRows`	The number of rows to show in the task flow For example, in a Connections - Card task flow that shows six connections and a value of `2` for `display_numberOfColumns`, a value of `2` for this parameter means connections are shown in two columns with two rows. That is, four connections are shown. A **More** link appears at the bottom of the task flow when there are more connections than can be fit in the specified number of columns and rows. Users click More to open the main view of the task flow where all connections are shown. See also `display_maxConnections`. This parameter is associated with the following task flows: - Connections - Card - Connections - Quick View
`display_profileFormat`	The default layout style for the task flow Enter one of the following: - `vcard`—displays a connection's photo and status message. - `iconic`—displays a connection's photo and user name. - `list`—displays connections in a list, with each list row showing the profile photo, user name (linked to a summary profile view), mail address, job title, status message, and actions icons and links. - `tiled`—renders the connection's personal Profile photo and shows the user name and job title beside the photo. In all layouts, the name links to a summary view of the user's Profile. This parameter is associated with the task flow Connections - Card.
`display_removalAllowed`	A means of showing or hiding the **Remove** action on the task flow Enter `true` to show the Remove action. Enter `false` to hide the Remove action. The default value (`true`) is applied if the input is invalid. This parameter is associated with the task flow Connections - Card.
`display_sortedBy`	The connections sort order Enter `LAST_ACTIVITY_TIME` to sort connections in descending date/time order. Leave this field blank to sort connections alphabetically by name. This parameter is associated with the task flow Connections - Card.
`editMode`	A means of enabling an edit mode on a Profile task flow instance Enter `#{true}` to enable an edit mode. Enter `#{false}` to disable it. This parameter is associated with the Profile task flow.

Table 39–1 (Cont.) People Connections Service Task Flow Binding Parameters

Parameter	Description
`enableContextInf0`	A means of showing or omitting detailed information about the object in the current context (that is, in a popup or other contextual instrument) ■ Enter `#{true}` to enable Activity Stream to display the `af:contextInfo` component (a small, red dot). Users can click this dot to view object detail information. ■ Enter `#{false}` to omit object detail information. When this parameter is true and the `contextInfoTaskflowId` in the service definition is defined, the activity from the service displays the `af:contextInfo`. Otherwise, no context information is shown. This parameter is associated with the Activity Stream task flow.
`filterPattern`	A filter against task flow content For example, enter `pat` to show only those connections named *pat* (including *patrick* or *sripathy*). This parameter is associated with the task flow Connections - Card.
`fromDate`	The start date of a date range within which to show feedback messages Enter dates in the format `YYYY-MM-DD`. See also `toDate`. This parameter is associated with the following task flows: ■ Feedback ■ Feedback - Quick View ■ Message Board
`hideActions`	A means of hiding the actions normally associated with a Feedback or Message Board entry, such as Edit, Private, Hide, and Delete ■ Enter `#{true}` to hide actions associated with a Feedback or Message Board entry. ■ Enter `#{false}` to show such actions. When no value is entered, `false` is the default. This parameter appears in the component properties for the following task flows: ■ Feedback – Quick View ■ Message Board – Quick View
`hideAttach`	Specifies whether the **Attach: File | Link** option is shown or hidden ■ Check for `#{true}` to hide the **Attach: File | Link** option. ■ Clear for `#{false}` to show the **Attach: File | Link** option. This parameter is associated with the Publisher task flow.
`hideComments`	A means of showing or hiding the Comments feature on streamed activities Enter `true` to hide the Comments feature. Enter `false` to show it. This parameter is associated with the Activity Stream task flow
`hideConfigure`	A means of hiding the personalization option on the task flow instance This parameter is associated with the following task flows: ■ Activity Stream ■ Activity Stream - Quick View

Table 39–1 (Cont.) People Connections Service Task Flow Binding Parameters

Parameter	Description
`hideDocumentUploader`	A means of showing or hiding the Publisher task flow's document uploader Enter `#{true}` to hide the Publisher task flow's document uploader. Enter `#{false}` to show it. This parameter is associated with the Publisher task flow.
`hideFooter`	A means of showing or hiding the task flow footer The task flow footer contains the **More** link that appears at the bottom of a task flow when there are more items to show than can be accommodated in the current view. Hiding the footer hides the **More** link. Hiding the footer does not affect **Previous** and **Next** links that may also appear at the bottom of a task flow. Enter `true` to hide the footer. Enter `false` (default) to show the footer. This parameter is associated with the following task flows: ■ Activity Stream - Quick View ■ Connections - Card ■ Connections - Quick View ■ Feedback - Quick View ■ Message Board - Quick View
`hideGiven`	A means of showing or hiding feedback given to a user Enter true to allow the rendering of given feedback. Enter false to prohibit it. This parameter is associated with the following task flows: ■ Feedback ■ Feedback - Quick View
`hideHeader`	A means of showing or hiding the task flow header Enter `true` to hide the task flow header. Enter `false` (default) to show the task flow header. This parameter is associated with the following task flows: ■ Activity Stream - Quick View ■ Connections - Quick View ■ Feedback ■ Feedback - Quick View ■ Message Board ■ Message Board - Quick View
`hideInlinePreview`	A means of allowing or omitting an inline preview of files attached to streamed activities Enter `true` to omit a file preview. Enter `false` to show it. This parameter is associated with the Activity Stream task flow.
`hideLike`	A means of showing or hiding the Like link on a streamed activity Enter true to hide the Like link. Enter false to show it. This parameter is associated with the Activity Stream task flow
`hideName`	A means of showing or hiding the user name for a connection Enter true to hide the name. Enter false to show it. This parameter is associated with the Connections - Card task flow

Table 39–1 (Cont.) People Connections Service Task Flow Binding Parameters

Parameter	Description
`hidePublisher`	A means of showing or hiding the message entry field and the upload file and URL controls (the Publisher) ■ Enter `#{true}` to disable the display of the message entry field in a given task flow instance. ■ Enter `#{false}` to allow the display of the message entry field in a given task flow instance. This parameter is associated with the following task flows: ■ Message Board ■ Message Board - Quick View
`hideScopePicker`	Specifies whether the **Share something with** option is shown or hidden ■ Check for `#{true}` to hide the **Share something with** option. ■ Clear for `#{false}` to show the Share something with option. This parameter is associated with the Publisher task flow.
`hideShare`	A means of showing or hiding the Share link on a streamed activity Enter true to hide the Share link. Enter false to show it. This parameter is associated with the Activity Stream task flow
`hideSpacesUI`	Specifies whether to show the Portals UI in the Activity Stream and Activity Stream - Quick View Configuration dialogs. The Portals UI enables users to specify whether to show activities from all portals, the portals of which they are a member, no portals, or just the portal on which the task flow is placed. ■ Enter `#{true}` to show the Portals UI. This is the default. ■ Enter `#{false}` to hide the Portals UI. This parameter is associated with the following task flows: ■ Activity Stream ■ Activity Stream - Quick View
`hintsTextKey`	Specifies the resource bundle class and message key for hint text Use the format `key[,RBClass]`. `__EMPTY__` as the predefined key for no hint text. This is the default value. This parameter is associated with the Publisher task flow.
`imageSize`	The display size of the profile photo Enter one of the following values: ■ `ORIGINAL` ■ `LARGE` ■ `MEDIUM` ■ `SMALL` This parameter is associated with the Profile - Snapshot task flow.
`isUpdateStatus`	A means of dedicating the task flow instance to updating the current user's Profile status message Enter `#{true}` to devote the task flow instance to updating user status messages. Enter `#{false}` to omit publishing messages to the current user's Profile status message. This parameter is associated with the Publisher task flow.

Table 39–1 (Cont.) People Connections Service Task Flow Binding Parameters

Parameter	Description
`keepOpenAfterPublish`	Specifies whether the text box remains active after a user clicks the **Publish** button ■ Enter `#{true}` to keep the text box open after a message is published. ■ Enter `#{false}` to close the text box after a message is published. This parameter is associated with the Publisher task flow.
`launchStyle`	Specifies the profile launch style. This parameter is considered only if Profile Launched On Selection is selected. Enter one of the following: ■ `snapshot`—displays a user's profile snapshot when the user's name is clicked. ■ `profile`—displays user's Profile page when the user's name is clicked. This parameter is associated with the task flow Connections - Card.
`messageType`	Types of messages to display. Applicable only if viewing own's messageboard. Specifies the types of messages to display. Enter one of the following: ■ `all`—displays both public and private messages. This is the default. ■ `private`—displays only private messages. ■ `public`—displays only public messages. This parameter is associated with the following task flows: ■ Message Board ■ Message Board - Quick View
`numberOfRows_list`	The number of rows to show when the Connections task flow instance is set to list view This parameter is associated with the Connections task flow.
`objectId`	The ID of an object to associate with a published message This parameter is associated with the Publisher task flow.
`objectType`	The type of an object to associate with a published message This parameter is associated with the Publisher task flow.
`orgBreadCrumbsShown`	A means of showing or omitting organization breadcrumbs on a user profile that renders a management chain that is linked to each member up the chain Enter `#{true}` to show organizational breadcrumbs. Enter `#{false}` to omit them. This parameter is associated with the Profile - Snapshot task flow.
`pageSize`	The number of items to stream in a given task flow instance This parameter is associated with the following task flows: ■ Activity Stream ■ Activity Stream - Quick View

Table 39–1 (Cont.) People Connections Service Task Flow Binding Parameters

Parameter	Description
`pagination`	The form of pagination to use on a multipage stream ■ Enter `#{true}` to show Previous and Next links. ■ Enter `#{false}` hide to omit Previous and Next links. Instead, a more link is rendered, enabling users to navigate to a fuller view of the task flow where all streamed activities are shown. This parameter is associated with the Activity Stream task flow.
`photoUploadAllowed`	A means of allowing a photo upload from the profile screen Enter `true` (default) to allow users to upload a photo to their profile. Enter `false` to prevent users from uploading a photo. This parameter is associated with the task flow Profile - Snapshot.
`profileEditLinkShown`	A means of showing or omitting an Edit link on a Profile - Snapshot task flow Enter `#{true}` to show the Edit link. Enter `#{false}` to hide it. This parameter is associated with the Profile - Snapshot task flow.
`profileLaunchedOnSelection`	A means of launching a user Profile when the user name is clicked Enter `true` to launch a user Profile when the user name is clicked. Enter `false` to prevent launching a user Profile This parameter is associated with the task flow Connections - Card
`profileOnly`	A means of streaming activities only from user profiles ■ Enter `true` to stream only those activities associated with user profiles. ■ Enter `false` to stream other types of activities along with those associated with user profiles. This parameter is associated with the Activity Stream task flow.
`profileUserId`	ID of the user from whom to stream activity This parameter is associated with the Activity Steam - Quick View task flow.
`resourceId`	The current user ID Enter `#{securityContext.userName}` to return the current user. This parameter is associated with the following task flows: ■ Activity Stream ■ Connections ■ Feedback ■ Message Board ■ Profile ■ Profile Gallery
`scopeId`	The ID of the scope to which to publish This property value assists in generating a link for use in navigating to the published object. It is not necessary to provide a value, unless you plan to do so using an EL expression. For information about EL expressions, seeAppendix G, "Expression Language Expressions." This parameter is associated with the Publisher task flow.

Table 39–1 (Cont.) People Connections Service Task Flow Binding Parameters

Parameter	Description
`sectionWiseEditEnabled`	A means of enabling or disabling section-by-section edit capability on the task flow - Enter `#{true}` to enable section-by-section editing. An **Edit** control is shown on each editable Profile section. - Enter `#{false}` to disable section-by-section editing. This parameter is associated with the Profile task flow.

`serviceCategories`	A field for entering a comma-separated list of names of services from which to stream activities
	Use this parameter to limit the display of streamed activities to only those associated with the specified service or services. Enter one or more service IDs, for example:
	`oracle.webcenter.collab.announcement,`
	`oracle.webcenter.collab.forum`
	For a list of valid service ID, see Table G–7, " Service and Tool IDs". Note that all listed service IDs cannot be used because all services do not stream items to the Activity Stream. For example, the RSS service does not stream any activities.
	This parameter is associated with the Activity Stream task flow.

`serviceId`	The service ID of the service to which the object associated with a published message belongs For a list of service IDs, see Table G–7, " Service and Tool IDs". This parameter is associated with the Publisher task flow.
`showViewListOfAll`	Specifies whether the footer includes a **See all your connections** link. If this parameter is enabled, the task flows shows no pagination. - Enter `#{true}` to show the **See all your connections** link. - Enter `#{false}` to hide the **See all your connections** link. This parameter is associated with the task flow Connections - Card.
`spaceName`	The portal to which to publish messages If your application does not support portals, do not provide a value for this parameter. This parameter is associated with the following task flows: - Message Board - Message Board - Quick View - Publisher
`spaces`	A comma-separated list of names or GUIDs of portals from which to stream activities Use this parameter to limit the display of streamed activities to only those associated with the specified portal or portals. If your application does not support portals, do not provide a value for this parameter. This parameter is associated with the Activity Stream task flow.
`statusUpdateAllowed`	A boolean value representing whether a control is available on the task flow for updating a profile status message Enter either `true` or `false`. This parameter appears in the component properties for the Profile - Snapshot task flow.

Table 39–1 (Cont.) People Connections Service Task Flow Binding Parameters

Parameter	Description
`toDate`	The end date of a date range within which to show feedback messages Enter dates in the format `YYYY-MM-DD`. See also `fromDate`. This parameter is associated with the following task flows: ■ Feedback ■ Feedback - Quick View ■ Message Board
`uploadDocumentOnly`	A means of limiting the Publisher task flow to its document upload feature Enter #{true} to limit the Publisher task flow to be only a document uploader. Enter `#{false}` to expose all Publisher features. This parameter is associated with the Publisher task flow.
`userId`	The current user ID Enter `#{securityContext.userName}` to return the current user. This parameter is associated with the following task flows: ■ Connections - Card ■ Connections - Quick View ■ Feedback - Quick View ■ Message Board - Quick View ■ Profile - Snapshot
`userName`	The name of the user to whom to publish messages This value is supplied by default. We recommend that you do not change the default value, `#{o_w_w_i_v_b_resourceViewerBean.username}`. This parameter is associated with the Publisher task flow.
`viaUser`	The user name of the person who provided the object the current user is sharing For example, John is sharing a document with everyone that Jane originally shared with him. In this case, Jane is the via user. This parameter is associated with the Publisher task flow.

39.4 About the Activity Stream Advanced Query Option

Use `Advanced Query` to create filters against streamed activities in an Activity Stream task flow. Create filters for user names, service IDs, and object details, such as a document's display name. You can use SQL syntax for parameter values. Additionally you can place EL expressions within the SQL.

You can construct queries against specific database objects, which are represented by aliases that are prefixed to the inquiry. Table 39–2 lists and describes the types of database objects against which you can construct a query and provides their alias prefixes.

> **See Also:** In many cases, you can use EL expressions to obtain the value you require for the supported fields and columns listed in Table 39–2. For more information, see Appendix G, "Expression Language Expressions."

Table 39–2 Supported Database Objects for Constructing a SQL WHERE Clause

Database Object	Alias Prefix	Supported Fields/Columns
ACTIVITY	AE	■ `SCOPE_ID`—The GUID of the scope (you can use an EL to return this value, for example, `#{serviceCtx.scope.GUID}`). ■ `SERVICE_ID`—The service ID of the service to track. See Table G–7 for a list of service IDs. ■ `ACTIVITY_TIME`—The time the activity occurs. Use the datetime format that is supported in the SQL or target database. You can also use Oracle database SQL constructs, such as `to_date()`. ■ `ACTIVITY_TYPE`—The type of activity to track For a list of valid activity type names, see Table 39–3.
ACTIVITY (ACTOR)	AD	`ACTOR_NAME`—The user name of the person performing the activity.
ACTIVITY (OBJECT)	OD	■ `SERVICE_ID`—The service ID of the service from which the tracked object issues. See Table G–7 for a list of service IDs. ■ `OBJECT_ID`—The GUID of the object. ■ `DISPLAY_NAME`—The object display name. ■ `OBJECT_TYPE`—The object type. Object type names for use with Advanced Query include: ■ `event` ■ `announcement` ■ `forum` ■ `topic` ■ `bookmark` ■ `list` ■ `page` ■ `blog` ■ `document` ■ `wiki`

Table 39–3 Activity Type Names for Advanced Query

Service	Activity Type Name
Events	■ `createEvent` ■ `updateEvent`
Announcements	■ `createAnnouncement` ■ `updateAnnouncement`
Discussions	■ `createForum` ■ `createTopic` ■ `replyTopic`
Tags	■ `updateBookmark`
Lists	■ `createList` ■ `editList`

Table 39–3 (Cont.) Activity Type Names for Advanced Query

Service	Activity Type Name
Page	■ `createPage` ■ `editPage`
Documents	■ `create-blog` ■ `update-blog` ■ `create-document` ■ `create-wiki` ■ `update-document` ■ `update-wiki`
People Connections (Profile)	■ `updateStatus` ■ `updateProfile` ■ `updatePhoto`
People Connections (Message Board)	■ `postScope` ■ `postself` ■ `post` ■ `sharescope` ■ `shareself` ■ `share` ■ `shareobjectscope` ■ `shareobjectself` ■ `shareobject` ■ `updatescope` ■ `updateself` ■ `update`
People Connections (Connections)	■ `connect` ■ `inviteForConnection`
People Connections (Feedback)	■ `post`

The SQL string that is passed as the advanced query parameter complies with SQL standards. That is, it supports SQL constructs, such as `AND`, `OR`, `IN`, and the like. Note, however, that it does not support `INSERT`, `UPDATE`, `DELETE`, `SELECT`, `JOIN` constructs. The syntax of the advanced query must contain only the `WHERE` clause portion of a SQL query. Because `SELECT` is not supported, the `WHERE` clause cannot have nested queries or subqueries.

The `Advanced Query` parameter also supports EL expressions, which can be embedded in the `WHERE` clause or used to generate the whole `WHERE` clause.

All the literals in the query must be escaped by prepending a backward slash (\); otherwise, such characters generate syntax errors (see Table 39–4 for examples).

The advanced query `WHERE` clause is always `AND`ed to the internal query that is generated by Activity Stream based on the current user, portal membership, connection list, and the like. This is to prevent a user from viewing activities to which he or she does not have access.

Table 39–4 lists examples of advanced queries.

Table 39–4 Examples of Advanced Queries for Use with Activity Stream

Use Case	Query Syntax
Stream only document creation activities.	`AE.SERVICE_ID = \'oracle.webcenter.doclib\'`
Stream activities only from an object or current portal.	`OD.OBJECT_ID = \'objectA\' OR AE.SCOPE_ID = \'#{serviceCtx.scope.GUID}\'`
Stream activities only about wikis created by the current user.	`OD.OBJECT_TYPE = \'Wiki\' AND AD.ACTOR_NAME = \'#{securityContext.userName}\'`
Stream activities for documents and discussions, but only create activities or all activities for the current user.	`(AE.SERVICE_ID IN (\'oracle.webcenter.doclib\', \'oracle.webcenter.collab.forum\') AND AE.ACTIVITY_TYPE IN (\'createDocument\', \'createTopic\')) OR AD.ACTOR_NAME = \'#{securityContext.userName}\'`

40

Using People Connections Data Controls and Java APIs

This chapter describes how to use People Connections service data controls and Java APIs. It provides details about each data control, including how to add a data control to a project and where to find additional information.

This chapter includes the following topics:

- Section 40.1, "Using People Connections Data Controls"
- Section 40.2, "People Connections Service Java APIs"

40.1 Using People Connections Data Controls

The People Connections service provides data controls that enable you to create your own visualization of the People Connections functionality. This section provides an overview of the following data controls and lists and describes their supported methods, attributes, and classes:

- People Connections Management Data Control
- Kudos Service Data Control
- Profile Data Control

This section also includes the following subsections:

- Section 40.1.1, "Adding a Data Control to Your Project"
- Section 40.1.2, "Working with People Connections Management Data Control"
- Section 40.1.3, "Working with Profile Data Control"

40.1.1 Adding a Data Control to Your Project

You add a data control to your project by right-clicking it in the Resource Palette and selecting **Add to Project** from the resulting context menu. Once added, you can browse the data control's methods and attributes by expanding it in the Data Controls panel in the Application Navigator.

You add a data control to an application page by dragging it onto the page from the Data Controls panel. Once placed, a context menu opens with options for selecting the type of component to which to bind the data, such as a button or a text box.

To implement a People Connections Data Control:

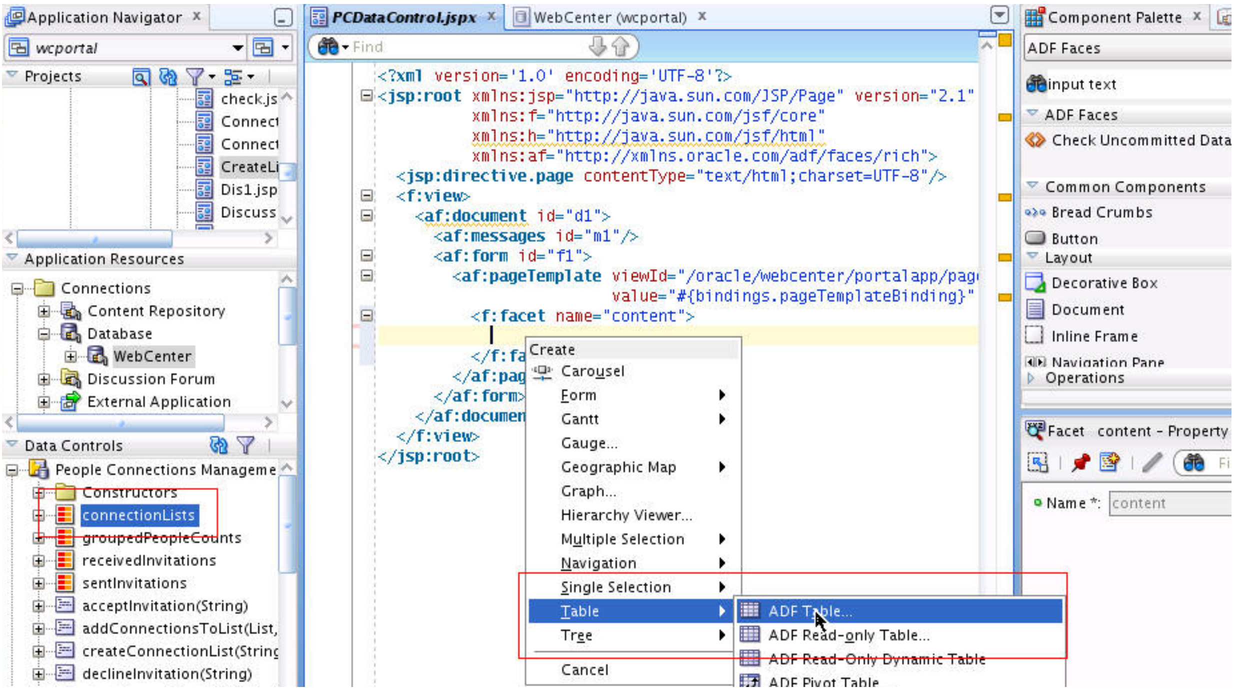
1. Create a WebCenter Portal Framework application in JDeveloper.

2. In your WebCenter portal application, navigate to **Resource Catalog** > **Services Catalog** > **Data Controls**.
3. Select a People Connection Data Control and right-click the control.
4. Click **Add to Project** in the context menu.

   The Data Controls appear in the Application Navigator Projects Data Controls folder.
5. Expand the Data Controls folder.

   On expanding, the Data Control objects and their corresponding Java methods appear.
6. Drag and drop the data control object on to the `.jspx` page and select the **ADF Table** option in the drop-down **Table** menu list, shown in Figure 40–1.

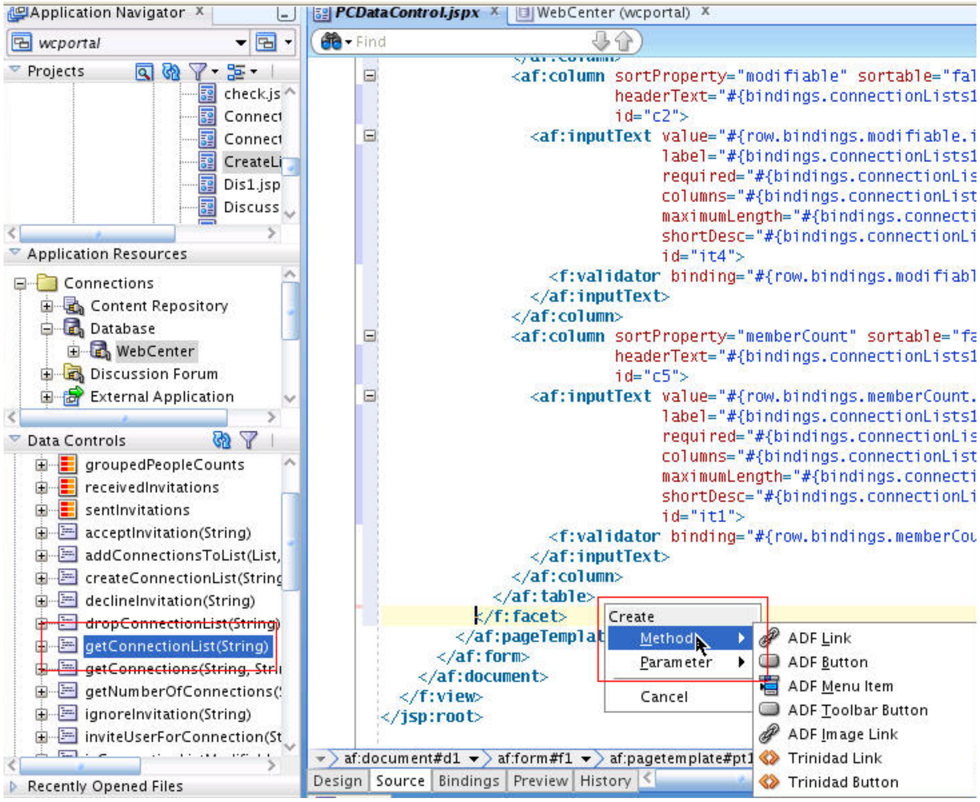
Figure 40–1 The Data Control Object Dragged and Dropped on to a .jspx Page With ADF Table Selected



```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
  <jsp:directive.page contentType="text/html;charset=UTF-8"/>
  <f:view>
    <af:document id="d1">
      <af:messages id="m1"/>
      <af:form id="f1">
        <af:pageTemplate viewId="/oracle/webcenter/portalapp/pag
                         value="#{bindings.pageTemplateBinding}"
          <f:facet name="content">

          </f:fa
        </af:pag
      </af:form>
    </af:documen
  </f:view>
</jsp:root>
```

7. To use the available Java methods, drag the methods to the .jspx page and select the **Method** item in the **Create** menu list, as shown in Figure 40–2, and bind it to the data in your project to achieve the desired functionality.

Figure 40–2 Dragging and Dropping Java Methods to the .jspx Page and Selecting Method in the Create Menu List



```
            </af:column>
            <af:column sortProperty="modifiable" sortable="fal
                       headerText="#{bindings.connectionLists1
                       id="c2">
              <af:inputText value="#{row.bindings.modifiable.i
                            label="#{bindings.connectionLists1
                            required="#{bindings.connectionLis
                            columns="#{bindings.connectionList
                            maximumLength="#{bindings.connecti
                            shortDesc="#{bindings.connectionLi
                            id="it4">
                <f:validator binding="#{row.bindings.modifiabl
              </af:inputText>
            </af:column>
            <af:column sortProperty="memberCount" sortable="fa
                       headerText="#{bindings.connectionLists1
                       id="c5">
              <af:inputText value="#{row.bindings.memberCount.
                            label="#{bindings.connectionLists1
                            required="#{bindings.connectionLis
                            columns="#{bindings.connectionList
                            maximumLength="#{bindings.connecti
                            shortDesc="#{bindings.connectionLi
                            id="it1">
                <f:validator binding="#{row.bindings.memberCou
              </af:inputText>
            </af:column>
          </af:table>
        </f:facet>
      </af:pageTemplat
    </af:form>
  </af:document>
</f:view>
</jsp:root>
```

See Also: For more information about using data controls in a WebCenter Portal Framework application, see Section 4.1.3, "Using WebCenter Portal Data Controls."

40.1.2 Working with People Connections Management Data Control

The People Connections Management Data Control provides methods for adding and managing connections and connections lists. The primary methods exposed include:

- connectionLists
- groupedPeopleCounts
- receivedInvitations
- sentInvitations
- acceptInvitation(String invitationId)
- addConnectionsToList(List userids, String listName)
- createConnectionList(String listName)
- declineInvitation(String invitationId)
- dropConnectionList(String listName)
- getConnectionList(String connectionListName)
- getConnections(String userid, String connectionListName, String filterPattern, String sortBy, int startIndex, int fetchSize)

- getNumberOfConnections(String userid, String connectionListName, String filterPattern)
- ignoreInvitation(String invitationId)
- inviteUserForConnection(String userid, String invitationMessage, Collection connectionListNames)
- isConnectionListModifiable(String listName)
- isConnectionPartOfUnmodifiableList(String connecteeGuid)
- removeConnection(String userid, boolean fromListOnly, String listName)
- searchUsers(String filterPattern, int startIndex, int fetchSize)
- updateConnectionListsMembership(String member, Collection addListIds, Collection removeListIds)

The subsections in this section list and describe the methods associated with the People Connections Management Data Control.

40.1.2.1 connectionLists

A collection of details about connections lists, including the list ID, name, localized name, number of members, whether or not the list is modifiable, and member user IDs. Table 40–1 lists and describes the attributes associated with this method.

Table 40–1 Attributes of the Method connectionLists

Attribute	Description
id	The connections lists IDs
listName	The names of connections lists
localizedName	The localized names of connections lists
memberCount	The number of members on each named connections list
modifiable	Information about whether a named connections list can be modified
memberUserIds	The user IDs of members on each named connections list

40.1.2.2 groupedPeopleCounts

The number of connections contained in each connections group.

40.1.2.3 receivedInvitations

A collection of details about a received invitation to connect, including when the invitation was sent and received, the invitation's GUID, the invitation message, and the user IDs of the user who sent the invitation and who received it. Table 40–2 lists and describes the attributes associated with this method.

Table 40–2 Attributes of the Method receivedInvitations

Attribute	Description
dateFormattedAsReceived	The date the invitation was received according to the recipient's time stamp
dateFormattedAsSent	The date the invitation was sent according to the sender's time stamp.
id	The GUID of the received invitation

Table 40–2 (Cont.) Attributes of the Method receivedInvitations

Attribute	Description
`invitationMessage`	The invitation message
`inviteeUserid`	The user ID of the person who received the invitation
`invitorUserid`	The user ID of the person who sent the invitation
`sentDate`	The date the invitation was sent according to the system time stamp

40.1.2.4 sentInvitations

A collection of details about a sent invitation to connect, including when the invitation was sent and received, the invitation's GUID, the invitation message, and the user IDs of the user who sent the invitation and who received it. Table 40–3 lists and describes the attributes associated with this method.

Table 40–3 Attributes of the Method sentInvitations

Attribute	Description
`dateFormattedAsReceived`	The date the invitation was received according to the recipient's time stamp
`dateFormattedAsSent`	The date the invitation was sent according to the sender's time stamp
`id`	The unique GUID of the received invitation
`invitationMessage`	The invitation message
`inviteeUserid`	The user ID of the person who received the invitation
`invitorUserid`	The user ID of the person who sent the invitation
`sentDate`	The date the invitation was sent according to the system time stamp

40.1.2.5 acceptInvitation(String invitationId)

A method for accepting invitations to connect. Table 40–4 lists and describes the parameters associated with this method.

Table 40–4 Parameters of the Method acceptInvitations

Parameter	Description
`invitationId`	The GUID of the invitation to connect to be accepted

40.1.2.6 addConnectionsToList(List userids, String listName)

A method for adding identified users to a named connections list. Table 40–5 lists and describes the parameters associated with this method.

Table 40–5 Parameters of the Method addConnectionsToList

Parameter	Description
`userids`	The user names of the users to add to the named connections list
`listName`	The name of the connections list to which to add identified users

40.1.2.7 createConnectionList(String listName)

A method for creating a connections list. Table 40–6 lists and describes the parameters associated with this method.

Table 40–6 Parameters of the Method createConnectionList

Parameter	Description
`listName`	The name to give the new connections list

40.1.2.8 declineInvitation(String invitationId)

A method for declining an invitation to connect. Table 40–7 lists and describes the parameters associated with this method.

Table 40–7 Parameters of the Method declineInvitation

Parameter	Description
`invitationId`	The unique GUID of the declined invitation

40.1.2.9 dropConnectionList(String listName)

Method for deleting a connections list. Table 40–8 lists and describes the parameters associated with this method.

Table 40–8 Parameters of the Method dropConnectionList

Parameter	Description
`listName`	The name of the connections list to delete

40.1.2.10 getConnectionList(String connectionListName)

Returns an object that represents a Connections List. This object provides details about a connections list acquired for the given connection list name. Table 40–9 lists and describes the parameters associated with this method. Table 40–10 lists and describes the attributes associated with this method.

Table 40–9 Parameters of the Method getConnectionList

Parameter	Description
connectionListName	The name of the connections list for which to return the following attributes (see Table 40–10): ■ `id` ■ `listName` ■ `localizedName` ■ `memberCount` ■ `modifiable` ■ `memberUserIds`

Table 40–10 Attributes of the Method getConnectionList

Attribute	Description
`id`	The unique GUID of the connections list to return
`listName`	The name of the connections list to return
`localizedName`	The localized name of the connections list to return

Table 40–10 (Cont.) Attributes of the Method getConnectionList

Attribute	Description
memberCount	The number of members on the connections list to return
modifiable	An indicator of whether the returned connections list can be modified
memberUserIds	The user IDs of the members of a returned connections list

40.1.2.11 getConnections(String userid, String connectionListName, String filterPattern, String sortBy, int startIndex, int fetchSize)

Returns the `Connection` object, which provides details about the connection, including the connection's user ID, the connections lists on which the connection is a member, and details from a connection's profile. Table 40–11 lists and describes the parameters associated with this method. Table 40–12 lists and describes the attributes associated with this method.

Table 40–11 Parameters of the Method getConnections

Parameter	Description
userid	The user ID for each returned connection
connectionListName	The name of the connection list from which to obtain connections
filterPattern	A filter to use against returned connections, such as "co," which returns `condoleezza` as well as `nicole`
sortBy	The order by which to sort connections Enter `LAST_ACTIVITY_TIME` to sort connections in descending date/time order. Leave blank to sort alphabetically by name.
startIndex	The point from which to start fetching results This is used for pagination. For example, the search can return 50 matching records, and only 10 are needed, starting from 1. Set `startIndex` to 1 and `fetchSize` to 10.
fetchSize	The number of results to return (see `startIndex`)

Table 40–12 Attributes of the Method getConnections

Attribute	Description
connecteeUserId	The user ID of a connection
connectionListsMembershipList	The names of connections lists of which the connection is a member
connecteeUserProfile	The connectee's Profile details

40.1.2.12 getNumberOfConnections(String userid, String connectionListName, String filterPattern)

Returns the number of users (`int`) connected to the identified user. Table 40–13 lists and describes the parameters associated with this method. Table 40–14 lists and describes the attributes associated with this method.

Table 40–13 Parameters of the Method getNumberOfConnections

Parameter	Description
`userid`	The user ID for whom to return the number of connections
`connectionListName`	The name of the connection list from which to obtain a count
`filterPattern`	A filter to use against returned connections, such as "co," which returns `condoleezza` as well as `nicole`

Table 40–14 Attributes of the Method getNumberOfConnections

Attribute	Description
`Int`	The number of connections to return

40.1.2.13 ignoreInvitation(String invitationId)

Specifies that the invitation with the specified ID should be ignored. Table 40–15 lists and describes the parameters associated with this method.

Table 40–15 Parameters of the Method ignoreInvitation

Parameter	Description
`invitationId`	The GUID of the connection invitation to ignore

40.1.2.14 inviteUserForConnection(String userid, String invitationMessage, Collection connectionListNames)

A means of inviting the user with the specified user ID to connect. Includes the invitation message, such as, "I would like you to be my connection." Also includes one or more connection list names to which to add the invitee once the invitation is accepted. Table 40–16 lists and describes the parameters associated with this method.

Table 40–16 Parameters of the Method inviteUserForConnection

Parameter	Description
`userid`	User ID of the invitee
`invitationMessage`	Connection message, such as, "Let's connect!"
`connectionListNames`	The names of the connections lists to add the invitee to once the invitation is accepted

40.1.2.15 isConnectionListModifiable(String listName)

Returns true or false (`boolean`) as to whether the named connections list can be modified. Table 40–17 lists and describes the parameters associated with this method. Table 40–18 lists and describes the attributes associated with this method.

Table 40–17 Parameters of the Method isConnectionListModifiable

Parameter	Description
`listName`	The name of the connections list for which to determine whether it can be modified

Table 40–18 Attributes of the Method isConnecitonListModifiable

Attribute	Description
`boolean`	True or false, depending on whether the named connections list can be modified

40.1.2.16 isConnectionPartOfUnmodifiableList(String connecteeGuid)

Returns true or false (`boolean`) as to whether the identified user is a member of a connections list that cannot be modified. Table 40–19 lists and describes the parameters associated with this method. Table 40–20 lists and describes the attributes associated with this method.

Table 40–19 Parameters of the Method isConnectionPartOfUnmodifiableList

Parameter	Description
`connecteeGuid`	The GUID of the connection for whom to determine whether this connection is a member of a connections list that cannot be modified

Table 40–20 Attributes of the Method isConnecitonPartOfUnmodifiableLIst

Attribute	Description
`boolean`	True or false, depending on whether the user is a member of a connections list that cannot be modified

40.1.2.17 removeConnection(String userid, boolean fromListOnly, String listName)

A method for removing the identified connection either as a connection or from a connections list. Table 40–21 lists and describes the parameters associated with this method.

Table 40–21 Parameters of the Method removeConnection

Parameter	Description
`userid`	The user name of the connection to remove from the specified list
`fromListsOnly`	A flag (true or false) indicating whether to remove the user as a connection or remove the user only from the specified connections list
`listName`	The name of the connections list from which to remove the specified user

40.1.2.18 searchUsers(String filterPattern, int startIndex, int fetchSize)

Returns the object `Users`, which is a collection of details about returned users, including the user's relational attributes, GUID, and profile details. Table 40–22 lists and describes the parameters associated with this method. Table 40–23 lists and describes the attributes associated with this method.

Table 40–22 Parameters of the Method searchUsers

Parameter	Description
`filterPattern`	A filter to use against returned search terms, such as "co," which returns `condoleezza` as well as `nicole`

Table 40–22 (Cont.) Parameters of the Method searchUsers

Parameter	Description
`startIndex`	The point from which to start fetching results This is used for pagination. For example, the search can return 50 matching records, and only 10 are needed, starting from 1. Set `startIndex` to 1 and `fetchSize` to 10.
`fetchSize`	The number of results to return (see `startIndex`)

Table 40–23 Attributes of the Method searchUsers

Attribute	Description
`relationalAttributes`	—
`userGuid`	The user's unique GUID
`userProfile`	The user's Profile details

40.1.2.19 updateConnectionListsMembership(String member, Collection addListIds, Collection removeListIds)

Provides a means of updating an identified connection's list membership by adding the connection to identified connections lists and removing the connection from identified connections lists. Table 40–24 lists and describes the parameters associated with this method.

Table 40–24 Parameters of the updateConnectionListsMembership Method

Parameter	Description
`member`	The user name of the member whose connections list membership to manage
`addListIds`	The names of the connections lists to which to add the identified user
`removeListIds`	The names of the connections lists from which to remove the identified user

40.1.3 Working with Profile Data Control

The Profile Data Control provides methods for returning and updating Profile details.

The subsections in this section list and describe the methods associated with the Profile Data Control.

40.1.3.1 Method: getProfile(String userId)

A method for returning the `WCUserProfile` object, which is a collection of user Profile details. Table 40–25 lists and describes the parameters associated with this method.

Table 40–25 Parameters for the getProfile Method

Parameter	Description
`userID`	The ID of the user for whom to return Profile details

> **Tip:** To see the attributes associated with the `WCUserProfile` object, expand the `WCUserProfile` node under the `getProfile` method on the Data Controls panel in the Application Navigator.

40.1.3.2 Method: getProfileForUpdate(String userId)

A method for updating the `WCUserProfile` object, which is a collection of user Profile details. Table 40–26 lists and describes the parameters associated with this method.

Table 40–26 Parameters for the getProfileForUpdate Method

Parameter	Description
`userID`	The ID of the user for whom to update Profile details

> **Tip:** To see the attributes associated with the `WCUserProfile` object, expand the `WCUserProfile` node under the `getProfileForUpdate` method on the Data Controls panel in the Application Navigator.

40.2 People Connections Service Java APIs

The People Connections service has associated Java APIs that you can use to work with service features. These include:

- `oracle.webcenter.peopleconnections.connections`
- `oracle.webcenter.peopleconnections.wall`
- `oracle.webcenter.activitystreaming`

For more information, see the *Java API Reference for Oracle WebCenter Portal*.

41

Integrating Worklists

This chapter describes how to integrate worklists into your application. Worklists enable users to view and take action on all tasks and notifications from a BPEL (Business Process Execution Language) server all in one place.

This chapter includes the following topics:

- Section 41.1, "Introduction to Worklists"
- Section 41.2, "Roadmap - Configuring Worklists for Portal Framework Applications"
- Section 41.3, "Basic Configuration for Worklists"
- Section 41.4, "Advanced Information for Worklists"

For information about managing and using worklists, see:

- the "Managing Worklists" chapter in *Administering Oracle WebCenter Portal*
- the "Adding Worklists to a Portal" chapter in *Building Portals with Oracle WebCenter Portal*
- the "Exploring Your Worklists" chapter in *Using Oracle WebCenter Portal*

41.1 Introduction to Worklists

Worklists enable you to show Business Process Execution Language (BPEL) Worklist items assigned to the currently authenticated user. The BPEL Worklist items are open BPEL tasks from one or more BPEL Worklist Repositories to which your application is connected. The Worklist displays BPEL Worklist items that are a result of a task invoked as part of a BPEL Workflow process, or are a result of a message being sent to the Worklist channel on the Oracle User Messaging Service.

This section contains the following subsections:

- Section 41.1.1, "Understanding Worklists"
- Section 41.1.2, "Requirements for Worklists"
- Section 41.1.3, "What Happens at Runtime"

41.1.1 Understanding Worklists

Worklists provide a personal, at-a-glance view of business processes that require your users' attention. These can include a request for document review or other types of business processes that come directly from your enterprise applications.

Worklist items come from a variety of sources. Some worklist items are kicked off by events that are associated with an externally defined workflow. A workflow maps the route an item follows once an event kicks off. This type of workflow is defined in a worklist BPEL server, such as Oracle BPM Worklist.

Messages, alerts, and notifications might also come from the User Messaging Service (UMS). The Worklist task flow includes a control for accessing messaging preferences on this server. Use these controls to specify the channels over which to receive Oracle User Messaging Service messages and to define messaging filters.

41.1.2 Requirements for Worklists

To use worklists, you must have a BPEL server installed. For information on installing BPEL for worklists, see the "Back-End Requirements for Worklists" in the *Installation Guide for Oracle WebCenter Portal*.

For a worklist to properly function, it must reside on a secured page, as it uses the currently authenticated user to access the BPEL server. If the page or application that contains the worklist is not secured, you will encounter exception errors.

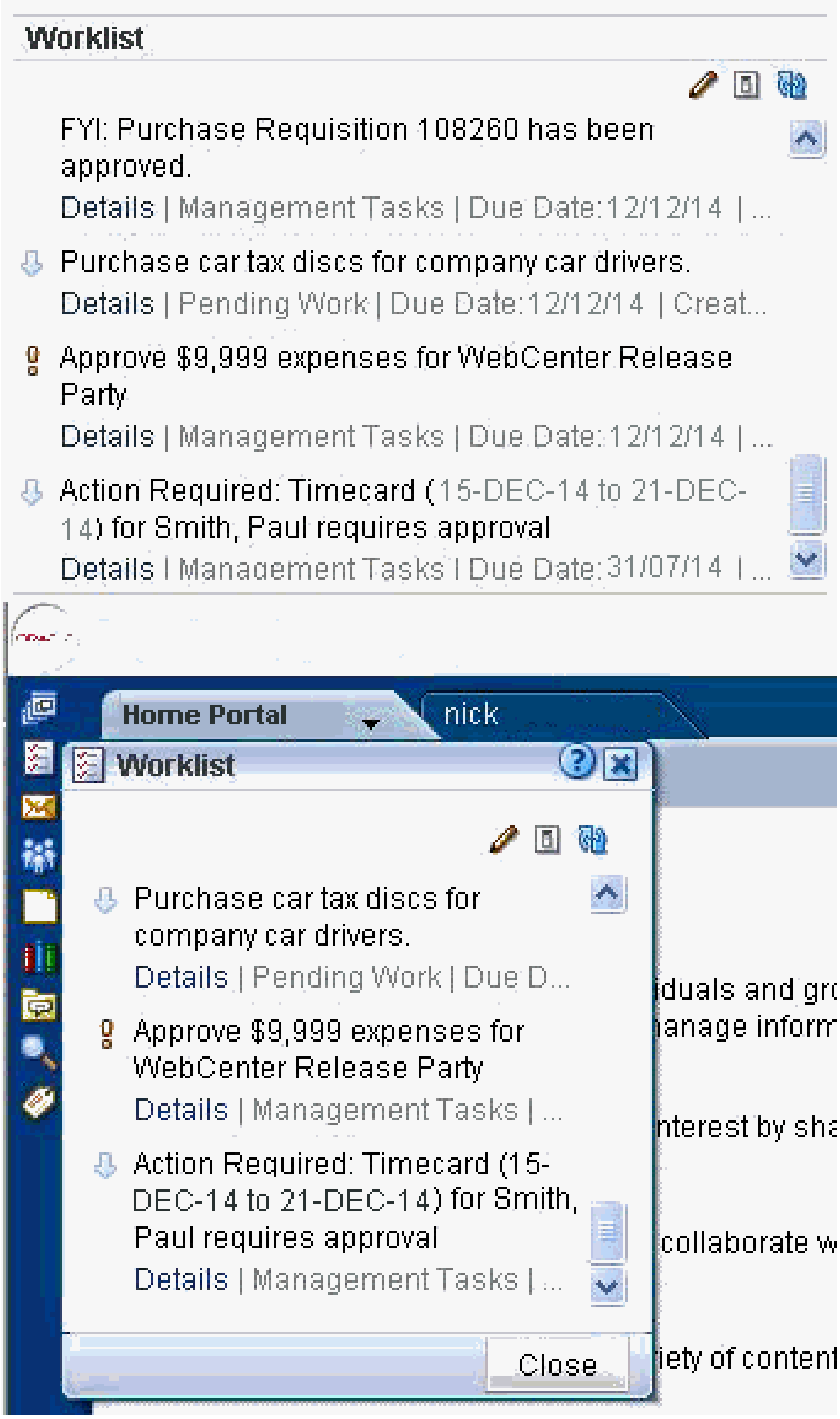
41.1.3 What Happens at Runtime

At runtime, the Worklist task flow fetches latest worklist workflow items from BPEL workflows configured in the BPEL server. For more information, see the "Exploring Your Worklists" chapter in *Using Oracle WebCenter Portal*.

To get a list of the items assigned to a user, worklists uses the WebService access function of the public BPM client API. Worklists uses SAML authentication to authorize the logged-in user to fetch the list of latest items from the BPEL repository. Worklists fetches the 25 most recent items for each worklist connection and determines the order of these items by using a predicate on the `TaskQueryService` API. For more information, see "Building a Custom Worklist Client" in *Developer's Guide for Oracle SOA Suite*.

Figure 41–1 shows worklists at runtime.

Figure 41–1 Worklists at Runtime



FYI: Purchase Requisition 108260 has been approved.

Details | Management Tasks | Due Date:12/12/14 | ...

Purchase car tax discs for company car drivers.

Details | Pending Work | Due Date:12/12/14 | Creat...

Approve $9,999 expenses for WebCenter Release Party

Details | Management Tasks | Due Date:12/12/14 | ...

Action Required: Timecard (15-DEC-14 to 21-DEC-14) for Smith, Paul requires approval

Details | Management Tasks | Due Date:31/07/14 | ...

Purchase car tax discs for company car drivers.

Details | Pending Work | Due D...

Approve $9,999 expenses for WebCenter Release Party

Details | Management Tasks | ...

Action Required: Timecard (15-DEC-14 to 21-DEC-14) for Smith, Paul requires approval

Details | Management Tasks | ...

41.2 Roadmap - Configuring Worklists for Portal Framework Applications

Figure 41–2 and Table 41–1 in this section provide an overview of the prerequisites and tasks required to get worklists working in Portal Framework applications.

Figure 41–2 Configuring Worklists for Portal Framework Applications

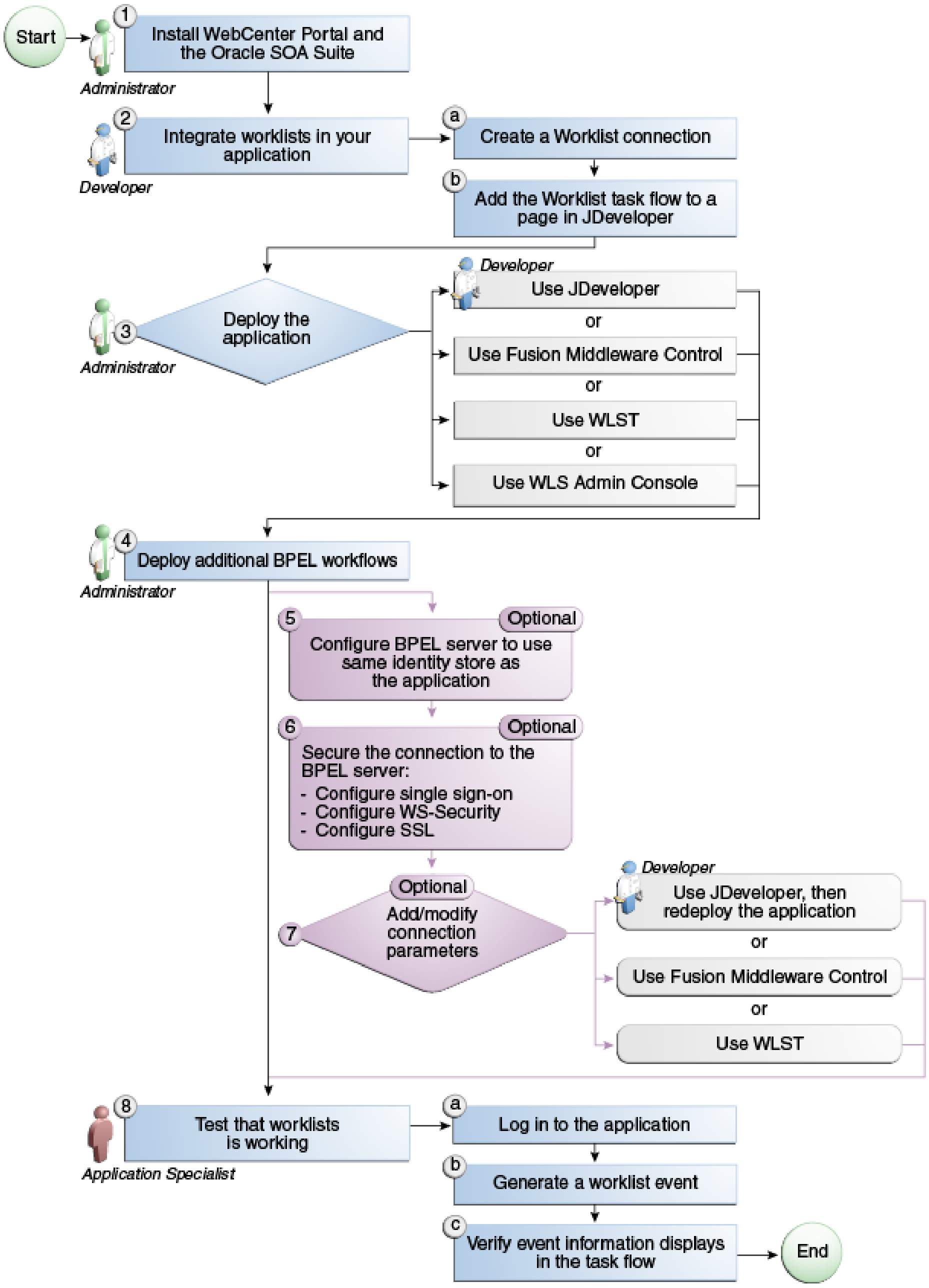

Start
1
Install WebCenter Portal and the Oracle SOA Suite
Administrator
2
Integrate worklists in your application
Developer
a
Create a Worklist connection
b
Add the Worklist task flow to a page in JDeveloper
Developer
Use JDeveloper
or
Use Fusion Middleware Control
or
Use WLST
or
Use WLS Admin Console
3
Deploy the application
Administrator
4
Deploy additional BPEL workflows
Administrator
5
Optional
Configure BPEL server to use same identity store as the application
6
Optional
Secure the connection to the BPEL server:
- Configure single sign-on
- Configure WS-Security
- Configure SSL
7
Optional
Add/modify connection parameters
Developer
Use JDeveloper, then redeploy the application
or
Use Fusion Middleware Control
or
Use WLST
8
Test that worklists is working
Application Specialist
a
Log in to the application
b
Generate a worklist event
c
Verify event information displays in the task flow
End

Table 41–1 Configuring the Worklist for Portal Framework Applications

Actor	Task	Sub-Task
Administrator	**1.** Install Oracle WebCenter Portal and the Oracle SOA Suite	
Developer	**2.** Integrate worklist in your Portal Framework application	**2.a** Create a Worklist connection **2.b** Add the Worklist task flow to a page in JDeveloper

Table 41–1 (Cont.) Configuring the Worklist for Portal Framework Applications

Actor	Task	Sub-Task
Developer/Administrator	**3.** Deploy the application using one of the following tools: ■ JDeveloper (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator) ■ WLS Admin Console (Administrator)	
Administrator	**4.** Deploy additional BPEL workflows using the Oracle BPM Worklist application (see "Deploying and Managing SOA Composite Applications" in *Administrator's Guide for Oracle SOA Suite and Oracle Business Process Management Suite*)	
Administrator	**5.** (Optional): Configure BPEL server to use same identity store as the application	
Administrator	**6.** (Optional): Secure the connection to the BPEL server	**6.a** Configure single sign-on **6.b** Configure WS-Security **6.c** Configure SSL
Developer/Administrator	**7.** (Optional): Add/modify connection parameters using one of the following tools: ■ JDeveloper, then redeploy the application (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator)	
End User	**8.** Test that worklists functionality is working	**8.a** Log in to the Portal Framework application **8.b** Generate a worklist event **8.c** Verify event information displays in the task flow

41.3 Basic Configuration for Worklists

This section describes how to set up a connection for worklists and add the task flow to your Portal Framework application.

This section contains the following subsections:

- Section 41.3.1, "Setting up Connections for Worklists"
- Section 41.3.2, "Adding Worklists Functionality at Design Time"
- Section 41.3.3, "Setting Security for Worklists"

41.3.1 Setting up Connections for Worklists

To use worklists, you must establish a connection to one or more BPEL servers. This section describes these connections and how to create them in a Portal Framework application.

41.3.1.1 Worklist Connections

Worklist rely on a BPEL server. After you create a connection using the Create Worklist Connection dialog, the connection is registered in your application's `connections.xml` and referenced in your application's `adf-config.xml`. You can see the connections to your BPEL Worklist Repositories in the Application Resources pane.

> **Note:** While you can set up the connections to back-end servers at design time in Oracle JDeveloper, you can later add, delete, or modify connections in your deployed environment using Fusion Middleware Control. For more information, see the *Administering Oracle WebCenter Portal*.

41.3.1.2 How to Set Up Connections for Worklists

You can add the Worklist task flow to your application at design time or at runtime. Before you can run the task flow, you must create a connection from your application to a BPEL server.

> **See Also:** Chapter 4, "Preparing Your Application for WebCenter Portal Tools and Services"

To set up the connection for worklists:

1. In the Application Resources panel for your application, right-click **Connections**, then choose **New Connection> Worklist**.
2. In the Create Worklist Connection dialog, choose whether to create the connection in the Application Resources (only the current application can use this connection) or IDE Connections (other applications you create can use the same connection).
3. In the **Connection Name** field, enter a name for your connection. This name will be used as the display name of the Worklist server.

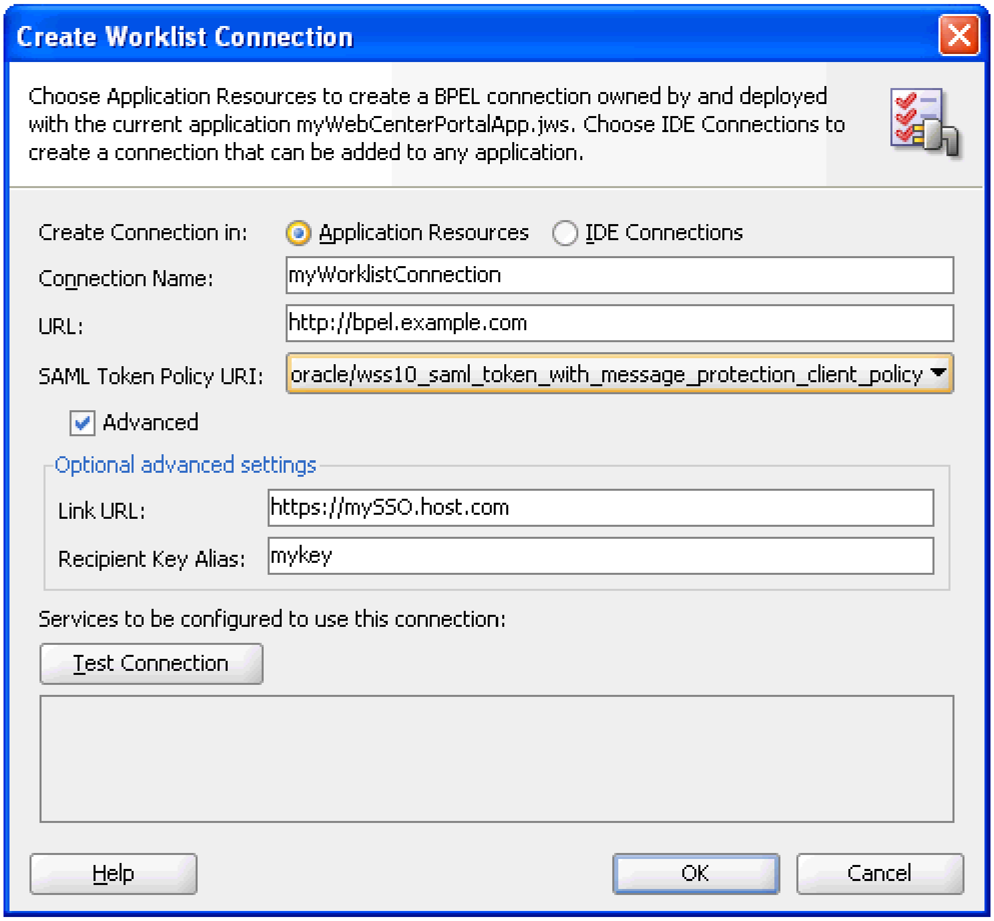
> **Note:** At runtime, when users view their worklist items, they can choose to group the items by "Worklist Server." The Worklist Server name used is the name you enter in the Connection Name field.

4. In the **URL** field, enter the location of your BPEL/SOA server, such as `http://bpel.example.com`. This is the URL for the managed server running the SOA processes.
5. Select the **SAML Token Policy URI** to use for this server (Figure 41–3).

   SAML (Security Assertion Markup Language) is an XML-based standard for passing security tokens defining authentication and authorization rights. An attesting entity (that already has trust relationship with the receiver) vouches for the verification of the subject by method called sender-vouches. Options available are:

- SAML Token Client Policy (**oracle/wss10_saml_token_client_policy**) - Select to verify your basic configuration without any additional security. This is the default setting.
- SAML Token With Message Client Policy (**oracle/wss10_saml_token_with_message_protection_client_policy**) - Select to increase the security using SAML-based BPEL Web Services. If selected, you must configure keys stores both in your Portal Framework application and in the BPEL application. For more information about this configuration, see the "Configuring Policies" section in the *Security and Administrator's Guide for Web Services*.

Figure 41–3 Create Worklist Connection Dialog



Create Worklist Connection

Choose Application Resources to create a BPEL connection owned by and deployed with the current application myWebCenterPortalApp.jws. Choose IDE Connections to create a connection that can be added to any application.

Create Connection in: ● Application Resources ○ IDE Connections

Connection Name: myWorklistConnection

URL: http://bpel.example.com

SAML Token Policy URI: oracle/wss10_saml_token_with_message_protection_client_policy

☑ Advanced

Optional advanced settings

Link URL: https://mySSO.host.com

Recipient Key Alias: mykey

Services to be configured to use this connection:

6. To enable advanced settings, select **Advanced**:

   - In the **Link URL** field, specify the URL used to link to the BPEL server. Only required if it is different to the BPEL SOAP URL, for example, when SSO or HTTPS is configured. Use the format: `protocol://host:port`.

     For example, `http://mySSO.host.com:7777`.

     This URL is used to build SSO- or HTTPS-enabled URL links to worklist items, whereas the URL property for worklists is used to access the BPEL Task Query Service, which for performance reasons does not need to go through HTTPS or an SSO server.

   - In the **Recipient Key Alias** field, enter the recipient key alias to be used for message protected SAML policy authentication. Only required when the BPEL server connection is using a SAML token policy for authentication and the application is using multiple BPEL server connections. For information about working with recipient key alias and WS-security, see the chapter "Configuring WS-Security" in *Administering Oracle WebCenter Portal*.

7. Click **Test Connection** to validate the URL.
8. Click **OK**.

   The new connection displays in the Application Resources panel under **Connections**.

41.3.2 Adding Worklists Functionality at Design Time

This section describes the Worklist task flow and how to add it to your application.

41.3.2.1 Worklist Task Flow

The Worklist task flow is found in the WebCenter Portal - Services Catalog in the Resource Palette.

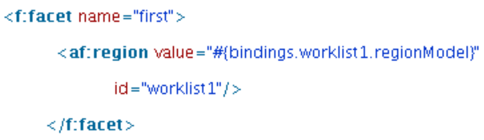
41.3.2.2 How to Add the Worklists Functionality to your Application

You can add worklists functionality to your application before or after you have created your connection. However, you must set up your connection before you run the application.

To add the Worklist task flow to your application:

1. Follow the steps in Section 4.2.1, "How to Prepare Your Application to Consume Tools and Services" to implement security and create a customizable page in your application.
2. Open the page where you wish to add the Worklist task flow.
3. In the Resource Palette, in the My Catalogs pane, open the **WebCenter Portal - Services Catalog**, then open the **Task Flows** folder.
4. Drag the Worklist task flow onto the desired region on the page, then choose **Region** from the pop-up list. The task flow displays on the page. For example, in the Source view, you will see Figure 41–4.

Figure 41–4 Worklist Task Flow in the Page Source



```
<f:facet name="first">
    <af:region value="#{bindings.worklist1.regionModel}"
        id="worklist1"/>
  </f:facet>
```

5. Save your project, then run your page to a browser. The worklist displays in your browser.

41.3.3 Setting Security for Worklists

Worklists display the tasks for the currently authenticated user. So, for users to store and retrieve worklist tasks on the BPEL server from your application, you must set up security on the application (as described in Section 4.2.1.1, "Implementing Security for Tools and Services"). The user names need to either exist in a shared user directory (LDAP), or set up similarly (same user name) on both the Portal Framework application and the BPEL Server. For example, if the user `rsmith` needs to use worklists in your Portal Framework application to store and retrieve tasks from the BPEL server, then you must ensure that the user `rsmith` exists on both the BPEL server and within your application.

To enable users to perform actions on assigned worklist tasks, you can configure SSO. If you do not configure SSO, the users will be prompted to log into the Worklist Task Details page on the BPEL server. For more information, see the *Securing Applications with Oracle Platform Security Services*.

Only authenticated users can view worklist tasks on the BPEL server to which they have permissions to view. If the application end user does not supply appropriate credentials, or if the page containing the worklist is not secured, she will not see any worklist items stored on the BPEL server and exception errors may occur.

41.4 Advanced Information for Worklists

Worklists collate all the worklist items for the authenticated user from all connections in your application defined for the worklists. You can use the create connection method described in Section 41.3.1.2, "How to Set Up Connections for Worklists" to create additional connections, or right-click the connection name in the Application Resources list and choose **Delete** to remove a connection.

42

Using the People Connections REST APIs

This chapter describes the REST APIs associated with People Connections.

This chapter includes the following topics:

- Section 42.1, "Activity Stream REST API"
- Section 42.2, "Connections and Profile REST API"
- Section 42.3, "Feedback REST API"
- Section 42.4, "Message Board REST API"
- Section 42.5, "Creating an Invitation"

> **See Also:** For an introduction to the REST APIs, see Chapter 53, "Using Oracle WebCenter Portal REST APIs."

42.1 Activity Stream REST API

Use the Activity Stream REST API to browse user application activities in an activity stream. This section provides information about the REST API methods you can use to perform this action.

This section includes the following subsections:

- Section 42.1.1, "Activity Stream Entry Point"
- Section 42.1.2, "Activity Stream Resource Type Taxonomy"
- Section 42.1.3, "Activity Stream Security Considerations"
- Section 42.1.4, "Activity Stream Resource Types"

> **Note:** Because the REST API can be configured in many different ways, it's possible that not all of a user's activities will be returned, allowing the REST client to customize how the Activity Stream behaves separately from the Framework application.

42.1.1 Activity Stream Entry Point

Each REST service has a link element within the Resource Index that provides the entry point for that service. For People Connections, each feature has its own link element. For example, to find the entry point for the People Connections' Activity Stream feature, find the link elements with a `resourceType` of:

```
urn:oracle:webcenter:activities:stream
```

The corresponding `href` or `template` element provides the URI entry point, which retrieves application activities for the current user from the Activity Stream. The client sends HTTP requests to this entry point to work with the People Connections' Activity Stream feature.

> **See Also:** For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index."
>
> For more information about resource types, see Section 53.5.2.1, "Resource Type."

42.1.2 Activity Stream Resource Type Taxonomy

When the client has identified the entry point, it can then navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 42.1.4, "Activity Stream Resource Types."

The resource type taxonomy for the People Connections' Activity Stream feature is:

```
urn:oracle:webcenter:activities:stream
urn:oracle:webcenter:activities:activity
```

42.1.3 Activity Stream Security Considerations

You must be logged into the REST service to access any of the People Connections REST APIs. After that, the underlying service handles permission checking and the like.

> **See Also:** For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

42.1.4 Activity Stream Resource Types

This section provides you with all the information you need to know about each resource type. It includes the following subsections:

- "urn:oracle:webcenter:activities:stream"
- "urn:oracle:webcenter:activities:activity"

urn:oracle:webcenter:activities:stream

The `stream` response contains URIs for use in retrieving activities from the Activity Stream.

You can retrieve the activities from a user's stream or activities from a user's connections' streams. To have even greater control over which activities to retrieve, use the activity stream query filter. With the query filter, you can:

- Specify the user to query
- Include the user's connections' activities in the results
- Include activities from portals, including the Home portal, in the results
- Restrict the results to activities from specific services

The options available to you depend on the path you take to get to the `stream` resource and the `rel` of the link that you use. For example, the activity stream query filter is available only from links with a `rel` attribute of urn:oracle:webcenter:activities:stream. If you access the activity stream query filter from the person resource, the personGuid parameter is prefilled.

Table 42–1 shows the activities returned depending on the rel element of the link.

Table 42–1 Activities Returned by stream

rel	Returns
urn:oracle:webcenter:activities:stream:person	Activities from the user's stream (*GUID*/@self)[1]
urn:oracle:webcenter:activities:stream:connections	Activities from the user's connections' streams (*GUID*/@connections)[1]
urn:oracle:webcenter:activities:stream	Activities determined by the activity stream query filter
urn:oracle:webcenter:activities:stream:space	Activities from the portal activity stream
urn:oracle:webcenter:activities:stream:list	Activities from the portal activity list

[1] *GUID* can be any valid user GUID or @me.

Navigation Paths to stream

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceIndex
   stream (rel="urn:oracle:webcenter:activities:stream:person" or
               "urn:oracle:webcenter:activities:stream")

resourceIndex
   person
      stream (rel="urn:oracle:webcenter:activities:stream:person" or
                  "urn:oracle:webcenter:activities:stream:connections" or
                  "urn:oracle:webcenter:activities:stream")

resourceIndex
   person
      list
         stream

resourceIndex
   space
      stream

stream
   activity
      param
         stream (rel="urn:oracle:webcenter:activities:stream:space")

personReference
   stream
```

Supported Methods for stream

The following method is supported by the stream resource:

- GET
  - **request—Parameters:**

- startIndex, itemsPerPage

See Also: For information about REST API parameters, such as startIndex and itemsPerPage, see "Common Request Query Parameters".

The following additional parameters are available for the query filter URI:

- fromDate – Specifies activities start date (yyyy-mm-dd).
- toDate – Specifies activities end date, (yyyy-mm-dd).
- data – Returns specified data only (for more information, see "Common Request Query Parameters"). For the stream resource, if you specify the constant 'data' as the data parameter, all of the basic information about the resource is returned except "comments" and "likes" summaries. If you want to return comments or likes, specify the data parameter value 'commentsSummary' or 'likesSummary'.

Note: You can specify multiple data values as a comma separated list. For example, data=data, commentsSummary.

- personGuid – (Required) Retrieves activities from the stream for the specified user. **Valid values:** any valid user GUID or @me.
- serviceIds – Retrieves activities only for the specified services. **Valid values:** An asterisk (*) returns all services. If null or empty, uses the user preference settings for service filters (from the settings link in the top bar).
- personal – Includes the specified user's activities in the Home portal. **Valid values:** true or false. **Default value:** false.
- connections – Includes activities from the streams of the specified user's connections. **Valid values:** true or false. **Default value:** false.
- groupSpaces – Includes activities from all portals of which the specified user is a member. **Valid values:** true or false. **Default value:** false.
- connectionListIds – A comma separated list of connection list names that specifies the connection lists used to show activities.
- groupSpaceGuids – A comma separated list of portal GUIDs used to show activities.
- userGroupSpaceActivities – Specifies whether or not to show the user's activities in their portal. **Valid values:** true or false. **Default value:** false.
- followedObjects – Specifies whether or not to show all activities for followed objects that both the current user and the specified user follow. **Valid values:** true or false. **Default value:** false.
- followedObjectsUserActivities – Specifies whether or not to show the specified user's activities for followed objects that both the current user and the specified user follow. **Valid values:** true or false. **Default value:** false.
- advancedQuery – Specifies filters against streamed activities. Create filters for user names, service IDs, and object details, such as a document's display name.

Note: You must plug actual values into the `advancedQuery` parameter. You cannot pass EL expressions directly into the parameter. Typically, the REST API client handles an EL transformation manually and inserts the actual object data value into the REST URL. See the example below, and see also Section 39.4, "About the Activity Stream Advanced Query Option."

For example, the following URI returns activities from the current user's activity stream, for all services that the user has configured in their personal preference settings for service filters. It returns activities from the user's Home portal and from the streams of the user's connections:

```
http://host:port/rest/api/activities?personal=true&connections=true&personG
uid=@me&token=utoken
```

The following URI returns only the user's personal profile and connections activities:

```
http://host:port/rest/api/activities?serviceIds=oracle.webcenter.peopleconn
ections.profile,oracle.webcenter.peopleconnections.connections&personal=
true&personGuid=@me&token=utoken
```

This next example illustrates how to use the `advancedQuery` parameter. As explained previously, you cannot pass an EL expression to `advancedQuery`. The REST API client must first obtain the actual data object value, and that value can then be passed to `advancedQuery`. For example, to filter activities for a particular portal, you can pass the GUID of the portal's scope to `advancedQuery`:

```
http://host:port/rest/api/activities?personGuid=@me&advancedQuery=AE.SCOPE_
ID%20%3D%20\%27s8bba98ff_4cbb_40b8_beee_296c916a23ed\%27&ttoken=token
```

where `s8bba98ff_4cbb_40b8_beee_296c916a23ed` is the GUID of the portal. Note that the query string must be encoded with the appropriate escape codes. For a list of EL expressions that can be used to obtain values for `advancedQuery`, see Section 39.4, "About the Activity Stream Advanced Query Option."

– **response—Body:** 0 or more activities

Note: Because the `stream` resource includes activity items, the response may also return resource links for the objects referenced in the activity.

Resource Types Linked to From stream

Table 42–2 lists the resource types that the client can link to from the `stream` resource.

Table 42–2 Related Resource Types for stream

rel	resourceType
self urn:oracle:webcenter:activities:stream:person	urn:oracle:webcenter:activities:stream urn:oracle:webcenter:activities:activity

urn:oracle:webcenter:activities:activity

The `activity` response contains the data for activities and URIs for use in retrieving all the data you need from an activity that is included in an Activity Stream.

Navigation Paths to activity

This section shows how the client can navigate through the hypermedia to access the `activity` resource:

```
resourceIndex
   stream
      activity

resourceIndex
   person
      stream
         activity

resourceIndex
   space
      stream
         activity
```

Supported Methods for activity

No methods are supported for `activity`. Activities are currently available only from the `stream` resource type.

Resource Types Linked to from activity

Table 42–3 lists the resource types that the client can link to from this resource.

Table 42–3 Related Resource Types for urn:oracle:webcenter:activities:activity

rel	resourceType
self	`urn:oracle:webcenter:activities:activity`
icon	`urn:oracle:webcenter:activities:activity:icon`

Read-only Elements for activity

Table 42–4 lists the read-only elements for the `activity` resource.

> **See Also:** For information about `projection`, see "Common Request Query Parameters".

> **Note:** The activity will also return a link to an activity icon in the links section of the response, if an icon is available. See urn:oracle:webcenter:activities:activity:icon.

Table 42–4 Read-Only Elements for activity

Element	Type	Description
`activityType`	String	Activity type Unique within the service. For example, Discussions can return the `activityType` `createForum`.

Table 42–4 (Cont.) Read-Only Elements for activity

Element	Type	Description
`commentsCount`	String	If you specify `commentsSummary` in the data parameter, then the `commentsCount` parameter will be returned.
`createdDate`	Date (String)[1]	Date the activity was created.
`description`	String	The description of the activity.
`detail`	String	Detail information for the activity, if available. For example, this might return the contents of a message, the file name of a document, and the like. Similar to `detailURL`. Both, either, or neither can be used. The detailURL will be available when creating wiki and blog in a portal.
`detailURL`	String	detailURL is available when creating wikis and blogs in a portal. In a Web-based WebCenter Portal, the user can click this URL and open a wiki or blog page in a portal. Similar to `detail`. Both, either, or neither can be used.
`displayDescription`	String	A pre-formatted, internationalized description.
`displayMessage`	String	A pre-formatted, internationalized message (does not include template information).
`groupSpace`	groupSpaceReference	Information about the portal in which the activity was performed **Note:** This reference is not present for activities that did not happen in a portal (for example, activities that happened in the Home portal). Also, because creation of a portal happens in a Home portal, that activity does not have this element either.
`id`	String	Unique ID of the message
`isSummary`	true or false	Indicates whether or not this activity is a summary of other activities.
`likesCount`	String	If you specify `likesSummary` in the data parameter, then the `likesCount` parameter will be returned.
`message`	String	Localized string for this activity This may contain replacement strings within curly braces ({}).
`permission`	PRIVATE SHARED PUBLIC	Permission level of this activity

Table 42–4 (Cont.) Read-Only Elements for activity

Element	Type	Description
`scope`	String	Scope of the activity This might return a portal, like the Home portal. For example, for a portal, it returns a string similar to the following: `s8bba98ff_4cbb_40b8_beee_296c916a23ed`
`serviceId`	String	Unique ID of the service that created the activity **Note:** For a list of WebCenter Portal tools and services IDs, see Table G–7, " Service and Tool IDs".

`sharedLink_url`	String	Can be used to render a navigation link by the REST client as shown in the example below:
		`<param resourceType="urn:oracle:webcenter:activities:parameter">`
		`<links>`
		`<link href="http://www.google.com" />`
		`</links>`
		`<displayName>http://www.google.com</displayName>`
		`<key>_sharedLink_url</key>`
		`<type>custom</type>`
		`</param> "`
		Note that this parameter cannot be used in a message template (for example: `{actor[0]}` has created the portal {object[0]}).

`templateParams`	urn:oracle:webcenter:activities:parameter	A list of `param` elements that capture data related to an activity. A key provided with each `templateParam` <param> element allows you to plug one or more data items into a parameterized activity message. See "Understanding the templateParams Element".
`custom`	Param	The custom parameter includes a `displayName`, `key`, and `type`, and may or may not have a URL.

[1] Data types, such as `DATE` and `BOOLEAN`, are stored in the API as `STRING`. The `DATE` data type returns a Java standard date format, for example, `2009-08-21T14:43:11.0013-0700`, with `0700` representing the time zone.

Understanding the templateParams Element

Suppose you want to display the most recent messages for a user named Carl. You want to display information like this: "Carl created the portal Customer Feedback". The `templateParams` element helps you solve this problem.

The `templateParams` element is returned in objects of type `oracle:webcenter:activities:activity`. This element captures a lot of data related to an activity. For example, if a user creates a new portal, the `templateParams` element for that activity captures information about the user and about the portal. Keys are provided that allow you to perform string substitutions in a parameterized message string related to the activity.

For example, if the user creates a portal, the returned activity object contains a `<message>` item that is parameterized like this:

```
<message>{actor[0]} has created the portal {object[0]}</message>
```

By parsing the `templateParams` element for the activity, you can find the available keys that allow you to perform string substitutions as well as appropriate data to display, like the name of the user and the activity.

For a detailed example showing how you might code a UI using `templateParams` to display information about an activity, see Section 53.13.2, "Displaying Activity Stream Data."

The `templateParams` element also provides links to `comments`, `likes`, `commentsSummary`, and `likesSummary` objects, if they are requested using the `data` parameter. These links let you query for all the comments or likes for an object or post a new comment or like. The summary links returns the comments or likes count and several recent comments or likes. See also "Understanding Comments and Likes".

The links returned with the `templateParams` element vary depending on what kind of object is returned, like a user, document, portal, or custom object. For more information, see "urn:oracle:webcenter:activities:parameter".

> **Note:** The `templateParams` element can sometimes contain elements that are not directly referenced in the message.

If a `rel` link is marked "via," this means it is a link to the underlying REST object–for instance, the document not the parameter. If a `rel` link is marked "alternate" and type "text/html," it is a link to the HTML page for that object. Portal objects include an activity stream link for portals. Users have icon and activity stream links. Other objects can have an `alt` link to the tagged item, as well as the related tagged items list, if tagging is enabled for that object. If a regular object supports comments or likes, it can include the comments/commentsSummary and likes/likesSummary, as explained previously.

Understanding Comments and Likes

Hyperlinks to `comments`, `commentsSummary`, `likes` and `likesSummary` are included by default (you can expand the `commentsSummary` and `likesSummary` by specifying `data=data,commentsSummary,likesSummary`). Comments and likes can be associated with the object referenced by the activity or the activity itself. For example, if you edit a document, then the comments will be associated with the document. If you add comments on an edit document activity on the activity stream page, then comments will be associated with the edit document activity.

The links associated with comments and likes are:

- `comments` – The `comments` link lets you query for all the comments for an object. This link also lets you POST a new comment. For a `comments` POST, the `text` field is required. For example, for body data you would use:

  JSON:

  ```
  {
    "text" : "REST Comment"
  }
  ```

XML:

```
<text>REST Comment</text>
```

- `commentsSummary` – The `commentsSummary` link returns the comments count and several recent comments.
- `likes` – The `likes` link lets you query for all the likes for an object. This link also lets you POST a new like. There are no required fields for a `likes` POST.
- `likesSummary` – The `likesSummary` link returns the likes count and the current user's like (if available).

> **Note:** `Like` objects themselves only support DELETE, not GET. The `likesCount` and `commentsCount` items return the number of likes or comments for the current object.

The following URLs show examples of `GET` requests for `comments`, `commentSummary`, `likes` and `likesSummary` for a document object:

```
"http://example.com:8892/rest/api/activities/services/oracle.webcenter.doclib/obje
ctTypes/document/objects/(<document_object_
id>)/comments?startIndex=0&amp;itemsPerPage=10&amp;utoken=FCvY3qQSBh0eAByLdxugV-lU
gFO3_w**"

"http://example.com:8892/rest/api/activities/services/oracle.webcenter.doclib/obje
ctTypes/document/objects/(<document_object_
id>)/commentsSummary?utoken=FCvY3qQSBh0eAByLdxugV-lUgFO3_w**"

"http://example.com:8892/rest/api/activities/services/oracle.webcenter.doclib/obje
ctTypes/document/objects/(<document_object_
id>)/likes?startIndex=0&amp;itemsPerPage=10&amp;utoken=FCvY3qQSBh0eAByLdxugV-lUgFO
3_w**"

"http://example.com:8892/rest/api/activities/services/oracle.webcenter.doclib/obje
ctTypes/document/objects/(<document_object_
id>)/likesSummary?utoken=FCvY3qQSBh0eAByLdxugV-lUgFO3_w**"
```

Where <document_object_id> is the document object ID.

The following URLs show examples of `GET` requests for `comments`, `commentSummary`, `likes` and `likesSummary` for a create document activity:

```
"http://example.com:8892/rest/api/activities/ffa9a9f0-d02f-4e30-8c58-8a41b7a6e8a3/
comments?startIndex=0&amp;itemsPerPage=10&amp;utoken=FCvY3qQSBh0eAByLdxugV-lUgFO3_
w**"

"http://example.com:8892/rest/api/activities/ffa9a9f0-d02f-4e30-8c58-8a41b7a6e8a3/
commentsSummary?utoken=FCvY3qQSBh0eAByLdxugV-lUgFO3_w**"

"http://example.com:8892/rest/api/activities/ffa9a9f0-d02f-4e30-8c58-8a41b7a6e8a3/
likes?startIndex=0&amp;itemsPerPage=10&amp;utoken=FCvY3qQSBh0eAByLdxugV-lUgFO3_
w**"

"http://example.com:8892/rest/api/activities/ffa9a9f0-d02f-4e30-8c58-8a41b7a6e8a3/
likesSummary?utoken=FCvY3qQSBh0eAByLdxugV-lUgFO3_w**"
```

urn:oracle:webcenter:activities:parameter

The templateParams element returns a set of param elements. The param elements return data specific to the type of activity object returned. The possible types of param elements include:

- user – Returns the displayName, guid, id, key, primaryId, and type.
- document – Returns the displayName, iconUrl, id, key, primaryId, and type.
- custom – Returns displayName, key, and type, and may or may not have a URL.

A param can also be a variable reference or key of the general form {prefix[index].variable}.

urn:oracle:webcenter:activities:activity:icon

Use this resource type to get the icon of the activity, if available (GET).

Navigation Paths to activities:activity:icon

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   activities
      activity
         icon
```

Supported Methods for icon

The following methods are supported by this resource:

- GET – Returns the icon used for the named activity.

Resource Types Linked to from icon

Table 42–5 lists the resource types that the client can link to from this resource.

Table 42–5 Related Resource Types for urn:oracle:webcenter:activities:activity:icon

rel	resourceType
self	urn:oracle:webcenter:activities:activity:icon
urn:oracle:webcenter:parent	urn:oracle:webcenter:activities:activity

42.2 Connections and Profile REST API

Use the Connections and Profile REST API to browse a profile or a connections list, manage connections lists, add or remove connections, send invitations to connect, and update a profile status message. This section provides information about the REST API methods to use to perform these actions.

This section includes the following subsections:

- Section 42.2.1, "Connections and Profile Entry Point"
- Section 42.2.2, "Connections and Profile Resource Type Taxonomy"
- Section 42.2.3, "Connections and Profile Security Considerations"
- Section 42.2.4, "Connections and Profile Resource Types"

42.2.1 Connections and Profile Entry Point

Each REST service has a link element within the Resource Index that provides the entry point for that service. For People Connections, each feature has its own link element. For example, to find the entry points for the People Connections' Connections and Profile features, find the link elements with a `resourceType` of:

`urn:oracle:webcenter:people` (returns the current user profile)

`urn:oracle:webcenter:people:person` (enables you to query for a user)

`urn:oracle:webcenter:people:invitations` (returns invitations sent or received by the current user)

> **Note:** The `people:person` and `people:invitations` resource types have a `template` but not an `href`.

The corresponding `href` or `template` element provides the URI entry point, which returns a list of people (`people`) or an individual user (`people:person`). The client sends HTTP requests to this entry point to work with the People Connections' Connections and Profile features.

> **See Also:** For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index."
>
> For more information about resource types, see Section 53.5.2.1, "Resource Type."

42.2.2 Connections and Profile Resource Type Taxonomy

When the client has identified the entry point, it can then navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 42.2.4, "Connections and Profile Resource Types."

The resource type taxonomy for the People Connections' Connections and Profile features is:

```
urn:oracle:webcenter:people
   urn:oracle:webcenter:people:person
   urn:oracle:webcenter:people:icon
   urn:oracle:webcenter:people:person:list
      urn:oracle:webcenter:people:person:listNames
      urn:oracle:webcenter:people:person:listName
      urn:oracle:webcenter:people:person:list:member
      urn:oracle:webcenter:people:person:status
   urn:oracle:webcenter:people:invitations
      urn:oracle:webcenter:people:invitation
```

42.2.3 Connections and Profile Security Considerations

You must be logged in to the REST service to access any of the People Connections REST APIs. After that, the underlying service handles permission checking and the like.

> **See Also:** For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

42.2.4 Connections and Profile Resource Types

This section provides you with all the information you need to know about each resource type. It includes the following subsections:

- "urn:oracle:webcenter:people"
- "urn:oracle:webcenter:people:person"
- "urn:oracle:webcenter:people:person:list"
- "urn:oracle:webcenter:people:person:listNames"
- "urn:oracle:webcenter:people:person:listName"
- "urn:oracle:webcenter:people:person:list:member"
- "urn:oracle:webcenter:people:person:status"
- "urn:oracle:webcenter:people:invitations"
- "urn:oracle:webcenter:people:invitation"

urn:oracle:webcenter:people

The `people` response contains URIs for use in retrieving the profile of one or more users.

Navigation Paths to people

This section shows how the client can navigate through the hypermedia to access the `people` resource:

```
resourceIndex
   people
```

Supported Methods for people

The following method is supported by the `people` resource:

- GET
  - **request—Parameters:**
    - * `startIndex` – See "Common Request Query Parameters."
    - * `itemsPerPage` – See "Common Request Query Parameters."
    - * `projection` – See "Common Request Query Parameters."
    - * `data` – The data parameter is a comma separated list that controls which data will be returned in the response. The predefined set `basic` is equivalent to `data=guid,id,displayName`. The predefined set `data` is a standard set that returns all the data for the user, but does not include `status`, `manager`, `reportees`, or `photos`. The full list of possible values includes the predefined sets `basic` and `data`, as well as the following individual data values: `guid`, `id`, `displayName`, `birthday`, `language`, `timeZone`, `name`, `addresses`, `organizations`, `workEmail`, `phoneNumbers`, `manager`, `reportees`, `photos`, and `status`.

      If you specify the constant `'data'` as the `data` parameter, all the basic information will be returned for the resource. If both the `projection` and `data` query string parameters are present, the `data` parameter will be used to determine which data to return.

The data parameter can also take any of the following values comma-separated values to return the corresponding data: guid, id, displayName, birthday, language, timeZone, name, addresses, organizations, workEmail, phoneNumbers, manager, reportees, photos, and/or status.

> **Note:** The data parameter can accept a predefined set, a collection of values, or a mix of sets and values. For example, to get the basic data plus the user's birthday, you can specify data=basic,birthday.

- links – The links parameter is a comma-separated list that controls which links will be returned in the response. This parameter can accept predefined sets, individual data values, or a combination of predefined sets and individual data values. The predefined sets are basic, data, activitiesSet, connectionsSet, and feedbackSet. These predefined sets are described in "Predefined Sets for the links Parameter".

  The individual values for the links parameter are: person, profile, icon, status, messageBoard, activities, personActivities, connectionActivities, connections, listNames, invitation, givenFeedback, receivedFeedback, userGivenFeedback, manager, reportees, member.

  If both the projection and links query string parameters are present, the links parameter will be used to determine which links to return.

– **response—Body:** One or more person objects.

Predefined Sets for the links Parameter

The following items are predefined sets that can be returned in the links parameter. For example, if you specify links=basic, it is the equivalent of specifying data=person,profile,icon. You can also specify additional parameters as needed. For example, you could specify data=basic,birthday.

> **Note:** Links that are not currently available will not be returned even if they are specified in the links parameter.

- basic – A standard set that returns the basic information for the profile and includes person, profile, and icon.
- data – A standard set that returns all the basic links for the response plus the connections list, status, and activity stream template.
- activitiesSet – Includes activities, personActivities, and connectionActivities.
- connectionsSet – Includes connections, listNames, and invitation.
- feedbackSet – Includes givenFeedback, receivedFeedback, and userGivenFeedback.

Resource Types Linked to from people

Table 42–6 lists the resource types that the client can link to from the people resource.

Table 42–6 Related Resource Types for people

rel	resourceType
urn:oracle:webcenter:people:icon	urn:oracle:webcenter:people:person
urn:oracle:webcenter:people:person:list:connections	urn:oracle:webcenter:people:person:list
urn:oracle:webcenter:activities:stream:person	urn:oracle:webcenter:activities:stream
urn:oracle:webcenter:activities:stream:connections	urn:oracle:webcenter:activities:stream
urn:oracle:webcenter:activities:stream	urn:oracle:webcenter:activities:stream
urn:oracle:webcenter:feedback:all-received	urn:oracle:webcenter:feedback
urn:oracle:webcenter:feedback:all-given	urn:oracle:webcenter:feedback
self	urn:oracle:webcenter:people:person:status
urn:oracle:webcenter:people:person:list:list	urn:oracle:webcenter:people:person:list
self	urn:oracle:webcenter:people:person:listName
urn:oracle:webcenter:activities:stream:list	urn:oracle:webcenter:activities:stream

urn:oracle:webcenter:people:icon

Use this resource type to get the icon used for the named profile (`GET`).

Navigation Paths to people:icon

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   people
      icon
```

Supported Methods for icon

The following methods are supported by this resource:

- `GET` – Returns the icon used for the named profile.

> **Note:** This resource includes a template that lets you choose the size of the profile icon to use. The `size` template parameter can be set to `small`, `medium`, or `large`.

Resource Types Linked to from icon

Table 42–7 lists the resource types that the client can link to from this resource.

Table 42–7 Related Resource Types for urn:oracle:webcenter:people:icon

rel	resourceType
self	`urn:oracle:webcenter:people:icon`

Table 42–7 (Cont.) Related Resource Types for urn:oracle:webcenter:people:icon

rel	resourceType
urn:oracle:webcenter:parent	`urn:oracle:webcenter:people`

urn:oracle:webcenter:people:person

The `person` response contains profile data and the URIs for use in retrieving a user profile.

Navigation Paths to person

This section shows how the client can navigate through the hypermedia to access the `person` resource:

```
resourceIndex
   people

resourceIndex
   people
      person

resourceIndex
   person

author
   person

resourceIndex
   activities:stream
      person
```

Supported Methods for person

The following method is supported by the `person` resource:

- GET
  - **request—Parameters:** `q`

    To retrieve a specified person, the format of `q` is:

    ```
    q=[loginid:equals:username]
    Or
    q=[guid:equals:guid]
    Or
    q=[email:equals:email]
    ```

    Note: The parameter `q` is only on the `resourceIndex` template for `person`.

  - **response—Body:** `message`

    See Also: For information about the response `message`, see "Read-only Elements for person".

Read-only Elements for person

Table 42–8 lists the read-only elements for the `person` resource.

Note: The elements present in a person response depend on how the user repository is configured and the elements it supports. Additionally, several of the pieces of data represented in Table 42–8, such as address, emails, photos, phoneNumbers, and organization, can have multiple instances.

See Also: Some of the elements listed in Table 42–8 can be returned in predefined sets described in "Predefined Sets for the links Parameter".

Table 42–8 Read-Only Elements for person

Element	Type	Description
guid	String	Unique GUID of the person
id	String	Unique login ID of the person (that is, the user name, for example, pat_coi)
displayName	String	Display name of the person (the user's name, for example, Pat Coi). This may have the same value as id, depending on the repository configuration.
birthday	Date (String)[1]	Birth date of the person
connected	Boolean (String)1	Whether or not this person is connected to the current user
language	String	Preferred language of the person
timeZone	String	Time zone of the person
name	name	Name information for the person name is a portable contact type. For more information, see Section 53.10.2.1, "name Portable Contact Type."
address	address	Address information for the person address is a portable contact type. For more information, see Section 53.10.2.2, "address Portable Contact Type."
emails	value	Emails for the person emails is derived from the value portable contact type. For more information, see Section 53.10.2.4, "value Portable Contact Type."
photos	value	Profile photos for the person photos is derived from the value portable contact type. For more information, see Section 53.10.2.4, "value Portable Contact Type."
phoneNumbers	value	Phone numbers for the person phoneNumber is derived from the value portable contact type. For more information, see Section 53.10.2.4, "value Portable Contact Type."
organizations	organization	Organization information for the person organization is a portable contact type. For more information, see Section 53.10.2.3, "organization Portable Contact Type."
manager	personReference	Manager of this person
reportees	personReference	Direct reports of this person
status	urn:oracle:webcenter:people:person:status	Person's profile status message

[1] Data types, such as DATE and BOOLEAN, are stored in the API as STRING.

Resource Types Linked to from person

Table 42–9 lists the resource types that the client can link to from the `person` resource.

Table 42–9 Related Resource Types for person

rel	resourceType
self	urn:oracle:webcenter:people:person
alternate	urn:oracle:webcenter:spaces:profile (HTML)
urn:oracle:webcenter:people:person:list:connections	urn:oracle:webcenter:people:person:list urn:oracle:webcenter:people:person:listNames urn:oracle:webcenter:people:person:status
urn:oracle:webcenter:activities:stream:person	urn:oracle:webcenter:activities:stream
urn:oracle:webcenter:activities:stream:connections	urn:oracle:webcenter:activities:stream
urn:oracle:webcenter:activities:stream	urn:oracle:webcenter:activities:stream urn:oracle:webcenter:messageBoard
urn:oracle:webcenter:feedback:all-given	urn:oracle:webcenter:feedback
urn:oracle:webcenter:feedback:all-received	urn:oracle:webcenter:feedback

urn:oracle:webcenter:people:person:list

The `list` response contains URIs for use in retrieving all the profiles on a connections list (`GET`), inviting a user to be a connection or adding a connection to a connections list (`POST`), and removing a connections list (`DELETE`).

Navigation Paths to list

This section shows how the client can navigate through the hypermedia to access the `list` resource:

```
resourceIndex
   person
      listNames
         list

resourceIndex
   person
      list (rel="urn:oracle:webcenter:people:person:list:connections")
```

Supported Methods for list

The following methods are supported by the `list` resource:

- `GET`
  - **request—Parameters:** `startIndex`, `itemsPerPage`, `projection`

    See Also: For information about REST API parameters, such as `startIndex` and `itemsPerPage`, see "Common Request Query Parameters".

  - **response—Body:** 0 or more `person` items
- `POST`
  - **request—Body:** `member`
  - **response—Body:** `member`

See Also: For information about member in the request and response elements, see "urn:oracle:webcenter:people:person:list:member".

- DELETE
  - **request**

Resource Types Linked to from list

Table 42–10 lists the resource types that the client can link to from the list resource.

Table 42–10 Related Resource Types for list

rel	resourceType
self urn:oracle:webcenter:people:person:list[1]	urn:oracle:webcenter:people:person:list
urn:oracle:webcenter:activities:stream	urn:oracle:webcenter:activities:stream

[1] self rel currently includes "urn:oracle:webcenter:people:person:list:list" instead of the correct "urn:oracle:webcenter:people:person:list". For the @connections default list, it currently includes "urn:oracle:webcenter:people:person:list:connections".

urn:oracle:webcenter:people:person:listNames

The listNames response contains the names of existing connections lists as well as the URIs for use in retrieving the lists (GET) and creating connections lists (POST).

Navigation Paths to listNames

This section shows how the client can navigate through the hypermedia to access the listNames resource:

```
resourceIndex
   person
      listNames
```

Supported Methods for listNames

The following methods are supported by the listNames resource:

- GET
  - **request**
  - **response**: **Body:** 0 or more listName items
- POST
  - **request—Body:** listName
  - **response—Body:** listName

See Also: For information about listName, see "urn:oracle:webcenter:people:person:listName".

Resource Types Linked to from listNames

Table 42–11 lists the resource types that the client can link to from the listNames resource.

Table 42–11 Related Resource Types for listNames

rel	resourceType
self	urn:oracle:webcenter:people:person:listNames

urn:oracle:webcenter:people:person:listName

The `listName` response contains the names of connections lists and URIs for use in accessing the connections lists. See also "urn:oracle:webcenter:people:person:listNames".

Navigation Paths to listName

This section shows how the client can navigate through the hypermedia to access the `listName` resource:

```
resourceIndex
   person
      listNames
         listName
```

Supported Methods for listName

The following method is supported by the `listName` resource:

- `DELETE`
  - **request**

Writable Elements for listName

Table 42–12 lists the writable elements for the `listName` resource.

Table 42–12 Writable Elements for listName

Element	Type	Required	Constraints	Description
`name`	String	Yes	1 or more characters	A single list name

Resource Types Linked to from listName

Table 42–13 lists the resource types that the client can link to from the `listName` resource.

Table 42–13 Related Resource Types for listName

rel	resourceType
self urn:oracle:webcenter:people:person:list	urn:oracle:webcenter:people:person:list
urn:oracle:webcenter:activities:stream:list	urn:oracle:webcenter:activities:stream

urn:oracle:webcenter:people:person:list:member

The `member` response contains URIs for use in deleting a connection from a connections list.

Navigation Paths to member

This section shows how the client can navigate through the hypermedia to access the `member` resource:

```
resourceIndex
   person
      list
         member
```

Supported Methods for member

The following method is supported by the `member` resource:

- DELETE
  - **request**

Writable Elements for member

Table 42–14 lists the writable elements for the `member` resource. Writable elements for `member` are used when you add a connection to a list or invite a user to be a connection. The `member` resource itself is for deleting connections, and does not use writable elements.

Table 42–14 Writable Elements for member

Element	Type	Required	Constraints	Description
`guid`	String	Yes	1 or more characters	GUID of the user
`message`	String	No	0 or more characters	Invitation message Use this only when inviting users to be connections (that is POSTing to the `@connections` list, not to user-created connections lists).

urn:oracle:webcenter:people:person:status

The `status` response contains URIs for use in retrieving (`GET`) and updating (`PUT`) the profile status message of a specified user.

Navigation Paths to status

This section shows how the client can navigate through the hypermedia to access the `status` resource:

```
resourceIndex
   people
      person
         status
```

Supported Methods for status

The following methods are supported by the `status` resource:

- GET
  - **request**
  - **response—Body:** `status`
- PUT
  - **request—Body:** `status`
  - **response—Body:** `status`

Writable Elements for status

Table 42–15 lists the writable elements for the `status` resource.

Table 42–15 Writable Elements for status

Element	Type	Required	Constraints	Description
`note`	String	Yes	1 or more characters	Content of status message

Resource Types Linked to from status

Table 42–16 lists the resource types that the client can link to from the `status` resource.

Table 42–16 Related Resource Types for status

rel	resourceType
self	urn:oracle:webcenter:people:person:status

urn:oracle:webcenter:people:invitations

The `invitations` response contains URIs for use in retrieving invitations (`GET`). You can also send an invitation (`POST`) to another user.

Navigation Paths to invitations

This section shows how the client can navigate through the hypermedia to access the `invitations` resource:

```
resourceIndex
   invitations
```

If you are not already connected to a user, you can also navigate to the invitations resource from that user's profile in order to invite them to connect. This path is only used for POSTing.

```
resourceIndex
   person
      invitations
```

Supported Methods for invitations

The following methods are supported by the `invitations` resource:

- `GET`
  - **Request—Parameters:** `q`

    To retrieve invitations sent to the current user, the format of `q` is:

    ```
    q=[invitee:equals:@me]
    ```

    To retrieve invitations sent from the current user, the format of `q` is:

    ```
    q=[invitor:equals:@me]
    ```

  - **Response—Body:** 1 or more invitations
- `POST`
  - **Request—Body:** `invitation`
  - **Response—Body:** `invitation`

Writable Elements for invitations

Table 42–17 lists the writable elements for the `invitations` resource.

Table 42–17 Writable Elements for invitations

Element	Type	Required	Constraints	Description
`message`	String	No	1 or more characters	Message attached to the invitation

Resource Types Linked to from invitations

Table 42–18 lists the resource types that the client can link to from the `invitations` resource:

Table 42–18 Related Resource Types for invitations

rel	resourceType
self	urn:oracle:webcenter:people:invitation

urn:oracle:webcenter:people:invitation

The `invitation` response contains URIs for use in deleting (`DELETE`) invitations you have sent, or deleting (`DELETE`) or updating (`PUT`) invitations you have received.

Navigation Paths to invitation

This section shows how the client can navigate through the hypermedia to access the `invitation` resource:

```
resourceIndex
   invitations
      invitation
```

Supported Methods for invitation

The following methods are supported by the `invitation` resource:

- `PUT`
  - **Request—Body:** `invitation`
  - **Response—Body:** `invitation`
- `DELETE`
  - **Request**

Writable Elements for invitation

Table 42–19 lists the writable elements for the `invitation` resource.

Table 42–19 Writable Elements for invitation

Element	Type	Required	Constraints	Description
`status`	String	Yes (PUT)	ACCEPTED IGNORED	The status of the invitation. **Note:** When you accept or ignore an invitation, it is removed from your list of invitations.

Read-only Elements for invitation

Table 42–20 lists the read-only elements for the `invitation` resource.

Table 42–20 Read-only Elements for invitation

Element	Type	Description
`id`	String	Unique ID of the invitation
`invitee`	personReference	User to whom the invitation is sent
`invitor`	personReference	User from whom the invitation is sent

Table 42–20 (Cont.) Read-only Elements for invitation

Element	Type	Description
`sentDate`	Date (String)[1]	Date the invitation was sent

[1] Data types, such as `DATE` and `BOOLEAN`, are stored in the API as `STRING`.

Resource Types Linked to from invitation

Table 42–21 lists the resource types that the client can link to from the `invitation` response.

Table 42–21 Related Resource Types for invitations

rel	resourceType
self	urn:oracle:webcenter:people:invitation

42.3 Feedback REST API

Use the Feedback REST API to read and delete feedback. This section provides information about the REST API methods to use to perform these actions.

This section includes the following subsections:

- Section 42.3.1, "Feedback Entry Point"
- Section 42.3.2, "Feedback Resource Type Taxonomy"
- Section 42.3.3, "Feedback Security Considerations"
- Section 42.3.4, "Feedback Resource Types"

42.3.1 Feedback Entry Point

Each REST service has a link element within the Resource Index that provides the entry point for that service. For People Connections, each feature has its own `link` element. To find the entry points for the People Connections' Feedback feature, find the `link` elements with a `resourceType` of:

```
urn:oracle:webcenter:feedback
```

The corresponding `href` or `template` element provides the URI entry point, which returns all received feedback for the current user. The client sends HTTP requests to this entry point to work with the People Connections' Feedback feature.

> **See Also:** For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index."
>
> For more information about resource types, see Section 53.5.2.1, "Resource Type."

42.3.2 Feedback Resource Type Taxonomy

When the client has identified the entry point, it can then navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 42.3.4, "Feedback Resource Types."

The resource type taxonomy for the People Connections' Feedback feature is:

```
urn:oracle:webcenter:feedback
   urn:oracle:webcenter:feedback:message
```

42.3.3 Feedback Security Considerations

You must be logged into the REST service to access any of the People Connections REST APIs. After that, the underlying service handles permission checking and the like.

> **See Also:** For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

42.3.4 Feedback Resource Types

This section provides you with all the information you need to know about each resource type. It includes the following subsections:

- "urn:oracle:webcenter:feedback"
- "urn:oracle:webcenter:feedback:message"

urn:oracle:webcenter:feedback

The `feedback` response contains URIs for use in reading Feedback messages.

Navigation Paths to feedback

This section shows how the client can navigate through the hypermedia to access the `feedback` resource:

```
resourceIndex
   feedback

resourceIndex
   person
      feedback
```

Supported Methods for feedback

The following methods are supported by the `feedback` resource:

- `GET`
  - **request—Parameters:** `startIndex`, `itemsPerPage`

    > **See Also:** For information about REST API parameters, such as `startIndex` and `itemsPerPage`, see "Common Request Query Parameters".

  - **response—Body:** `message`

    > **See Also:** For information about `message`, see "urn:oracle:webcenter:feedback:message".

- `POST` – If permitted, lets you add feedback for a target user. This method is only available if the current user is connected to and has permission to add feedback for the target user.
  - **request - body**: feedback

```
<message resourceType="urn:oracle:webcenter:feedback:message">
    <body>test from REST API</body>
    <receivedUser>
    <guid>4F16DD80393611DFBF895F177662C511</guid>
    </receivedUser>
```

```
</message>
```

Resource Types Linked to from feedback

Table 42–22 lists the resource types that the client can link to from the `feedback` resource.

Table 42–22 Related Resource Types for feedback

rel	resourceType
self urn:oracle:webcenter:feedback:all-received	urn:oracle:webcenter:feedback
self urn:oracle:webcenter:feedback:all-given	urn:oracle:webcenter:feedback
	urn:oracle:webcenter:feedback:message

urn:oracle:webcenter:feedback:message

The `message` response contains the feedback message data and URIs for use in deleting a Feedback message.

Navigation Paths to message

This section shows how the client can navigate through the hypermedia to access the `message` resource:

```
resourceIndex
   feedback
      message

resourceIndex
   person
      feedback
         message
```

Supported Methods from message

The following method is supported by the `message` resource:

- `DELETE`
  - **request**

Read-only Elements for message

Table 42–23 lists the read-only elements for the `message` resource.

Table 42–23 Read-only Elements for message

Element	Type	Description
`body`	String	Message content
`id`	String	Unique ID of the message
`author`	personReference	User who created the message
`created`	Date (String)[1]	Date the message was created
receivedUser	**personReference**	A person reference to the user who received the feedback

[1] Data types, such as `DATE` and `BOOLEAN`, are stored in the API as `STRING`.

Resource Types Linked to from feedback

Table 42–24 lists the resource types that the client can link to from the `feedback` resource.

Table 42–24 Related Resource Types for message

rel	resourceType
self	urn:oracle:webcenter:feedback:message

42.4 Message Board REST API

Use the Message Board REST API to post, read, and delete messages to a user's or a portal message board. This section provides information about the REST API methods to use to perform these actions.

This section includes the following subsections:

- Section 42.4.1, "Message Board Entry Point"
- Section 42.4.2, "Message Board Resource Type Taxonomy"
- Section 42.4.3, "Message Board Security Considerations"
- Section 42.4.4, "Message Board Resource Types"
- Section 42.4.5, "Filtering Messages Based on Visibility"

42.4.1 Message Board Entry Point

Each REST service has a `link` element within the Resource Index that provides the entry point for that service. For People Connections, each feature has its own `link` element. To find the entry points for the People Connections' Message Board feature, find the `link` elements with a `resourceType` of:

```
urn:oracle:webcenter:messageBoard
```

Note: As well as an entry point from the Resource Index, to navigate to an individual user's message board, the Message Board feature also has an entry point from a portal response for the portal message board.

The corresponding `href` or `template` element provides the URI entry point, which returns the Message Board for the current user. The client sends HTTP requests to this entry point to work with People Connections' Message Board feature.

See Also: For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index."

For more information about resource types, see Section 53.5.2.1, "Resource Type."

42.4.2 Message Board Resource Type Taxonomy

When the client has identified the entry point, it can then navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 42.4.4, "Message Board Resource Types."

The resource type taxonomy for the Message Board feature for People Connections is:

```
urn:oracle:webcenter:messageBoard
   urn:oracle:webcenter:messageBoard:message
```

42.4.3 Message Board Security Considerations

You must be logged into the REST service to access any of the People Connections REST APIs. After that, the underlying service handles permission checking and the like.

> **See Also:** For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

42.4.4 Message Board Resource Types

This section provides you with all the information you need to know about each resource type. It includes the following subsections:

- "urn:oracle:webcenter:messageBoard"
- "urn:oracle:webcenter:messageBoard:message"

urn:oracle:webcenter:messageBoard

The `messageBoard` response contains URIs for use in reading (`GET`) and posting (`POST`) portal and individual user Message Board messages.

Navigation Paths to messageBoard

This section shows how the client can navigate through the hypermedia to access the `messageBoard` resource:

```
resourceIndex
   messageBoard

resourceIndex
   person
      messageBoard

resourceIndex
   spaces
      space
         messageBoard
```

Supported Methods for messageBoard

The following methods are supported by the `messageBoard` resource:

- GET
  - **request—Parameters:** `startIndex`, `itemsPerPage`

    > **See Also:** For information about REST API parameters, such as `startIndex` and `itemsPerPage`, see "Common Request Query Parameters".

  - **response—Body:** message

Note: The REST GET command for reading (retrieving) messages retrieves all shown messages by default. You can also retrieve messages that are private or hidden through the application user interface as described in Section 42.4.5, "Filtering Messages Based on Visibility." For information about hiding and showing messages, see the "Adding Messages and Feedback to a Portal" chapter in *Building Portals with Oracle WebCenter Portal*.

- POST
  - **request—Body:** message

    The POST for messages supports including a link URL in the message.

    See Also: For information about message, see "urn:oracle:webcenter:messageBoard:message".

Read-only Elements for messageBoard

Table 42–25 lists the read-only elements for the messageBoard resource.

Table 42–25 Read-only Elements for message

Element	Type	Description
messageType	String	Returns link if the message has a link. Otherwise, returns null.
link	String	Contains link data for messages with links: name, url, icon, description, mimeType, objectId, objectType, serviceId.

Resource Types Linked to from messageBoard

Table 42–26 lists the resource types that the client can link to from the messageBoard resource.

Table 42–26 Related Resource Types for messageBoard

rel	resourceType
self	urn:oracle:webcenter:messageBoard
	urn:oracle:webcenter:messageBoard:message

urn:oracle:webcenter:messageBoard:message

The message response contains the Message Board message data and URIs for use in reading (GET), revising (PUT), and deleting (DELETE) a portal or individual user Message Board message.

Navigation Paths to message

This section shows how the client can navigate through the hypermedia to access the message resource:

```
resourceIndex
   messageBoard
      message

resourceIndex
   person
```

```
        messageBoard
          message

resourceIndex
  spaces
    space
      messageBoard
        message
```

Supported Methods for message

The following methods are supported by the `message` resource:

- `GET`
  - **request**
  - **response—Body:** `message`
- `PUT`
  - **request—Body:** `message`
  - **response—Body:** `message`
- `DELETE`
  - **request**

Writable Elements for message

Table 42–27 lists the writable elements for the `message` resource.

Table 42–27 Writable Elements for message

Element	Type	Required	Constraints	Description
`body`	String	Yes	1 or more characters	message content

Read-only Elements for message

Table 42–28 lists the read-only elements for the `message` resource.

Table 42–28 Read-only Elements for message

Element	Type	Description
`id`	String	Unique ID of the message
`author`	personReference	User who created the message
`created`	Date (String)[1]	Date the message was created

[1] Data types, such as `DATE` and `BOOLEAN`, are stored in the API as `STRING`.

Resource Types Linked to from message

Table 42–29 lists the resource types that the client can link to from the `message` resource.

Table 42–29 Related Resource Types for message

rel	resourceType
self	urn:oracle:webcenter:messageBoard:message

42.4.5 Filtering Messages Based on Visibility

Although the REST `GET` command for retrieving messages retrieves all shown messages by default, you can also retrieve messages that are private or hidden through the application user interface using a set of visibility filters.

Messages posted on message boards can have the following visibility criteria:

- Public
- Private
- Hidden
- Public and hidden
- Private and hidden

By default, messages are public.

Private Messages:

A person owning a message board can mark any message as private. When a message is marked as private, that message will not be visible to anyone other than the owner of the message unless the owner chooses to send a private message to someone else. Otherwise, other people viewing a message board with private messages will see only public messages.

Hidden Messages:

A person owning a message board can mark any message as hidden. When a message is marked as hidden, that message will not be visible to the owner of the message board, but will remain visible to other people viewing the message board.

REST URLs for Message Boards:

The context for message board URL filters is:

```
rest/api/messageBoards/<BOARD-TYPE>/<GUID>/<FILTER-TYPE>
```

Where:

- `<BOARD-TYPE>` is either `person` or `space`
- `<GUID >` is either `@me`, the `person <GUID>` (if `<BOARD-TYPE>` is person) or the `space <GUID>` (if `<BOARD-TYPE>` is `portal`)
- `<FILTER-TYPE>` is applicable only for the `person <BOARD-TYPE>` and can be one of:
  - `null` - (default) shows all messages
  - `private` - shows private messages
  - `public` - shows public messages
  - `hidden` - shows hidden and public messages
  - `private_hidden` - shows private and hidden messages

Available filters in the context of the applicable HTML methods are shown below.

`GET`

- `@me`
  - all
    `rest/api/messageBoards/person/@me`

  - private
    `rest/api/messageBoards/person/@me/private`
  - public
    `rest/api/messageBoards/person/@me/public`
  - hidden and public
    `rest/api/messageBoards/person/@me/hidden`
  - private and hidden
    `rest/api/messageBoards/person/@me/private_hidden`

- `person`

  `rest/api/messageBoards/person/<GUID>`

  If the GUID matches that of the logged in user then the same filtering as for @me applies. If the GUID is different, then no filtering is available.

- `space`

  `rest/api/messageBoards/space/<GUID>`

  No filtering based on visibility is available.

POST

- `@me`
  - all
    rest/api/messageBoards/person/@me
  - private

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "private"}
    ```

  - public

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "public"}
    ```

  - hidden and public

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "hidden"}
    ```

  - private and hidden

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "private_hidden"}
    ```

- `person`
  `rest/api/messageBoards/person/<GUID>`

  If the GUID is the same as the logged in user, then the filters for GET apply. If the users are different, then the following filters apply:

  - public

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "public"}
    ```

  - private

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "private"}
    ```

- `space`

  `rest/api/messageBoards/space/<GUID>`

  No filtering based on visibility is available.

`PUT`

- `@me`
  - all
    est/api/messageBoards/person/@me/messages/<msg guid>
  - private

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "private"}
    ```

  - public

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "public"}
    ```

  - hidden and public

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "hidden"}
    ```

  - private and hidden

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "private_hidden"}
    ```
- `person`
  `rest/api/messageBoards/person/<GUID>/messages/<msg guid>`

  If the GUID is the same as the logged in user, then the filters for GET apply. If the users are different, then the following filters apply:

  - public

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "public"}
    ```

  - private

    ```
    {"body" : "<BODY_CONTENT>",
     "visibilityType" : "private"}
    ```

- `space`

  `rest/api/messageBoards/space/<GUID>/messages/<msg guid>`

  No filtering based on visibility is available.

42.5 Creating an Invitation

This section illustrates how to invite another user to join your connections list using the People Connections Service REST API. After the invitation is made, the invitee is given the option to accept or not. This example also illustrates how to delete an invitation.

This section includes the following subsections:

- Section 42.5.1, "Creating an Invitation"

- Section 42.5.2, "Accepting an Invitation"
- Section 42.5.3, "Deleting an Invitation"

42.5.1 Creating an Invitation

1. The first step, as always with REST API methods, is to retrieve the resource index:

   ```
   GET http://<host:port>/rest/api/resourceIndex
   ```

2. Next, find the person to whom you want to connect. To do this:

   a. In the resource index listing, scan for the link with the following resource type:

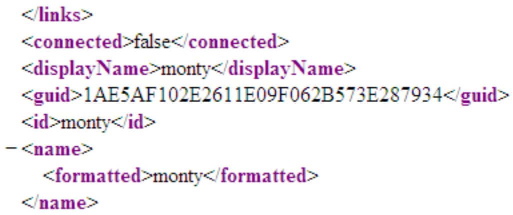
      ```
      urn:oracle:webcenter:people:person
      ```

   b. Execute a search for the user who you wish to invite. In this example, the user is named Monty.

      ```
      GET http://<host:port>/rest/api/people?q=loginid:equals:monty&utoken=ASDF
      ```

   c. Locate Monty's GUID in the response, as shown in Figure 42–1.

Figure 42–1 Response With User's GUID



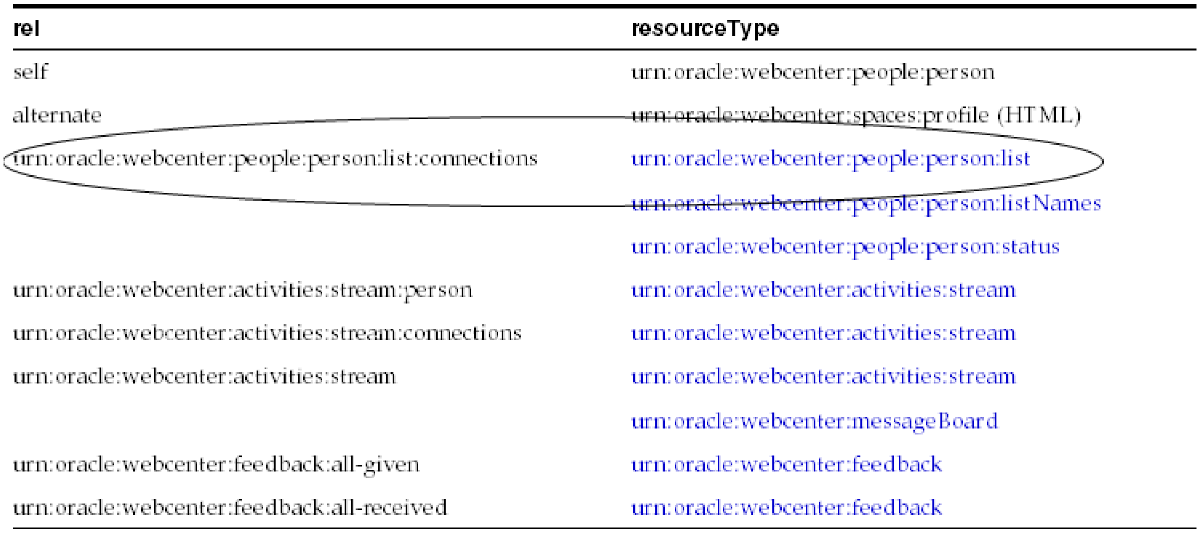
```
  </links>
  <connected>false</connected>
  <displayName>monty</displayName>
  <guid>1AE5AF102E2611E09F062B573E287934</guid>
  <id>monty</id>
- <name>
    <formatted>monty</formatted>
  </name>
```

   d. Save the GUID so that you can use it to connect to the user.

3. Now that you have the invitee's GUID, you must find the resource to which you would like to add him. In this case, you want to add him to your own `connections` list.

   To find your `connections` list, first, scan the People Connections documentation (this chapter) for "`connections`." You will discover in Table 42–9, " Related Resource Types for person" that `connections` are linked to from the `person` resource. For convenience, this table is shown in Figure 42–2.

Figure 42–2 Finding the connections Link



rel	resourceType
self	urn:oracle:webcenter:people:person
alternate	urn:oracle:webcenter:spaces:profile (HTML)
urn:oracle:webcenter:people:person:list:connections	urn:oracle:webcenter:people:person:list
	urn:oracle:webcenter:people:person:listNames
	urn:oracle:webcenter:people:person:status
urn:oracle:webcenter:activities:stream:person	urn:oracle:webcenter:activities:stream
urn:oracle:webcenter:activities:stream:connections	urn:oracle:webcenter:activities:stream
urn:oracle:webcenter:activities:stream	urn:oracle:webcenter:activities:stream
	urn:oracle:webcenter:messageBoard
urn:oracle:webcenter:feedback:all-given	urn:oracle:webcenter:feedback
urn:oracle:webcenter:feedback:all-received	urn:oracle:webcenter:feedback

Now that you know that `connections` are linked to from the `person` resource, you need to find the `person` resource. As the URN indicates, you get to the `person` resource from the `people` resource, as described in the following steps.

4. Return to the resource index (or use a cached version of the `resourceIndex` from your previous visit):

```
GET http://<host:port>/rest/api/resourceIndex
```

5. Scan for the `people` resource, and you will find:

```
urn:oracle:webcenter:people
```

6. Use the link in the `people` resource to access *your* lists:

```
GET http://<host:port>/rest/api/people/@me/lists/@self?utoken=ASDF
```

7. Scan the returned links for the `resourceType` and `rel` listed in Table 42–9:

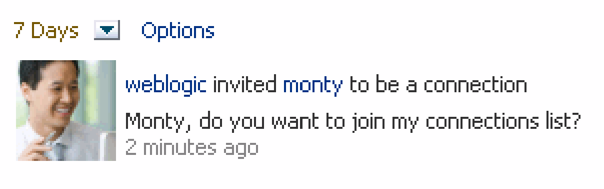
```
resourceType="urn:oracle:webcenter:people:person:list
rel="urn:oracle:webcenter:people:person:list:connections
```

8. Make the invitation by using the URI to your `connections` list to execute a `POST`:

```
POST http://<host:port>/rest/api/people/@me/lists/@connections?utoken=ASDF

Headers --  Accept:application/json, Content-Type:application/json
Body -- {"message":"Monty, do you want to join my connections
list?","guid":"1AE5AF102E2611E09F062B573E287934"}
```

9. Now, if you log in to Monty's account and you can see the invitation has been added, as shown in Figure 42–3.

Figure 42–3 Activity Stream Showing Invitation



7 Days ▾ Options

weblogic invited monty to be a connection

Monty, do you want to join my connections list?

2 minutes ago

42.5.2 Accepting an Invitation

After an invitation has been sent, the next step is for the invitee (Monty) to accept the invitation.

1. Using a second REST client, retrieve the resource index:

```
GET http://<host:port>/rest/api/resourceIndex
```

2. Login as Monty.

3. List all the invitations sent to Monty by making the following request:

```
GET
http://<host:port>/rest/api/people/invitations?q=invitee:equals:@me&utoken=ASDF
```

Each invitation element listed in the response contains a link that supports the UPDATE operation and that looks something like this:

```
<links>
<link capabilities="urn:oracle:webcenter:delete urn:oracle:webcenter:update"
href="http://<host:port>/rest/api/people/invitations/<invitationid>?utoken=ASDF
"
rel="self" resourceType="urn:oracle:webcenter:people:invitation"/>
</links>
<id><invitationid></id>
```

4. To accept the invitation, make the following request:

```
PUT http://<host:port>/rest/api/people/invitations/<invitationid>?utoken=ASDF

Headers
  Accept -> application/xml
  Content-Type -> application/xml

Body
  <invitation>
      <id><invitationid></id>
      <status>accepted</status>
  </invitation>
```

42.5.3 Deleting an Invitation

After you initiate an invitation, you can view the invitation from your account by specifying `invitor:equals:@me`. For example:

```
GET
http://<host:port>/rest/api/people/invitations?q=invitor:equals:@me&utoken=ASDF
```

Each invitation element listed in the response contains a link that supports the DELETE operation and that looks something like this:

```
<links>
```

```
<link resourceType="urn:oracle:webcenter:people:invitation"
rel="self"
href="http://host_name:port_name/rest/api/people/invitations/
     e9073cdb-56ab-423d-8b1f-1220c802bdd4?
     utoken="FN0SEFwX42OCntwtx9a1dSbhqocO_w**"
     capabilities="urn:oracle:webcenter:delete"/>
</links>
```

The invitee can also delete an invitation from his or her own account. The invitee can get a list of his or her invitations by specifying:

```
GET
http://<host:port>/rest/api/people/invitations?q=invitee:equals:@me&utoken=ASDF
```

Note that the response from a DELETE is simply a status code of 204.

Part VII

Helping Users Find Content

Part VII contains the following chapters:

43 Integrating Links

This chapter explains how to integrate links functionality in a Portal Framework application at design time.

This chapter includes the following topics:

- Section 43.1, "Introduction to Links"
- Section 43.2, "Basic Configuration for Links"
- Section 43.3, "Advanced Information for Links"

For more information about managing and including links, see:

- the "Setting up Database Connections" chapter in *Administering Oracle WebCenter Portal*
- the "Working with the Links Component" chapter in *Building Portals with Oracle WebCenter Portal*
- the "Linking Information in WebCenter Portal" chapter in *Using Oracle WebCenter Portal*

43.1 Introduction to Links

This section provides overview information about links functionality and requirements. It includes the following subsections:

- Section 43.1.1, "Understanding Links"
- Section 43.1.2, "Requirements for Links"
- Section 43.1.3, "What Happens at Runtime"

43.1.1 Understanding Links

Links provides a way to view, access, and associate related information. For example, in a list of project assignments, you can link to the specifications relevant to each assignment. In a discussion thread about a problem with a particular task, you can link to a document that provides a detailed description of how to perform that task.

Links provides a means for the application developer to set up source objects (for example, the discussions tool) and target objects (for example, a document), thus enabling your users to create links between the two objects.

There are three actions associated with links: create, delete, and manage. The manage action includes the create and delete actions.

The following custom JSF components are included with links:

- **Links Detail Button**: This displays an icon and (optionally) a hyperlink that users click to open the Links Panel. To use the Links Detail Button, you must also include the Links - Dialog task flow as a region on the page.
- **Links Detail Menu Item**: This adds a menu item that opens the Links Panel. You can embed this item in an ADF menu. To use the Links Detail Menu Item, you must also include the Links - Dialog task flow as a region on the page.
- **Links Status Icon**: This has two versions:

  The gray **Links** icon (Figure 43–1) indicates that no links are present in the Links dialog.

Figure 43–1 The Links Icon (No Links Present)

The gold **Links** icon (Figure 43–2) indicates that links are present in the Links dialog.

Figure 43–2 The Links Icon (Links Present)

You can link **from** the following objects:

- Announcements
- Discussions
- Documents
- Events
- Lists
- Pages
- Any object that has a custom JSF component (such as the Links Detail button) bound to it

You can link **to** the following **new** objects:

- Discussions
- Documents
- Events
- Notes
- URLs

You can link **to** the following **existing** objects:

- Announcements
- Discussions
- Documents
- Events

Note: Lists and Notes are only available in portals, not in Framework applications.

Links are *not* available for the other WebCenter Portal components and tools, such as Mail and People Connections.

Links supports bidirectional links between objects. For example, when you create a link from a discussion topic to a document, a link from the document back to the discussion topic also is created. Similarly, when you *delete* the link from the discussion topic to a document, the link from the document back to the discussion topic is automatically deleted. Bidirectional linking is not available for URLs, notes, and specific list rows.

43.1.2 Requirements for Links

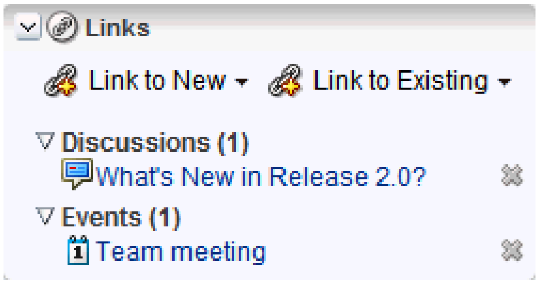
Links automatically recognize any WebCenter Portal tool or component in your application. After you have configured a tool or service in your application, you can add links. However, links work only on secured pages. Links icons do not appear on unsecured pages. For more information, see Section 43.2.3, "Setting Security for the Links."

43.1.3 What Happens at Runtime

Linking provides an easy way for you to share information with your social network. Linking can help you realize a significant reduction of wasted time and effort normally spent looking for information.

Links exposes its features through a Links dialog (Figure 43–3), accessible wherever the **Links** icon (Figure 43–1) appears in your application.

Figure 43–3 Links Dialog



With links, you can do the following:

- Link an object (such as a page) to an existing object (such as a discussion topic) by clicking the **Link** icon, selecting **Link to Existing**, choosing the resource **Discussions**. Optionally, you can choose a specific forum and click the topic title to choose a link.
- Link an object (such as a discussion topic) to a new object (such as a new note or URL) by clicking the **Link** icon for discussion topic, selecting **Link to New**, and choosing either **Note** or **URL**.
- Create multiple links from one object.
- Delete a link.

For more information about links at runtime, see the "Linking Information in WebCenter Portal" chapter in *Using Oracle WebCenter Portal*.

43.2 Basic Configuration for Links

This section describes the steps required for adding links functionality to your application. It includes the following subsections:

- Section 43.2.1, "Setting up Connections for Links"
- Section 43.2.2, "Adding Links Functionality at Design Time"
- Section 43.2.3, "Setting Security for the Links"
- Section 43.2.4, "Troubleshooting Links"

43.2.1 Setting up Connections for Links

Links require a connection to the database where the WebCenter Portal schema is installed. The link map (that is, relationship information such as what object is linked to what other object) is stored in the database.

For details about setting up a database connection, see Section 4.2.2, "Setting Up a Database Connection."

43.2.2 Adding Links Functionality at Design Time

This section explains a basic incorporation of links functionality. It includes the following subsections:

- Section 43.2.2.1, "Links Task Flows."
- Section 43.2.2.2, "How to Add Links Functionality to your Application."

43.2.2.1 Links Task Flows

WebCenter Portal includes the Links Dialog task flow.

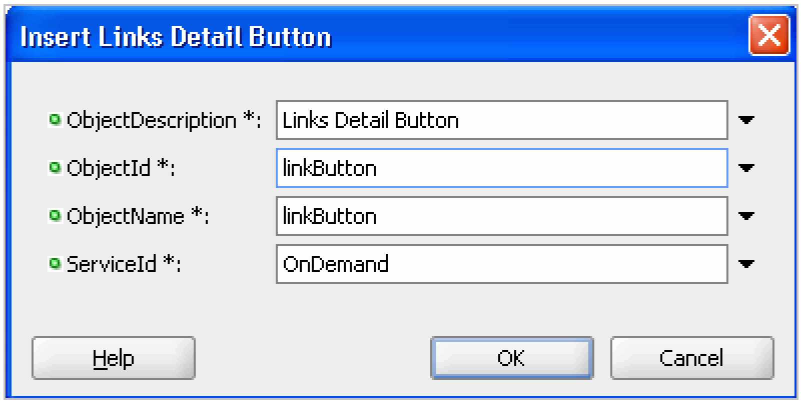
43.2.2.2 How to Add Links Functionality to your Application

To add the Links Dialog task flow to your Framework application:

1. Follow the steps described in Chapter 2, "Setting Up Your Development Environment" to create a customizable page in your application.
2. Ensure that you have set up the database connection to a database with the WebCenter Portal schema installed (Section 43.2.1).
3. Open the page on which you want to add links functionality.
4. In the Component Palette, click **WebCenter Portal - Links**.
5. Drag and drop the **Links Detail Button** component onto your page inside the `panelGroupLayout`.

   The button is placed inside of a `panelGroupLayout` for the purposes of this example only. It is not required that you always place the button inside a `panelGroupLayout`.
6. In the Insert Links Detail Button dialog (Figure 43–4), enter a unique object description, ID, and name.

Figure 43–4 Insert Links Detail Button Wizard



Insert Links Detail Button

ObjectDescription *: Links Detail Button

ObjectId *: linkButton

ObjectName *: linkButton

ServiceId *: OnDemand

The properties in this dialog include:

- **objectDescription**: The description of the object to which you are binding the Links Detail Button
- **objectId**: A unique ID that identifies the object to which you are binding the Links Detail Button
- **objectName**: The name of the object to which you are binding the Links Detail Button
- **serviceId**: An application-wide ID that identifies your application

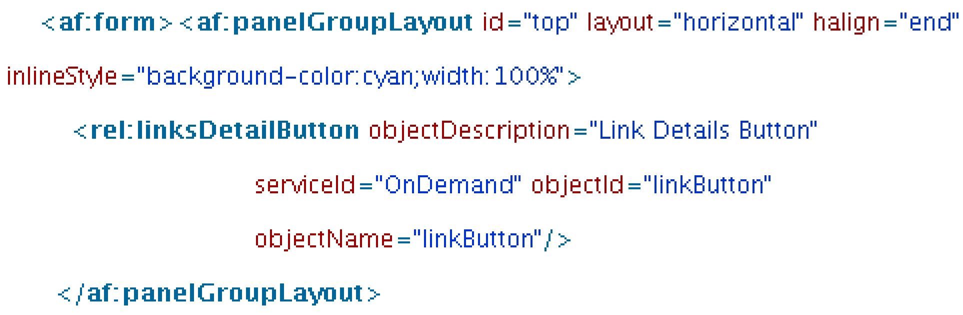
7. In the **ServiceId** field, enter `OnDemand`.

> **Note:** The `serviceId` and `objectId` are combined to uniquely identify the object to which you bind the Links Detail Button.

8. Click **OK**.

   The new button displays in your page source (Figure 43–5).

Figure 43–5 The Link Detail Button in Your Page Source



```
  <af:form> <af:panelGroupLayout id="top" layout="horizontal" halign="end"
inlineStyle="background-color:cyan;width:100%">
    <rel:linksDetailButton objectDescription="Link Details Button"
                 serviceId="OnDemand" objectId="linkButton"
                 objectName="linkButton"/>
   </af:panelGroupLayout>
```

9. In the Resource Palette, open **My Catalogs**, then open the **Task Flows** folder.
10. Drag and drop the **Links Dialog** task flow next to the Link Detail button on your page, and select **Region** from the context menu.
11. Save and run your page to the browser.

43.2.3 Setting Security for the Links

Links functionality requires secured pages. Links icons do not appear on unsecured pages.

ADF security is configured by default if you created your application using WebCenter Portal's Framework application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."

43.2.4 Troubleshooting Links

This section describes common problems and solutions for links.

Problem

The **Links** icon does not appear.

Solution

Links functionality requires a database connection to the WebCenter Portal schema, where links information is stored. Make sure that you have created the connection to the database and made it available in the Application Resources panel of the Application Navigator. If the connection is available in the Resource Palette but not in Application Resources, then simply drag the connection from the Resource Palette to the Connections folder in Application Resources.

Problem

Existing links appear, but you are not able to create new links or delete existing links.

Solution

The `RelationshipPermission` permission is automatically granted to administrators when Links components are consumed. Grant other users this permission through the ADF Security Policy Editor. For more information, see Section 74.3.1, "Configuring ADF Security Settings."

43.3 Advanced Information for Links

This section describes optional features available with links. It includes the following subsection:

- Section 43.3.1, "Using the Links REST API"

43.3.1 Using the Links REST API

WebCenter Portal provides a REST API to support links. Use the links REST API to post links between two objects. For example, you could create a link between an event and a document in a space.

This section describes the REST API methods associated with links. It includes the following subsections:

- Section 43.3.1.1, "Links Entry Point"
- Section 43.3.1.2, "Links Resource Type Taxonomy"
- Section 43.3.1.3, "Security Considerations"
- Section 43.3.1.4, "Links Resource Types"

For an introduction to REST APIs, see Chapter 53, "Using Oracle WebCenter Portal REST APIs."

43.3.1.1 Links Entry Point

Each REST service has a link element within the resource index that provides the entry point for that service. To find the entry point for links, find the link element with a `resourceType` of:

```
urn:oracle:webcenter:links
```

The corresponding `href` or `template` element provides the URI entry point. The client sends HTTP requests to this entry point to work with links.

For more information about the resource index, see Section 53.5.1, "Using the Resource Index."

For more information about resource types, see Section 53.5.2.1, "Resource Type."

43.3.1.2 Links Resource Type Taxonomy

When the client has identified the entry point, it then can navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 53.5.2.1, "Resource Type."

The taxonomy for links is:

```
urn:oracle:webcenter:links
   urn:oracle:webcenter:links:results
```

Beyond the service entry points, URL templates allow clients to pass query parameters to customize their requests and control the form of returned data.

43.3.1.3 Security Considerations

Authentication is required before using Links REST API methods.

For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

43.3.1.4 Links Resource Types

This section provides information about each resource type. It includes the following subsection:

- Section 43.3.1.4.1, "urn:oracle:webcenter:links:results"

43.3.1.4.1 urn:oracle:webcenter:links:results Use this resource type to identify the URI to use to create (`POST`) a link between two objects

The request is represented by the URL, and the response is a link, each with metadata to help the end user choose an item to drill down and cross links to the owning REST services, if available. If the owning REST service is unavailable, then an HREF link is provided.

Navigation Paths to results

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   links
```

```
      results

resourceindex
   spaces
      spaces:resourceindex
         spaces:links
            results
```

Supported Methods for results

The following method is supported by this resource:

- POST
  - **request - body:** a source and a target object, each of which has a `serviceId`, `resourceId`, and `resourceName`; if the target is a URL link, then the target object also contains a `resourceUrl`, **Parameters**: `serviceId`, `resourceId`, `resourceName`
  - **response - body:** Status of "204 No Content" if successful, or "403 Forbidden" if the user has no permission to create a link

where:

- `serviceId={serviceId}`

  Optional: The service ID of the item, such as `services.oracle.webcenter.collab.calendar.community`

- `resourceId={resourceId}`

  The resource ID, such as `s833cddc4_caa5_416c_87e9_d702ef870b43;;3b0c6edb`

- `resourceName={resourceName}`

  The resource name, such as `New Event`.

For more information, see Section 53.5.2.5, "Templates."

Resource Types Linked to From results

Table 43–1 lists the resource types that the client can link to from this resource.

Table 43–1 Related Resource Types for links

rel	resourceType
self	urn:oracle:webcenter:links:results

44

Integrating Tags

This chapter describes how to integrate tags in a WebCenter Portal Framework application at design time.

This chapter includes the following topics:

- Section 44.1, "Introduction to Tags"
- Section 44.2, "Basic Configuration for Tags"
- Section 44.3, "Advanced Information for Tags"

For more information about managing and including tags, see the "Using Tags and Bookmarks" chapter in *Using Oracle WebCenter Portal*

> **See Also:** You must register a resource viewer to enable custom resources to be rendered using search or tags, or to make the resources linkable to and from each other. For more information, see Section 4.3, "Customizing How Services Render Resources."

44.1 Introduction to Tags

Tags enable users to apply their own meaningful terms to items, making those items more easily discoverable in search results and the Tag Center. The Tag Center is a page that displays the interactions among all the tags, tagged items, and their taggers in an application.

Having multiple users tag objects contributes to the collective knowledge, which makes searching much more relevant. WebCenter Portal search takes advantage of the knowledge captured by tagging by indicating the relevance of results based on the quality and frequency of their applied tags.

Tags let the *users* of data (instead of the *publishers* of data) classify information. In this way, tags act as a personal productivity tool and a method to increase searchability for everyone.

For example, suppose your application includes a component that provides a view of departmental human resources contacts. If you enable tags for this component, then a user who comes to it can bookmark it for themselves and assign tags like HR or contacts or department to help others find it as well.

Tags can be put on pages, documents, and custom objects. Creating a tag automatically publishes the event to the activity stream.

44.1.1 Understanding Tags

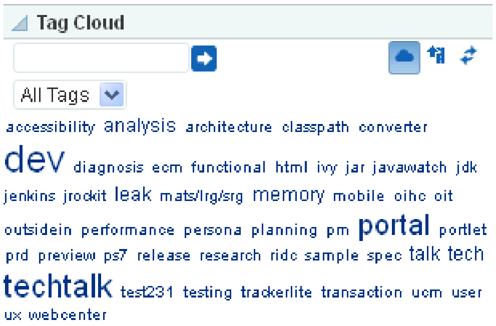
You can apply one or more meaningful terms, called *tags*, to remind yourself and alert other users of the content they might expect to find at the tagged location. Anywhere you see the **Tags** icon (Figure 44–1), you can apply a tag.

Figure 44–1 The Tags Icon

Tags let you apply your own classifications to items. For example, you could apply the tag `phone` to a product page that provides useful information about new phones. When you or other users search for phone, the tagged page displays in the search results.

When you access the Tag Center, you see all users who applied the same tag anywhere else in the application. Within the Tag Center, a tag cloud (Figure 44–2) displays all currently applied tags.

Figure 44–2 A Tag Cloud



Tag Cloud

All Tags

accessibility analysis architecture classpath converter dev diagnosis ecm functional html ivy jar javawatch jdk jenkins jrockit leak mats/lrg/srg memory mobile oihc oit outsidein performance persona planning pm portal portlet prd preview ps7 release research ridc sample spec talk tech techtalk test231 testing trackerlite transaction ucm user ux webcenter

A tag cloud is a visual depiction of all tags. Tags are presented according to the frequency of their use—the larger the font, the more the tag has been applied to items. Click a tag in the tag cloud to run a search that returns a list of all items that use the tag.

44.1.2 Requirements for Tags

Tags requires that you set up the WebCenter Portal schema and create a database connection to the schema. Tag information is stored in the database. For details, see Section 4.2.2, "Setting Up a Database Connection."

> **Note:** Typically, when you add tags in a Framework application, you also should add a search toolbar to enable searching for the objects with the tags. To add the search toolbar, follow the instructions in Section 45.2.3, "Adding Search at Design Time."

Tags requires security. If users are not authenticated, then they cannot tag objects. If the application is not secured, then pages are not returned in search results for tagged items.

To enable the ability to tag *documents*, you must have the Document Manager task flow in the Framework application. For more information, see Chapter 28, "Integrating Documents."

44.1.3 What Happens at Runtime

At runtime, when you search for a tag word, results are returned in the Tagged Items section of the search results. By default, tagged items that are accessed through their tags are rendered in a full screen replacing the same window.You can override this and have it open in a popup window.

You can tag custom components, find those tags either through a search or in the Tag Center, and access tagged items through their associated tags.

For tools and services exposing resources to be tagged (and therefore searched and viewed) WebCenter Portal provides a Resource Action Handling framework. Tags use this framework to allow acting on a search result. For more information, see Section 4.3, "Customizing How Services Render Resources."

For more information about tags at runtime, see the "Using Tags and Bookmarks" chapter in *Using Oracle WebCenter Portal*.

44.2 Basic Configuration for Tags

This section describes required steps for adding tags to your application. It includes the following topics:

- Section 44.2.1, "Setting up Connections for Tags"
- Section 44.2.2, "Adding Tags Functionality at Design Time"
- Section 44.2.3, "Setting Security for Tags"

44.2.1 Setting up Connections for Tags

Tags require a connection to the database with the WebCenter Portal schema installed.

For details about setting up a database connection, see Section 4.2.2, "Setting Up a Database Connection."

44.2.2 Adding Tags Functionality at Design Time

To enable basic tagging, you must add either the **Tagging Button** component or the **Tagging Menu Item** component and the Tagging - Dialog task flow. In addition, to tag *custom* objects, you must register a resource viewer to visualize the tagged component when it is discovered by users.

This section describes how to enable tagging by adding the **Tagging Button** and the Tagging - Dialog task flow. It includes the following topics:

- Section 44.2.2.1, "Tags Components"
- Section 44.2.2.2, "Tags Task Flows"
- Section 44.2.2.3, "How to Add Tags Functionality to your Page"
- Section 44.2.2.4, "How to Modify Tags Task Flow Parameters"

44.2.2.1 Tags Components

The following JSF components are available:

- **Tagging Button**: When you add a Tagging Button, a Tags link on the page enables you to invoke the Tag This Item (or Tag This Page) dialog at runtime.
- **Tagging Menu Item**: When you add a Tagging Menu Item, a menu option on the page enables you to invoke the Tag This Item (or Tag This Page) dialog at runtime.

In the Component Palette, drag and drop components to the page. In the resulting dialog box, you can configure attributes in the Tags components. For example, the `SharedParam` attribute lets you disable the **Shared** checkbox. (With the `default` value, the checkbox is enabled, so users can check it or uncheck it at will. With the `always` value, the checkbox is disabled in the true state, so all tags are public. With the `never` value, the checkbox is disabled in the false state, so all tags are private.) As another example, the `ResourceScope` attribute lets users tag objects in a different scope, such as a list of search results with the Tagging button next to each result, where the search is done in the default scope but the results could be in other scopes. For more information about the component attributes, see the online help.

44.2.2.2 Tags Task Flows

Table 44–1 lists the tags task flows.

Table 44–1 Tags Task Flows

Task Flow	Definition
Tagging - Dialog	This task flow displays a dialog that appears to tag a particular object. This does not have any visible user interface rendering when dropped onto a page. It only becomes visible when the tagging button is clicked.
Tagging - Personal View	This task flow shows the tags created by the current user, objects tagged by those tags, and a cloud view of the tags. A service ID input parameter enables you to view tagged items of interest. Because this is a non-public task flow, it requires authentication.
Tagging - Related Links	For an object identified by a unique ID, this task flow lists all the other objects that are tagged with similar tags. The other objects listed include those that are similarly tagged; that is, their tag "sets" have an intersection of at least one. The list is ordered by the number of tags in the intersection.
Tagging - Tag Cloud	This task flow displays a tag cloud, which is a visual depiction of all the tags used. Tags are presented according to the frequency of their use. More frequently used tags display in bold fonts and varying font sizes—the larger the font, the more the tag has been applied. When you click a tag in the tag cloud, you are redirected to Tag Center, where that tag is selected. This task flow appears on a page with tagged items. It provides links for all tags in the page.
Tagging - Tag Selection	Similar to the Tag Cloud task flow, the Tag Selection task flow also displays a tag cloud. However, when you select a tag, it marks the tag as selected, and you see the results in the Related Resources task flow. You are not redirected to the Tag Center. With this task flow and the Tagging - Tagged Items task flow, you can click a tag in the tag cloud to see the items that use the tag. (In other words, selecting a tag in the Tagging - Tag Cloud task flow sends the tag word as an event to all interested event consumers, such as the Tagging - Tagged Items task flow.)
Tagging - Tagged Items	This task flow displays items pages, or documents that have been tagged. It can refine itself to show only the items tagged with the tag passed to it. This task flow can listen for events sent by the Tagging - Tag Cloud task flow.

See Also: Section 44.2.2.4, "How to Modify Tags Task Flow Parameters"

44.2.2.3 How to Add Tags Functionality to your Page

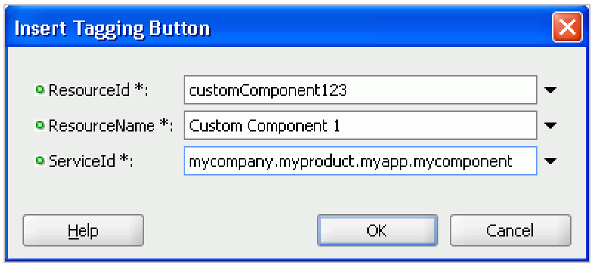
To add the tags functionality to your WebCenter Portal Framework application:

1. Follow the steps described in Chapter 2, "Setting Up Your Development Environment" to create a customizable page in your application.
2. Ensure that you have set up a database connection to a database with the WebCenter Portal schema installed.
3. Open the page where you included the search toolbar.
4. On the Component Palette (All Pages), select the **Tagging Button** and drop it on the page, inside a `PanelGroupLayout`. Make it the first child of the `PanelGroupLayout` by placing it to the left of the search toolbar. The Tagging Button enables users to start tagging.
5. Fill out the Insert Tagging Button dialog. Table 44–2 provides descriptions and example values for the fields in the dialog.

Table 44–2 Fields in the Insert Tagging Button Dialog

Field	Description
`ResourceId`	The ID that uniquely identifies the object to which you are binding the Tagging Button. The value in this field need not be static. For example, you could use EL to insert a unique value for each row in a table. For example: - To tag pages, enter `#{facesContext.viewRoot.viewId}` - To tag custom components, enter `customComponent123`
`ResourceName`	The name of the object to which you are binding the Tagging Button. The value in this field need not be static. For example, you could use EL to insert a unique value for each row in a table. - To tag pages, enter `#{facesContext.viewRoot.viewId}` - To tag custom components, enter `Custom Component 1`
`ServiceId`	An application-wide ID. (With custom components, you add this to `service-definition.xml` when adding the resource viewer.) - To tag pages, enter `oracle.webcenter.page` - To tag custom components, enter `mycompany.myproduct.myapp.mycomponent`

Figure 44–3 Insert Tagging Button Dialog for a Custom Component



Insert Tagging Button

ResourceId *: customComponent123

ResourceName *: Custom Component 1

ServiceId *: mycompany.myproduct.myapp.mycomponent

6. Click **OK**.

Note: The Tagging Button includes additional properties you can set. For example, `SharedParam` lets you disable the **Shared** checkbox. (With the `default` value, the checkbox is enabled, so users can check it or uncheck it at will. With the `always` value, the checkbox is disabled in the true state, so all tags are public. With the `never` value, the checkbox is disabled in the false state, so all tags are private.)

---

7. From the Resource Palette, expand **WebCenter Portal - Services Catalog** and **Task Flows**.
8. Drag and drop **Tagging Dialog** from the Resource Palette on the page, optionally adding a redirection URL for anonymous page login.
9. When prompted, select **Region** as the way to create the task flow.
10. For custom resources, follow the steps described in Section 4.3, "Customizing How Services Render Resources" to register a resource viewer. For tools and services exposing resources to be tagged (and therefore searched and viewed) WebCenter Portal provides a Resource Action Handling framework. Tags use this framework to allow acting on a search result.

In the Source view where you added tags, you should see something similar to Example 44–1.

Example 44–1 Tagging Button and Tagging - Dialog Task Flow Source

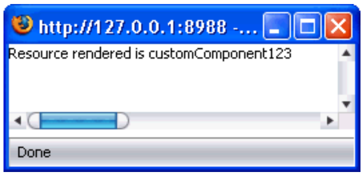
```
<af:form id="f1">
        <af:region value="#{bindings.searchtoolbar1.regionModel}" id="r1"/>
        <tag:taggingButton resourceId="#{facesContext.viewRoot.viewId}"
                           serviceId="oracle.webcenter.page"
                           resourceName="#{facesContext.viewRoot.viewId}"
                           id="tb1"/>
        <af:region value="#{bindings.tagginglaunchdialog1.regionModel}"
                   id="r2"/>
      </af:form>
```

Note: Even if there are multiple Tagging Buttons on the page, only one Tagging Dialog `af:region` is needed.

Run the page with the **Tagging Button** and Tagging - Dialog task flow. When the page renders in the browser, click the **Tags** link.

1. When the dialog appears, enter the tag `home` and click **Save**. Note that every user of the system can perform this same operation and assign the same tag, which means that you get a weighted collection of tags.
2. In the search toolbar, type the search term `home`, and click the **Search** icon.
3. You should see `home` as a search result under Tags and `Custom Component 1` as a search result under Tagged Items.
4. Click `Custom Component 1` and a dialog appears with the resource viewer you just created (Figure 44–4).

Figure 44–4 Resource Viewer



Resource rendered is customComponent123

44.2.2.4 How to Modify Tags Task Flow Parameters

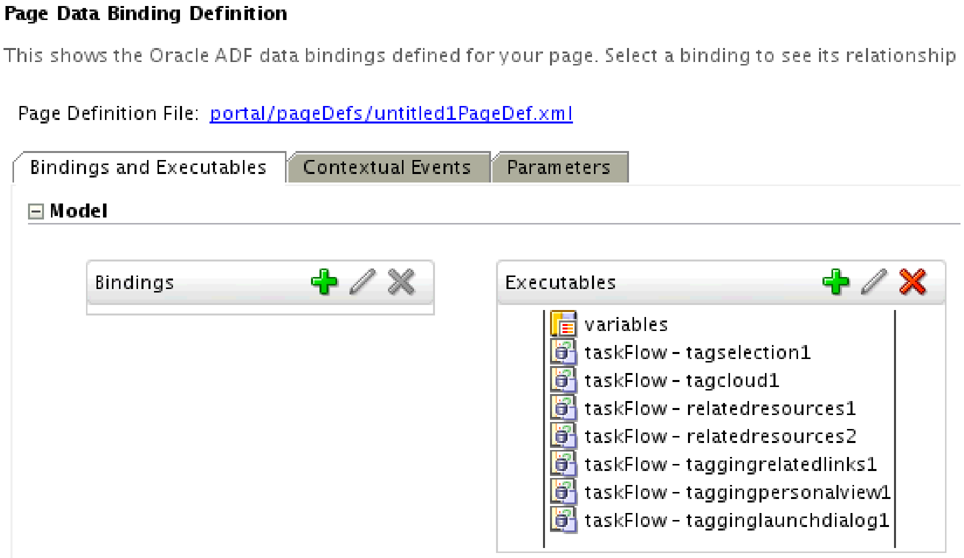
Some tags task flows have optional task flow binding parameters.

> **Note:** You should not change tags task flow properties unless you want to show items from a different resource or different service.

To see and adjust task flow binding parameter values after you have placed a task flow on a page:

1. Navigate to the Edit Task Flow Binding dialog by clicking the **Bindings** tab at the bottom of the page (next to the **Source** tab).
2. Under **Executables**, you'll see the task flow you added. Figure 44–5 shows an example of Tags task flows in the Executables section.

Figure 44–5 Page Data Binding Definition



Page Data Binding Definition

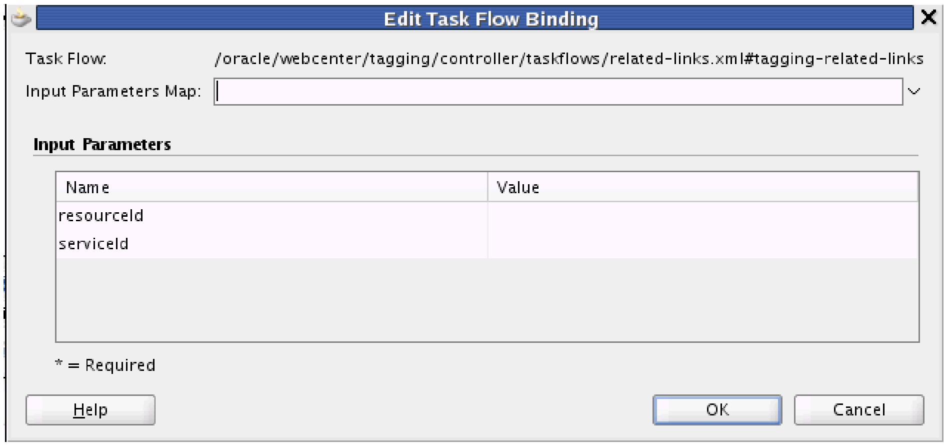
This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relationship

Page Definition File: portal/pageDefs/untitled1PageDef.xml

variables
taskFlow - tagselection1
taskFlow - tagcloud1
taskFlow - relatedresources1
taskFlow - relatedresources2
taskFlow - taggingrelatedlinks1
taskFlow - taggingpersonalview1
taskFlow - tagginglaunchdialog1

3. Select the task flow, and next to the Executables heading, click the **Edit selected element** (pencil) icon.
4. In the Edit Task Flow Binding dialog Figure 44–6, revise the binding parameter values as required.

Figure 44–6 Edit Task Flow Binding Dialog for Tags - Related Links Task Flow



Task Flow: /oracle/webcenter/tagging/controller/taskflows/related-links.xml#tagging-related-links

Input Parameters Map:

Input Parameters

Name	Value
resourceId	
serviceId	

* = Required

5. When you are finished, click **OK.**
6. Save and run your page to see the results.

Table 44–3 describes the properties that are unique to tags task flows.

Table 44–3 Tags Task Flow Parameters

Property	Description	Task Flow
`resourceId`	Unique ID of the item or resource within a given tool/service that is used to find similarly tagged items. This value is set automatically. Do not change this value unless you want to show items similar to a different resource.	Tagging - Related Links
`serviceId`	This parameter has a different meaning for the Related Links task flow and the Personal View task flow. ■ In Related Links, it is a `resourceId/serviceId` pair that defines the item that has related links. This value is set automatically. Do not change this value unless you want to show items similar to a different resource belonging to a different tool/service. ■ In Personal View, it limits the tags to this tool/service; for example, `oracle.webcenter.page`.	Tagging - Related Links Tagging - Personal View
`resourceScope`	Scope of tags. This value is set automatically (either `#{spaceContext.currentSpaceGUID}` or something like `s8bba98ff_4cbb_40b8_beee_296c916a23ed`). Do not change this value.	Tagging - Tag Cloud Tagging - Tag Selection Tagging - Tagged Items
`redirectURL`	Optional redirection URL for anonymous page login. This must include the `/faces` prefix; for example, `/faces#{facesContext.viewRoot.viewId}` If null or empty, then no login is displayed.	Tagging - Dialog

44.2.3 Setting Security for Tags

Tags require security. If users are not authenticated, then they cannot tag objects. If the application is not secured, then pages are not returned in search results for tagged items.

ADF security is configured by default if you created your application using WebCenter Portal's Framework application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."

Note: You must register a resource viewer to allow custom objects to be found using search or tags. For information about how the resource viewer's `authorizerClass` determines whether users can view the resource, see Section 4.3, "Customizing How Services Render Resources."

44.3 Advanced Information for Tags

This section describes optional features available with tags. It includes the following topics:

- Section 44.3.1, "Using the Tags Java APIs"
- Section 44.3.2, "Using the Tags REST APIs"
- Section 44.3.3, "Optional Way to Show Tags on Pages"
- Section 44.3.4, "Using the Resource Action Handling Framework to Tag Custom Objects"
- Section 44.3.5, "Troubleshooting Tags"

Note: You can turn up logging levels for the tagging component (as you can with other components) in the `logging.xml` file, found under the WLS home.

44.3.1 Using the Tags Java APIs

Custom components can implement the tags APIs to create a tagging backend compatible with the WebCenter Portal REST APIs or tags task flows and components.

For more information on the Java APIs, see *Java API Reference for Oracle WebCenter Portal*.

44.3.2 Using the Tags REST APIs

WebCenter Portal provides REST APIs to support tags. Use the tags REST APIs to do the following:

- Find all tags or find a subset of tags by criteria
- Get a specific tag
- Delete tags
- Update or rename tags
- Get tagged items
- Untag an item
- Add a new tagged item
- Change tags for a tagged item
- Find all tagged items or find tagged items by a filter, such as a date or a tag word
- Get related users by tag

This section describes the REST APIs associated with tags. It includes the following topics:

- Section 44.3.2.1, "Tags Entry Point"
- Section 44.3.2.2, "Tags Resource Type Taxonomy"
- Section 44.3.2.3, "Security Considerations"
- Section 44.3.2.4, "Tags Resource Types"

For an introduction to the REST APIs, see Section 53, "Using Oracle WebCenter Portal REST APIs."

44.3.2.1 Tags Entry Point

Each REST service has a link element within the Resource Index that provides the entry point for that service. To find the entry point for tags, find the link element with a `resourceType` of one of the following:

- `urn:oracle:webcenter:tagging:tags`
- `urn:oracle:webcenter:tagging:taggeditems`
- `urn:oracle:webcenter:tagging:users`

The corresponding `href` or `template` element provides the URI entry point. The client sends HTTP requests to this entry point to work with tags.

For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index."

For more information about resource types, see Section 53.5.2.1, "Resource Type."

44.3.2.2 Tags Resource Type Taxonomy

When the client has identified the entry point, it then can navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 53.5.2.1, "Resource Type."

The taxonomy for tags is:

```
urn:oracle:webcenter:tagging:tags
   urn:oracle:webcenter:tagging:tag
urn:oracle:webcenter:tagging:taggedItems
   urn:oracle:webcenter:tagging:taggedItem
urn:oracle:webcenter:tagging:users
```

Under users, you can add the resource type for that object, such as `peopleprofile`.

Beyond the service entry points, URL templates allow clients to pass query parameters to customize their requests and control the form of returned data.

Collection resources in the tags resources support pagination (`itemsPerPage` and `startIndex` for tags and users and `itemsPerPage` for taggedItems). Other query parameters (`search` and `projection`) are not supported.

44.3.2.3 Security Considerations

Authentication is required before using REST API methods.

For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

44.3.2.4 Tags Resource Types

This section provides information about each resource type. It includes the following topics:

- Section 44.3.2.4.1, "urn:oracle:webcenter:tagging:tags"
- Section 44.3.2.4.2, "urn:oracle:webcenter:tagging:tag"
- Section 44.3.2.4.3, "urn:oracle:webcenter:tagging:taggedItems"
- Section 44.3.2.4.4, "urn:oracle:webcenter:tagging:taggedItem"
- Section 44.3.2.4.5, "urn:oracle:webcenter:tagging:users"

44.3.2.4.1 urn:oracle:webcenter:tagging:tags Use this resource type to identify the URI to use to read (`GET`) tags. The response from a `GET` operation includes all tags, a specific tag, a subset of tags, or a tag related to a specific list of tags or users.

Navigation Paths to tags

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   tags

resourceindex
   spaces
      spaces:resourceindex
         spaces:tags
```

Supported Methods for tags

The following methods are supported by this resource:

- `GET`
  - **request - body:** none, **Parameters**: `startIndex`, `itemsPerPage`, `keyword`, `serviceId`, `relatedTag`, `userId`, `scopeGuid`, `shared`, `tags`, `users`
  - **response - body:** tag

  where:

  - `startIndex`—Specifies the index of the first matching result that should be included in the result set (0-*n* ... zero based). This is used for pagination.
  - `itemsPerPage`—Specifies the maximum number of results to return in the response (1-*n*). This is used for pagination.
  - `keyword`—Specifies a keyword for substring matches.
  - `serviceId`—Specifies the service ID for which you want to find tags (null for all).
  - `relatedTag`—Specifies a tag that is related to the list of tags. For example, if you have tagged item1 as "webcenter help" and item2 as "webcenter document" and you set `relatedTag=webcenter`, then you would get both tags (for help and document) returned.
  - `userId`—Specifies a single user ID to find tags for (null for all). Uses logged-in user if null and not looking for shared tags.
  - `scopeGuid`—Specifies the GUID of the portal. When set to the Home portal, it shows all (unfiltered) tags.

- `shared`—Specify `true` to return personal resources only (that is, resources tagged privately only by that same user); `false` to return system resources (that is, resources with at least one public tag).
- `tags`—Specifies to filter by this list of tags separated by URL-encoded spaces ('+'); for example, an item tagged with "webcenter" and "help" could be searched with `tags=webcenter+help`.
- `users`—Specifies to filter by this list of users separated by URL-encoded spaces ('+'); for example, `users=monty+vicki+pat`.

Note: Parameters can be used in certain combinations only.

Table 44–4 shows the available parameter combinations for each operation. For example, the `tags` parameter cannot be specified with the `serviceId` parameter.

Table 44–4 Parameter Combinations Available for Getting Tags

API Method	keyword	serviceId	relatedTag	userId	scopeGuid	shared	tags	users
findRelatedSystemTags			X		X		X	X
findPopularTagsCommon	X	X		X		X		
findPopularTags (with GUID)	X			X	X	X		
findPopularTags	X			X		X		

Resource Types Linked to From tags

The resourceType link attribute indicates the type of resource to which the link points. Clients should use the resourceType to determine the expected response bodies for `GET` and `POST` and allowable request bodies for `POST` and `PUT`.

Table 44–5 lists the resource types that the client can link to from this resource. Tags have a reference link to themselves and to the next page or previous page of results.

Table 44–5 Related Resource Types for tags

rel	resourceType
self	urn:oracle:webcenter:tagging:tags
Previous/Next	urn:oracle:webcenter:tagging:tags

44.3.2.4.2 urn:oracle:webcenter:tagging:tag Use this resource type to identify the URI to use to read (`GET`), rename (`PUT`), and delete (`DELETE`) a tag. The response from a `GET` operation includes all tags, a specific tag, a subset of tags, or a tag related to a specific list of tags or users.

Navigation Paths to tag

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   tags
      tag

resourceindex
   spaces
      spaces:resourceindex
```

```
        spaces:tags
           spaces:tag
```

Supported Methods for tag

The following methods are supported by this resource:

- GET
  - **request - body:** none, **Parameters**: none
  - **response - body:** tag
- PUT
  - **request - body:** tag
  - **response - body:** tag
- DELETE
  - **request - body:** none
  - **response - body:** none

Example 44–2 Body of the PUT command for Renaming a Tag

```
<tag>
<name>newId</name>
</tag>
```

Resource Types Linked to From tag

The resourceType link attribute indicates the type of resource to which the link points. Clients should use the resourceType to determine the expected response bodies for GET and POST and allowable request bodies for POST and PUT.

Table 44–6 lists the resource types that the client can link to from this resource. A tag has a reference link to itself, to related taggedItems, to related users, and to related tags.

Table 44–6 Related Resource Types for tag

rel	resourceType
self	urn:oracle:webcenter:tagging:tag
	urn:oracle:webcenter:tagging:taggedItems
	urn:oracle:webcenter:tagging:users
	urn:oracle:webcenter:tagging:tags

44.3.2.4.3 urn:oracle:webcenter:tagging:taggedItems Use this resource type to identify the URI to use to read tagged items and their related resources (GET) or to add tagged items (POST).

The response from a GET operation includes a tagged item or all tagged items, which can be filtered by date, tag words, and so on. Each tag includes links used to operate on that tag. The response from a POST operation includes the tagged items that were created in this collection of tags and a link to operate on them.

Navigation Paths to taggedItems

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   taggedItems

resourceindex
   spaces
      spaces:resourceindex
         spaces:taggedItems
```

Supported Methods for taggedtems

The following methods are supported by this resource:

- POST
  - **request - body:** taggedItem
  - **response - body:** taggedItem

  ```
  <taggeditem>
     <serviceId>oracle.webcenter.page</serviceId>

  <resourceId>/oracle/webcenter/page/somepath/someotherpath/a.jspx</resourceId>
     <tagWords>foo bar boo far</tagWords>
     <resourceTitle>This is renamed by me to be foofoo</resourceTitle>
     <scopeGuid>(optional) scope for the item</scopeGuid>
     <shared>(optional) make the item private </shared>
   </taggeditem>
  ```

- GET
  - **request - body:** none, **Parameters**: serviceId, keyword, relatedRID, tags, users, dt, scopeGuid, shared, itemsPerPage
  - **response - body:** tagged items

  where:

  - serviceId—Specifies the service ID of the item.
  - keyword—Specifies a keyword in the resource title.
  - relatedRID—Specifies a related tag. For example, if you tagged item1 as "webcenter help" and item2 as "fusionapps documents" and item3 as "webcenter documents" and set relatedRID=item3, then you would get back item1 and item2, because they share tags in common with item3.
  - tags—Specifies to filter by this list of tags separated by URL-encoded spaces ('+'); for example, an item tagged with "webcenter" and "help" could be searched with tags=webcenter+help.
  - users—Specifies to filter by these users, separated by URL-encoded spaces ('+'); for example, {USER}+{USER}+...+{USER}.
  - dt—Specifies to filter bookmarks by this date, which defaults to the most recent date on which bookmarks were saved {DD-MM-CCYY}.
  - scopeGuid—Specifies the GUID of the portal. When set to the Home portal, it shows all (unfiltered) tags.
  - shared—Specify true to return personal resources only (that is, resources tagged privately only by that same user); false to return system resources (that is, resources with at least one public tag).
  - itemsPerPage—Specifies the maximum number of results to return in the response (1-*n*). This is used for pagination.

Note: Parameters can be used in certain combinations only.

Table 44–7 shows the available parameter combinations for each operation. For example, the `tags` parameter cannot be specified with the `serviceId` parameter.

Table 44–7 Parameter Combinations Available for Getting Tagged Items

API Method	serviceId	keyword	relatedRID	tags	users	dt	scopeGuid	shared
findRelatedSystemResources	X		X					
findUpdatedResources						X	X	
findSystemResources				X	X		X	X
findFilterPersonalResources	X	X					X	
findPersonalResources				X	X		X	X
findFilteredPersonalResources (no keyword)	X						X	

Resource Types Linked to From taggedItems

The resourceType link attribute indicates the type of resource to which the link points. Clients should use the resourceType to determine the expected response bodies for `GET` and `POST` and allowable request bodies for `POST` and `PUT`.

Table 44–8 lists the resource types that the client can link to from this resource. Tagged items have a reference link to themselves and to the next page or previous page of results.

Table 44–8 Related Resource Types for taggedItems

rel	resourceType
self	urn:oracle:webcenter:tagging:taggedItems
Previous/Next	urn:oracle:webcenter:tagging:taggedItems

44.3.2.4.4 urn:oracle:webcenter:tagging:taggedItem Use this resource type to identify the URI to use to read tagged items and their related resources (`GET`), add tagged items (`POST`), update tags for a tagged item (`PUT`), and remove all tags from an item (`DELETE`).

The response from a `GET` operation includes a tagged item or all tagged items, which can be filtered by date, tag words, and so on. Each tag includes links used to operate on that tag. The response from a `POST` operation includes the tagged item that was created in this collection of tags and a link to operate on that tagged item.

Navigation Paths to taggedItem

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   taggedItems
      taggedItem

resourceindex
   spaces
      spaces:resourceindex
         spaces:taggedItems
            spaces:taggedItem
```

Supported Methods for taggedItem

The following methods are supported by this resource:

- GET
  - **request - body:** none, **Parameters**: serviceId, keyword, tags, users, dt, shared, itemsPerPage
  - **response - body:** tagged item

  where:

  - serviceId—Specifies the service ID of the item.
  - keyword—Specifies a keyword in the resource title.
  - tags—Specifies to filter by this list of tags separated by URL-encoded spaces ('+'); for example, an item tagged with "webcenter" and "help" could be searched with tags=webcenter+help.
  - users—Specifies to filter by this list of users separated by URL-encoded spaces ('+'); for example, users=monty+vicki+pat.
  - dt—Specifies to filter bookmarks by this date, which defaults to the most recent date on which bookmarks were saved {DD-MM-CCYY}.
  - shared—Specify true to return personal resources only (that is, resources tagged privately only by that same user); false to return system resources (that is, resources with at least one public tag).
  - itemsPerPage—Specifies the maximum number of results to return in the response (1-*n*). This is used for pagination.
- PUT
  - **request - body:** taggedItem
  - **response - body:** taggedItem

  ```
  <taggeditem>
  <tagWords>foo bar boo far</tagWords>
  </taggeditem>
  ```
- DELETE
  - **request - body:** none
  - **response - body:** none

Resource Types Linked to From taggedItem

The resourceType link attribute indicates the type of resource to which the link points. Clients should use the resourceType to determine the expected response bodies for GET and POST and allowable request bodies for POST and PUT.

Table 44–9 lists the resource types that the client can link to from this resource. A tagged item has a reference link to itself, related tagged items, and an external link.

Table 44–9 Related Resource Types for taggedItem

rel	resourceType
self	urn:oracle:webcenter:tagging:taggedItem
	urn:oracle:webcenter:tagging:taggedItems

Table 44–9 (Cont.) Related Resource Types for taggedItem

rel	resourceType
alternate	The resource type depends on the type of resource tagged; for example, a page would be urn:oracle:webcenter:page:page

44.3.2.4.5 urn:oracle:webcenter:tagging:users Use this resource type to get a list of people related to a given list of tags.

Navigation Paths to users

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   taggingusers

resourceindex
   spaces
      spaces:resourceindex
         spaces:taggingusers
```

Supported Methods for users

The following methods are supported by this resource:

- `GET`
  - **request - body:** none, **Parameters**: `startIndex`, `itemsPerPage`, `tags`, `users`
  - **response - body:** people profile

  where:

  - `startIndex`—Specifies the index of the first matching result that should be included in the result set (0-*n* ... zero based). This is used for pagination.
  - `itemsPerPage`—Specifies the maximum number of results to return in the response (1-*n*). This is used for pagination.
  - `tags`—Specifies to filter by this list of tags separated by URL-encoded spaces ('+'); for example, an item tagged with "webcenter" and "help" could be searched with `tags=webcenter+help`.
  - `users`—Specifies to filter by this list of users separated by URL-encoded spaces ('+'); for example, `users=monty+vicki+pat`.

Resource Types Linked to From users

The resourceType link attribute indicates the type of resource to which the link points. Clients should use the resourceType to determine the expected response bodies for `GET` and `POST` and allowable request bodies for `POST` and `PUT`.

Table 44–10 lists the resource types that individual users can link to from this resource. Users have a reference link to themselves and to the next page or previous page of results.

Table 44–10 Related Resource Types for users

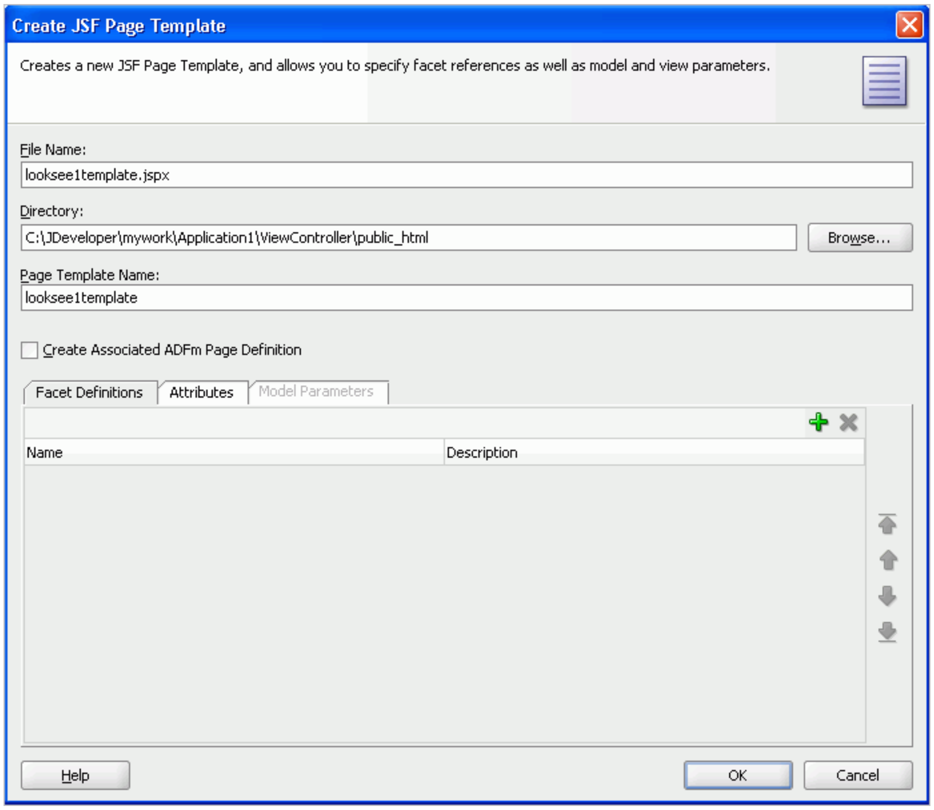
rel	resourceType
self	urn:oracle:webcenter:tagging:users
Previous/Next	urn:oracle:webcenter:tagging:users

44.3.3 Optional Way to Show Tags on Pages

While it is possible to add the Tagging Button and task flows on a page-by-page basis, typically you want to add the search toolbar and tags as part of a page template that you can apply whenever building a page that requires it. To add tags through a page template:

1. Open the project where you plan to create pages with tags.
2. Right-click the project name and select **New** from the context menu.
3. Under **Categories**, select **JSF** and, under **Items**, select **JSF Page Template**.
4. For **File Name**, enter `lookseeltemplate`.

Figure 44–7 Create JSF Page Template Dialog



Create JSF Page Template

Creates a new JSF Page Template, and allows you to specify facet references as well as model and view parameters.

File Name: looksee1template.jspx

Directory: C:\JDeveloper\mywork\Application1\ViewController\public_html

Page Template Name: looksee1template

□ Create Associated ADFm Page Definition

5. Click **OK**.
6. Go to the Source view and modify the code to be similar to that in Example 44–3.

Example 44–3 Sample JSF Page Template

```
<af:pageTemplateDef var="attrs">
  <af:xmlContent>
    <component xmlns="http://xmlns.oracle.com/adf/faces/rich/component">
      <display-name>looksee1template1</display-name>
      <facet>
        <facet-name>content</facet-name>
      </facet>
    </component>
  </af:xmlContent>
  <af:panelGroupLayout layout="vertical">
```

```
    <!-- Our toolbar -->
    <af:panelGroupLayout id="toolbar" layout="horizontal" halign="end"
                         inlineStyle="background-color:cyan;width:100%">
    </af:panelGroupLayout>
    <af:panelStretchLayout startWidth="300"
                           inlineStyle="height:600px; width:100%;">
      <f:facet name="start">
        <af:panelSplitter id="sidebar" orientation="vertical">
          <f:facet name="first">
            </f:facet>
          <f:facet name="second">
          </f:facet>
        </af:panelSplitter>
      </f:facet>
      <f:facet name="center">
        <af:facetRef facetName="content"/>
      </f:facet>
    </af:panelStretchLayout>
  </af:panelGroupLayout>
</af:pageTemplateDef>
```

7. On the Component Palette, select the **Tagging Button** and drop it on the page, inside the `PanelGroupLayout`. Make it the first child of the `PanelGroupLayout`.

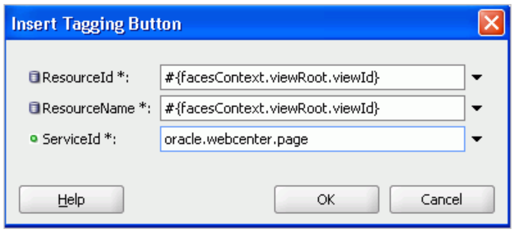
8. Fill out the Insert Tagging Button dialog as shown in Figure 44–8.

   Table 44–11 provides descriptions and example values for the fields in the dialog.

Table 44–11 Fields in the Insert Tagging Button Dialog for a Page

Field	Description
`ResourceId`	Unique identifier of your page. In this case, because the resource ID is meant for a page, enter `#{facesContext.viewRoot.viewId}`.
`ResourceName`	Name of the page. In this case, enter `#{facesContext.viewRoot.viewId}`. (You can enter a more user-friendly name.)
`ServiceId`	Service identifier that you add to `service-definition.xml` when adding the resource viewer. In this case, enter `oracle.webcenter.page`. Note: Because `oracle.webcenter.page` is available in the page service library, nothing must be added to `service-definition.xml`.

Figure 44–8 Insert Tagging Button Dialog for a Page



Insert Tagging Button
ResourceId *: #{facesContext.viewRoot.viewId}
ResourceName *: #{facesContext.viewRoot.viewId}
ServiceId *: oracle.webcenter.page
Help
OK
Cancel

9. Click **OK**.

10. From the Resource Palette, expand the **WebCenter Portal - Services Catalog** and the **Task Flows**.

11. Drag **Tagging Dialog** from the Resource Palette and drop it on the page inside of the `panelGroupLayout`.
12. When prompted, select **Region** as the way to create the task flow.
13. Drag **Search Toolbar** and drop it after the **Tagging Dialog** you just added to the page template in the `panelGroupLayout`.
14. When prompted, select **Region** as the way to create the task flow.
15. Drag **Document Library - Recent Documents** and drop it in the second facet of the `panelSplitter` with identifier `sidebar`.
16. When prompted, select **Region** as the way to create the task flow.
17. In the Edit Task Flow Binding dialog, for `connectionName`, enter the name of the connection to your document library's content repository; for example, `${'MyFileSystem'}`. For information on how to set up a connection to your content repository, see Section 25.2, "Configuring Content Repository Connections."
18. The source for your page template should now look similar to Example 44–4.

Example 44–4 JSF Page Template with Tags and Search

```
<af:pageTemplateDef var="attrs">
  <af:xmlContent>
    <component xmlns="http://xmlns.oracle.com/adf/faces/rich/component">
      <display-name>looksee1template1</display-name>
      <facet>
       <facet-name>content</facet-name>
      </facet>
    </component>
  </af:xmlContent>
  <af:panelGroupLayout layout="vertical">
   <!-- Our toolbar -->
   <af:panelGroupLayout id="top" layout="horizontal" halign="end"
               inlineStyle="background-color:cyan;width:100%">
    <tag:taggingButton resourceId="#{facesContext.viewRoot.viewId}"
                     resourceName="#{facesContext.viewRoot.viewId}"
                        serviceId="oracle.webcenter.page"/>
     <af:region value="#{bindings.tagginglaunchdialog1.regionModel}"
                id="tagginglaunchdialog1"/>
     <af:region value="#{bindings.searchtoolbar1.regionModel}"
                id="searchtoolbar1"/>
   </af:panelGroupLayout>
    <af:panelStretchLayout startWidth="300"
                          inlineStyle="height:600px; width:100%;">
     <f:facet name="start">
     <af:panelSplitter orientation="vertical">
      <f:facet name="first">
       <af:region value="#{bindings.taskservicetaskflowdefinition1.regionModel}"
                  id="taskservicetaskflowdefinition1"
                  inlineStyle="position:absolute; left:0px; width:100%;
                   height:100%"/>
      </f:facet>
      <f:facet name="second">
       <af:region value="#{bindings.doclibrecentdocuments1.regionModel}"
                  id="doclibrecentdocuments1"/>
      </f:facet>
       </af:panelSplitter>
      </f:facet>
      <f:facet name="center">
       <af:facetRef facetName="content"/>
      </f:facet>
    </af:panelStretchLayout>
   </af:panelGroupLayout>
  </af:pageTemplateDef>
```

19. Create two new pages based upon the page template you just created. In the Create JSF Page dialog, select `looksee1template1` from the **Use Page Template** list.

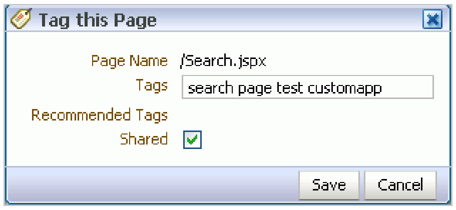
    - Create a page called `Search.jspx` and add the **Search** task flow in the center facet.
    - Create a page called `Documents.jspx` and add the **Document Library - List View** task flow as the center facet. In the Edit Task Flow Binding dialog, for `connectionName`, enter the name of the connection to your document library's content repository; for example, `${'MyFileSystem'}`. For information on how to set up a connection to your content repository, see Section 25.2, "Configuring Content Repository Connections."

20. Save your pages.

To run your pages with tags:

1. In the Applications Navigator, run the `Search.jspx` page.
2. After you log in and the page comes up, click the **Tags** link.
3. In the Tag this Page dialog, enter `search page test customapp` for **Tags** (Figure 44–9).

Figure 44–9 Tag this Page Dialog for Search Page



Tag this Page

Page Name /Search.jspx

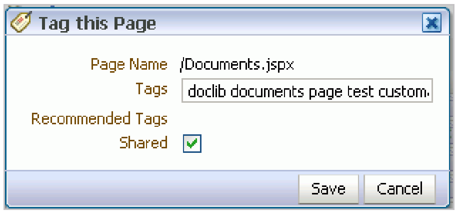
Tags search page test customapp

Recommended Tags

Shared ☑

4. Click **Save**.
5. Navigate to `Documents.jspx` (or run it separately).
6. Click the **Tags** link.
7. In the Tag this Page dialog, enter `doclib documents page test customapp` for **Tags** (Figure 44–10).

Figure 44–10 Tag this Page Dialog for Documents Page



Tag this Page

Page Name /Documents.jspx

Tags doclib documents page test custom

Recommended Tags

Shared ☑

8. Click **Save**.

9. In the search toolbar for the `Documents.jspx` page, enter `search` and click the **Search** icon.
10. Under **Tags**, click `search`.

44.3.4 Using the Resource Action Handling Framework to Tag Custom Objects

For tools and services exposing resources to be tagged (and therefore searched and viewed) WebCenter Portal provides a Resource Action Handling framework. For example, rows in a table can be tagged.

To register a resource viewer, see Section 4.3, "Customizing How Services Render Resources."

44.3.5 Troubleshooting Tags

This section provides troubleshooting tips on implementing tags. It includes the following topics:

- Section 44.3.5.1, "Tag Center Results Do Not Appear When Tag Is Clicked"
- Section 44.3.5.2, "The Tag Center Does Not Display Tagged Documents"
- Section 44.3.5.3, "The Tagging Button Does Not Display On Page"
- Section 44.3.5.4, "Clicking a Tagged Resource Does Not Go To The Correct Page"

44.3.5.1 Tag Center Results Do Not Appear When Tag Is Clicked

Problem

A resource to which a user has View permission has been tagged, but the user cannot see the resource in the Tag Center.

Solution

1. `In service-definition.xml`, verify that the resource type has the Resource Authorizer configured properly.
2. Enable logging for the Resource Authorizer to ensure that it is giving you permission to see the required objects.

44.3.5.2 The Tag Center Does Not Display Tagged Documents

Problem

Tagged WebCenter Portal Content Server documents do not appear in the Tag Center.

Solution

Check the version listed for the WebCenter Portal component in the Content Server. The result set name changed in WebCenter Portal release 11.1.1.6.0.

44.3.5.3 The Tagging Button Does Not Display On Page

Problem

The Tagging Button component is dropped on a page, but it does not show up.

Solution

- The Tagging Button requires the Tagging Dialog task flow to be present on the page. Drop this task flow on the page or page template.
- The Tagging Button requires a valid database connection. Ensure that there is a database connection present.

44.3.5.4 Clicking a Tagged Resource Does Not Go To The Correct Page

Problem

When clicking a tagging resource in Tag Center, users are not redirected to the correct page.

Solution

All tagging links are generated through the Resource Action Handling (RAH) framework. Ensure that RAH is configured properly.

- Check `service-definition.xml` for that resource type to see if a resource viewer is configured properly.
- Ensure that the `resourceID` and `serviceID` parameters passed for this resource are correct.

> **See Also:** Section 4.3, "Customizing How Services Render Resources"

45 Integrating Search

This chapter describes how to integrate search at design time.

This chapter includes the following topics:

- Section 45.1, "Introduction to Search"
- Section 45.2, "Basic Configuration for Search"
- Section 45.3, "Advanced Information for Search"

For more information about managing and including search, see:

- "Managing Oracle Secure Enterprise Search in WebCenter Portal" in *Administering Oracle WebCenter Portal*
- "Adding Search to a Portal" in *Building Portals with Oracle WebCenter Portal*
- "Searching for Information" in *Using Oracle WebCenter Portal*

45.1 Introduction to Search

WebCenter Portal provides a unified, extensible framework that enables the discovery of information through an intuitive user interface. It honors application security settings by returning only the results a user is authorized to view.

WebCenter Portal provides two ways of searching your application:

- Oracle Secure Enterprise Search (SES) adapter
- Oracle WebCenter Portal live (delegated) search

> **Note:** You can implement either Oracle SES or the live search solution in your application, but not both.

Oracle SES is set as the default and preferred search platform. In addition to providing better scalability and performance than WebCenter Portal's live search, Oracle SES is beneficial for the following reasons:

- Oracle SES provides unified ranking results, with the most relevant items appearing first.
- Oracle SES provides more thorough search. For example, when searching lists, WebCenter Portal live search only searches list names and descriptions, while Oracle SES also searches list column names and column contents.
- Oracle SES allows search of repositories outside of WebCenter Portal. Oracle SES results appear in the same result set as WebCenter Portal's search results.

- Oracle SES supports the search REST APIs and data control for customizing your search interface.

In addition to the Oracle SES or live search functionality, the Documents tool provides its own search engine for file searches. This saves time and increases the relevancy of results by narrowing the scope of a search to files.

45.1.1 Understanding Search

Search with Oracle SES requires additional configuration in Oracle SES Administration, Oracle WebCenter Content: Content Server, and Oracle WebCenter Portal's Discussion Server.

Oracle strongly recommends using Oracle SES release 11.2.2.2 (included with WebCenter Portal release 11.1.1.8).

> **Note:** This chapter describes how to integrate Oracle SES release 11.2.2.2 in Portal Framework applications. If you choose to use Oracle SES release 11.1.2 or 11.1.2.2 instead, then see:
>
> `http://docs.oracle.com/cd/E28280_01/webcenter.1111/e10148/jpsdg_search.htm#BABBDFDC`

This section contains the following topics:

- Section 45.1.1.1, "Understanding Search with WebCenter Portal Live Search"
- Section 45.1.1.2, "Understanding Search with the Oracle SES Adapter"
- Section 45.1.1.3, "Click Actions on Search Results"

45.1.1.1 Understanding Search with WebCenter Portal Live Search

Although Oracle SES is the preferred search platform for best performance, you can manually override search with Oracle SES and have applications search using WebCenter Portal's live (delegated) search. WebCenter Portal's live search adapters span all enabled and searchable components, such as documents, tags, people, and pages.

> **See Also:** Section 45.3.2, "Configuring Search with WebCenter Portal's Live Search"

45.1.1.2 Understanding Search with the Oracle SES Adapter

Oracle SES provides unified ranking results for the following resources:

- Documents, including wikis and blogs
- Announcements and discussions

> **Note:** WebCenter Portal applications include the Oracle SES crawler that indexes portals, lists, page metadata, and people resources. This crawler is not supported in Portal Framework applications.

Your search environment varies depending on the version of Oracle SES configured. For example:

- If your system is configured with **Oracle SES 11.2.2.2**, then you can customize search on the **Tools and Services - Search** administration page. Oracle SES 11.2.2.2 supports faceted search, filtered search in the search box, and document thumbnails, while earlier releases of Oracle SES and implementations with live (delegated) search do not. (All customization with Oracle SES 11.2.2.2 is done on the **Tools and Services - Search** administration page, even though task flow parameters may display.)
- If your system is configured with **Oracle SES 11.1.2.***, then you can customize search using Search - Non-Faceted Search task flow parameters. Oracle SES 11.1.2.* supports saving searches and setting user preferences with search, while the 11.2.2.2 adapter and implementations with live (delegated) search do not.

Note: Facets let users navigate indexed data without running a new search. Some search terms can provide massive results, but faceted navigation within search lets users clarify exactly what they are looking for, or even discover something new. Facets count the full corpus and have better response time that the search refiners used in earlier releases.

The **Tools and Services - Search** administration page shows what search is configured.

See Also: Section 45.3.1, "Configuring Search with the Oracle SES Adapter"

45.1.1.3 Click Actions on Search Results

If no Resource Action Handling is specified in the application, then the default action when a search result is clicked is to render the search result in a new browser window. Also, results from components that provide resource viewers, such as documents, discussions or announcements, open in their resource viewers. For more information about resource viewers and the Resource Action Handling framework, see Section 4.3, "Customizing How Services Render Resources."

45.1.2 What Happens at Runtime

At runtime, users can perform global (application-wide) searches.

For more information about WebCenter Portal's search at runtime, see the "Searching for Information" chapter in *Using Oracle WebCenter Portal*.

45.2 Basic Configuration for Search

This section provides the steps for adding search to your application. It includes the following topics:

- Section 45.2.1, "Configuration Roadmap - Oracle SES"
- Section 45.2.2, "Setting up Connections for Oracle SES"
- Section 45.2.3, "Adding Search at Design Time"
- Section 45.2.4, "Setting Security for Search"

45.2.1 Configuration Roadmap - Oracle SES

Use the roadmap in this section as a guide through the configuration process.

Note: If you override search with Oracle SES to use the original WebCenter Portal live search adapters, then no Oracle SES configuration is required. Skip ahead to section Section 45.2.3, "Adding Search at Design Time."

Figure 45–1 and Table 45–1 provide an overview of the prerequisites and tasks required to get Oracle SES working in Portal Framework applications.

Figure 45–1 Configuring Oracle SES for Portal Framework Applications

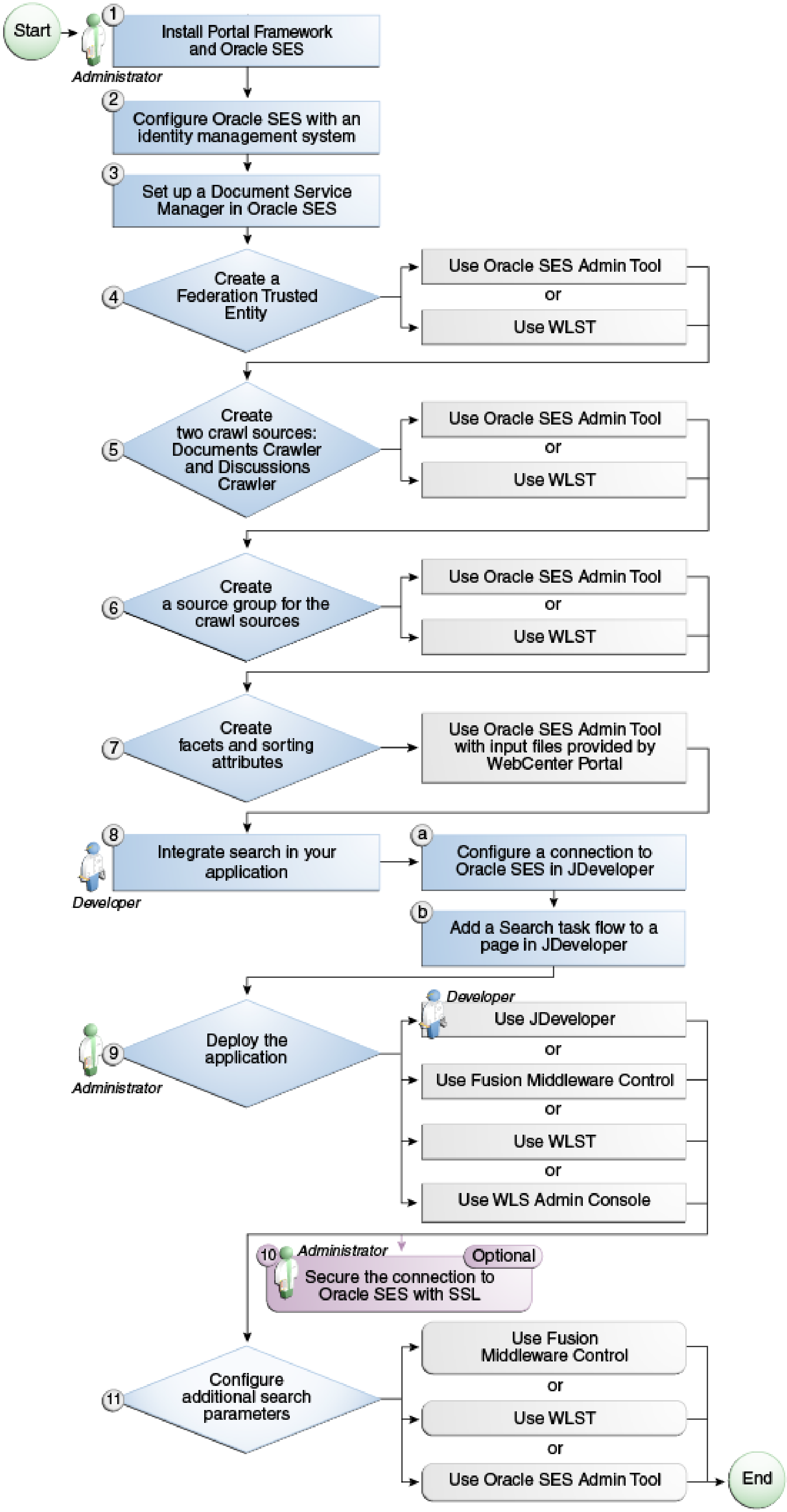

Start
1
Administrator
Install Portal Framework and Oracle SES
2
Configure Oracle SES with an identity management system
3
Set up a Document Service Manager in Oracle SES
4
Create a Federation Trusted Entity
Use Oracle SES Admin Tool
or
Use WLST
5
Create two crawl sources: Documents Crawler and Discussions Crawler
Use Oracle SES Admin Tool
or
Use WLST
6
Create a source group for the crawl sources
Use Oracle SES Admin Tool
or
Use WLST
7
Create facets and sorting attributes
Use Oracle SES Admin Tool with input files provided by WebCenter Portal
8
Developer
Integrate search in your application
a
Configure a connection to Oracle SES in JDeveloper
b
Add a Search task flow to a page in JDeveloper
9
Administrator
Deploy the application
Developer
Use JDeveloper
or
Use Fusion Middleware Control
or
Use WLST
or
Use WLS Admin Console
10
Administrator
Optional
Secure the connection to Oracle SES with SSL
11
Configure additional search parameters
Use Fusion Middleware Control
or
Use WLST
or
Use Oracle SES Admin Tool
End

Table 45–1 Configuring Oracle SES for Portal Framework Applications

Actor	Task	Sub-task
Administrator	1. Install WebCenter Portal and Oracle SES 11.2.2.2	
	2. Configure Oracle SES with an identity management system	
	3. Set up a Document Service Manager in Oracle SES	
	4. Create a Federation Trusted Entity using one of the following tools: ■ Oracle SES Admin Tool ■ WLST	
	5. Create two crawl sources: Documents Crawler and Discussions Crawler using one of the following tools: ■ Oracle SES Admin Tool ■ WLST	
	6. Create a source group for the crawl sources using one of the following tools: ■ Oracle SES Admin Tool ■ WLST	
	7. Create facets and sorting attributes	
Developer	8. Integrate search in your application	8.a Configure a connection to Oracle SES in JDeveloper **Note**: This step must include running the `setSESVersion` WLST command to enable the Tools and Services - Search administration page. 8.b Add a Search task flow to a page in JDeveloper
Developer or Administrator	9. Deploy the application using one of the following tools: ■ JDeveloper (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator) ■ WLS Admin Console (Administrator)	
Administrator	10. (Optional) Secure the connection to Oracle SES with SSL	
Administrator	11. Configure additional search parameters using one of the following tools: ■ Fusion Middleware Control ■ WLST ■ WLS Admin Console	

45.2.2 Setting up Connections for Oracle SES

To search with Oracle SES, you must add the Oracle SES connection in the application. For more information, see Section 45.3.1, "Configuring Search with the Oracle SES Adapter."

1. Add the search toolbar to a page, following Section 45.2.3, "Adding Search at Design Time."

2. Set up a connection to Oracle SES. In the Application Navigator, expand **Application Resources**. Right-click the **Connections** node, select **New Connection**, and then **Oracle SES Connection**.

   Select to create the connection in either the Application Resources or IDE connections. A connection in Application Resources is available only for that application, while a connection in IDE connections is available for all applications you create. If you plan to use the connection in other applications, then select IDE connections to avoid the need to re-create it.

   > **Note:** If you create the connection in IDE, then the connection must be added to the application later. For example, in the Resource Palette under IDE connections, right-click the connection and select **Add to Application**.

   Enter values for the fields in the dialog. For example:

   a. For **Connection Name**, enter a meaningful name, for example, `SESconnection`. This name cannot be changed after it is created. (To use a different connection name, create a new connection.)

   b. For **SOAP URL**, enter the URL for the Oracle SES Web Services endpoint, for example:

   ```
   http://host:port/search/query/OracleSearch
   ```

   c. Under **Federation Trusted Entity**, for **Entity Name**, enter the trusted entity defined for this application on the Oracle SES instance; for example, `wcsearch`.

      A trusted entity allows the application to authenticate itself to Oracle SES and assert its users when making queries on Oracle SES. This trusted entity can be any user that either exists on the identity management server behind Oracle SES or is created internally in Oracle SES. You can find (or create) the trusted entity on the **Global Settings - Federation Trusted Entities** page of Oracle SES.

   d. For **Entity Password**, enter the password of the Federation Trusted Entity user.

   e. Under **Application Configuration**, select the box for **Set as default connection for the Search service**.

      This ensures that your application uses that connection to access Oracle SES. Search uses only one Oracle SES connection.

   > **Note:** After you create a connection as the default connection, you cannot edit it so that it is *not* the default. To use a different default connection, you must create a new connection and mark that as the default connection.

f. For **Source Group**, enter the Oracle SES source group in which to search. If a value is not provided, then all crawl sources in the Oracle SES instance are searched.

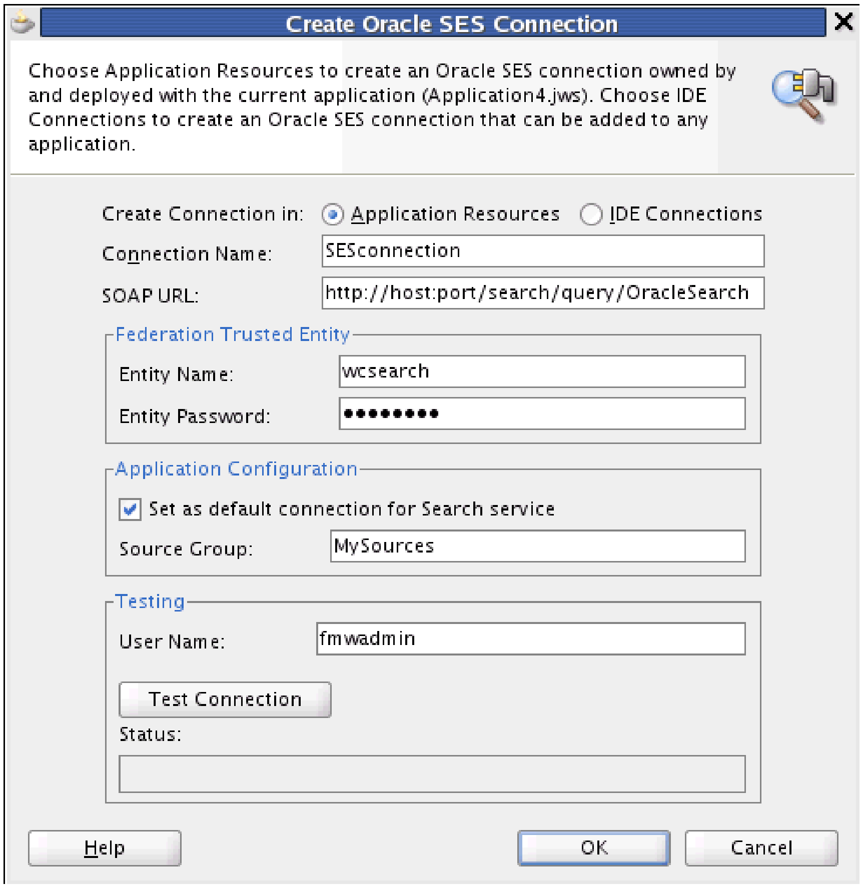
Note: Source groups present a good way to segment your searchable data on Oracle SES. Given an Oracle SES instance that keeps a search index on all corporate data, you can use source groups to make only a portion of your corporate data available to WebCenter Portal's search. For more information on creating source groups, see *Oracle SES Administrator's Guide*.

---

g. Under **Testing**, for **User name**, enter the name of a user present in both the Oracle Identity Management server configured for your application and the Oracle Identity Management server configured for Oracle SES.

You should see something similar to Figure 45–2.

Figure 45–2 Create Oracle SES Connection Dialog



Create Oracle SES Connection

Choose Application Resources to create an Oracle SES connection owned by and deployed with the current application (Application4.jws). Choose IDE Connections to create an Oracle SES connection that can be added to any application.

Create Connection in: ● Application Resources ○ IDE Connections

Connection Name: SESconnection

SOAP URL: http://host:port/search/query/OracleSearch

Federation Trusted Entity

Entity Name: wcsearch

Entity Password: ●●●●●●●●●

Application Configuration

☑ Set as default connection for Search service

Source Group: MySources

Testing

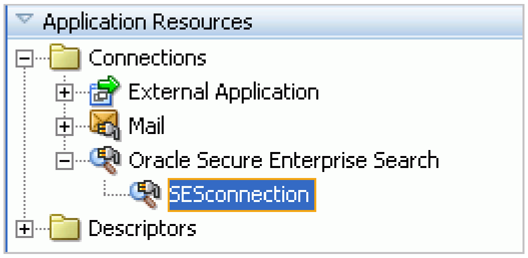
User Name: fmwadmin

Click **Test Connection** and check the status.

If the connection is successful, then click **OK**.

After you have included the Oracle SES connection in your application, you should see it in your Application Resources panel, as shown in Figure 45–3.

Figure 45–3 Oracle SES Connection in Application Resources



The Oracle SES connection is now included in the `connections.xml` file and is the default connection in the `adf-config.xml` file, as shown in Example 45–1.

Example 45–1 Oracle SES Connection in adf-config.xml

```
<ses-properties>
  <connection>SESconnection</connection>
  <data-group>MySources</data-group>
</ses-properties>
```

3. You must run the `setSESVersion` WLST command to obtain and store version information for the Oracle SES instance associated with your default connection. This enables the Tools and Services - Search administration page, which is necessary for customizing search settings with Oracle SES 11.2.2.2.

   To confirm that the Oracle SES version is set correctly, run the `listSESVersion` WLST command.

   For command syntax and examples, see the "setSESVersion" and "listSESVersion" sections in *WebLogic Scripting Tool Command Reference*.

   > **Note:** After your application has been deployed to an Oracle WebLogic managed server, you can configure it using WLST or Fusion Middleware Control. For more information, see *Administering Oracle WebCenter Portal*.

45.2.3 Adding Search at Design Time

This section describes the search task flows and explains how to integrate search into your application. It includes the following topics:

- Section 45.2.3.1, "Search Task Flows"
- Section 45.2.3.2, "How to Add Search to Your Page"
- Section 45.2.3.3, "How to Customize Search"

45.2.3.1 Search Task Flows

Table 45–2 lists the search task flows included with Oracle SES 11.2.2.2.

Table 45–2 Search Task Flows

Task Flow	Definition
Search - Faceted Search	This task flow provides a rich search experience supporting faceted search, filtered search in the search box, and document thumbnails. Note: This Search task flow is provided in environments where Oracle SES **11.2.2.2** is configured.
Search - Administration	This task flow allows access to the Tools and Services - Search administration page for customizing search settings.
Search - Toolbar	This task flow enables users to enter simple search criteria and run the search from the application. Search results are rendered as links.

Note: The other Search task flows that display are not supported with the **Search-Faceted Search** task flow.

45.2.3.2 How to Add Search to Your Page

The Search - Toolbar task flow offers the easiest way to add search to your application. To add the Search - Toolbar task flow to your application:

1. Follow the steps described in Chapter 2, "Setting Up Your Development Environment" to create a customizable page in your application.

   Note: ADF security is configured by default if you created your application using WebCenter Portal's Framework application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."

2. Open the page on which to add search.
3. In the Resource Palette, expand **My Catalogs**, **WebCenter Portal - Services Catalog**, and **Task Flows**.
4. Drag and drop the **Search - Toolbar** task flow onto the page.
5. When prompted, select **Region** as the way to create the task flow.

   If a prompt to confirm the ADF library appears, click **Add Library**.

6. Run your page with the search toolbar on it.

   In the Application Navigator, right-click this application and select **Run**. It may take a few moments for the operation to complete.

   Enter the user name and credentials that you created when you defined security.

7. The **Search-Faceted Search** task flow requires the **Search - Administration** task flow for access to the Search administration page (for customizing search settings). Add this task flow the same way you added the **Search - Toolbar** task flow.

Notes: The Resource Palette also shows the **Search - Saved Searches** and the **Search - Preferences** task flows. These task flows are not supported with the **Search-Faceted Search** task flow.

To return results, search requires that other WebCenter Portal tools and services are included in the application.

45.2.3.3 How to Customize Search

In previous releases configured with Oracle SES, application specialists could customize search (that is, alter the layout of search results as well as search behavior) using the Search (Search - Non-Faceted Search) task flow parameters. With these parameters, they could narrow the scope of searches to specific portals, tools/services, and document types. Also, they could add custom attributes to the list of standard attributes returned with each search result item, and they could hide standard refiners available to users with search results.

With WebCenter Portal release 11.1.1.8 and Oracle SES 11.2.2.2, search is customized completely on the **Tools and Services - Search** administration page (instead of using task flow parameters). This is a much easier way to configure search. This new search experience makes use of faceted search. This new Search - Faceted Search task flow is used only if Oracle SES 11.2.2.2 is configured.

45.2.4 Setting Security for Search

The Oracle SES adapter must be configured with an identity management system to validate and authenticate users. This is necessary for searches to return only results that the user is allowed to view based on access privileges. Because WebCenter Portal uses identity propagation when communicating with Oracle SES, WebCenter Portal's user base must match that in Oracle SES. One way this can happen is by configuring WebCenter Portal and Oracle SES to the same identity management system. For detailed information, see the "Oracle SES - Configuration" section in *Administering Oracle WebCenter Portal*.

Note: WebCenter Portal's live (delegated) search relies on individual tools and services to ensure that the user performing the search can view results. Search results are returned based on user privileges. When unauthenticated, queries return only public content. Only authenticated users of an ADF-secured application can save searches.

ADF security is configured by default if you created your application using WebCenter Portal's Framework application template. For information about configuring ADF security, see Section 74.3, "Configuring ADF Security."

45.3 Advanced Information for Search

This section describes optional features available with search. It includes the following topics:

- Section 45.3.1, "Configuring Search with the Oracle SES Adapter"
- Section 45.3.2, "Configuring Search with WebCenter Portal's Live Search"
- Section 45.3.3, "Using the Search Java APIs"
- Section 45.3.4, "Using the Search REST APIs"

- Section 45.3.5, "Using the Search Data Control"
- Section 45.3.6, "Building Adapters for Search"
- Section 45.3.7, "Customizing the Search UI Without WebCenter Portal's Search APIs"
- Section 45.3.8, "Troubleshooting Search"

> **Note:** The search REST APIs and data controls are available only for search using Oracle SES. They are not supported with search using WebCenter Portal's live (federated) search.

45.3.1 Configuring Search with the Oracle SES Adapter

WebCenter Portal applications automatically set Oracle SES as the default search adapter, but additional configuration is required in Oracle SES, Oracle WebCenter Content: Content Server, and Oracle WebCenter Portal's Discussion Server. See the "Managing Oracle Secure Enterprise Search in WebCenter Portal" section in *Administering Oracle WebCenter Portal* for detailed information about the steps to set up search with the Oracle SES adapter.

After you have completed all configuration steps, validate the inclusion of Oracle SES results in WebCenter Portal's search.

1. In the Application Navigator, right-click the page you created with the Search - Toolbar, and click **Run**.

   As long as the application has been ADF-secured, you should see a login page. It may take a few moments for the operation to complete.

2. Enter the user name and credentials that you created when you defined security.
3. Click **Submit**.

   When the page loads, you should see your search toolbar.

   Figure 45–4 shows a sample results page for the search term *webcenter*, before Oracle SES has crawled anything.

Figure 45–4 Search Results

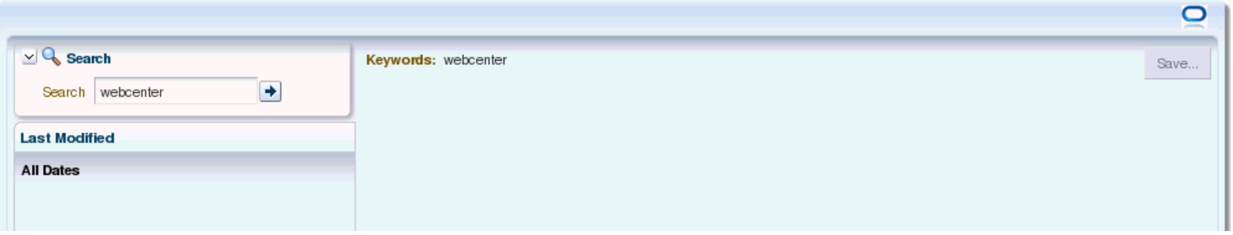
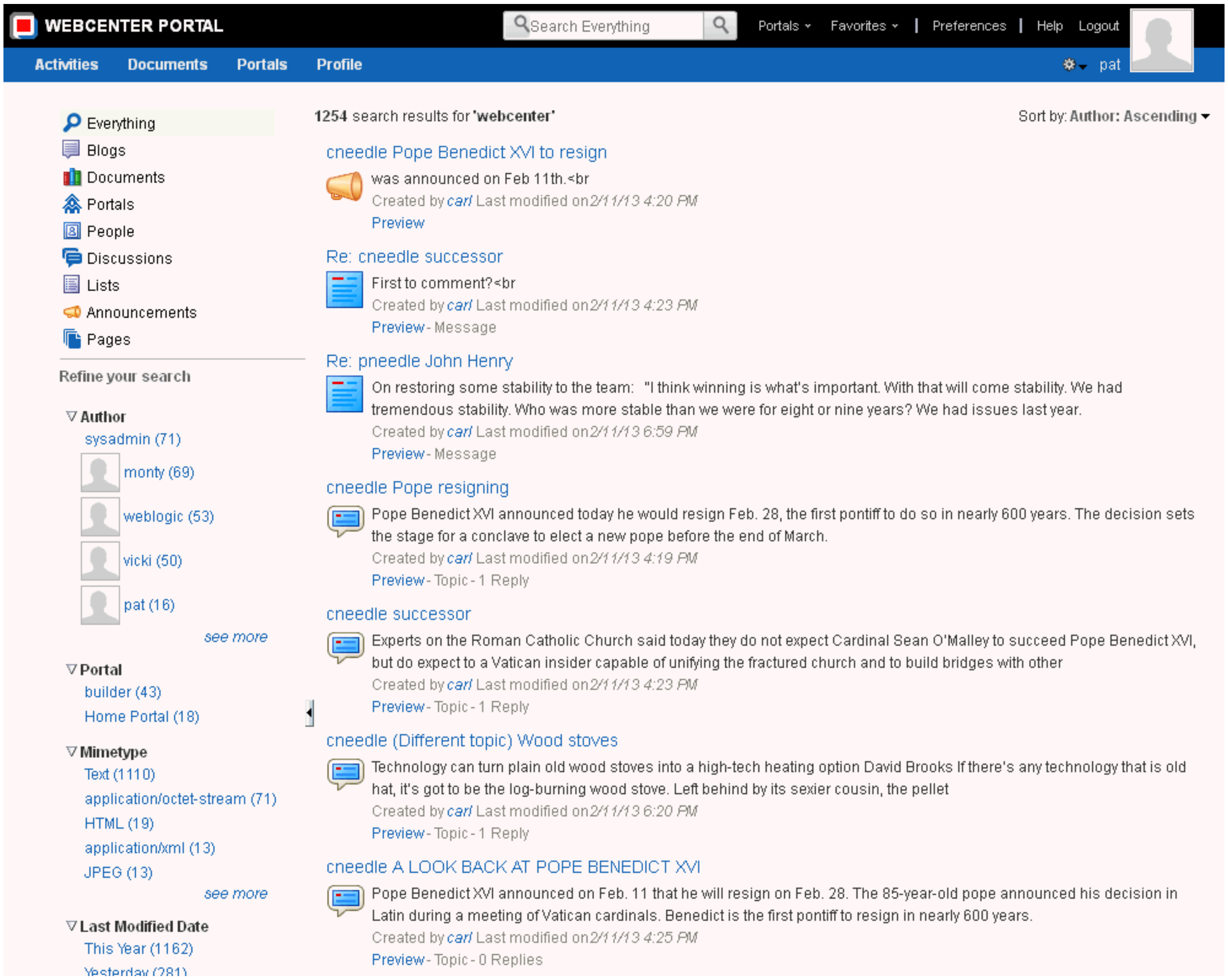


Figure 45–5 shows a sample results page after Oracle SES has been configured and crawled.

Figure 45–5 Global Search Results



1254 search results for 'webcenter'

cneedle Pope Benedict XVI to resign
was announced on Feb 11th.<br
Created by carl Last modified on 2/11/13 4:20 PM
Preview

Re: cneedle successor
First to comment?<br
Created by carl Last modified on 2/11/13 4:23 PM
Preview - Message

Re: pneedle John Henry
On restoring some stability to the team: "I think winning is what's important. With that will come stability. We had tremendous stability. Who was more stable than we were for eight or nine years? We had issues last year.
Created by carl Last modified on 2/11/13 6:59 PM
Preview - Message

cneedle Pope resigning
Pope Benedict XVI announced today he would resign Feb. 28, the first pontiff to do so in nearly 600 years. The decision sets the stage for a conclave to elect a new pope before the end of March.
Created by carl Last modified on 2/11/13 4:19 PM
Preview - Topic - 1 Reply

cneedle successor
Experts on the Roman Catholic Church said today they do not expect Cardinal Sean O'Malley to succeed Pope Benedict XVI, but do expect to a Vatican insider capable of unifying the fractured church and to build bridges with other
Created by carl Last modified on 2/11/13 4:23 PM
Preview - Topic - 1 Reply

cneedle (Different topic) Wood stoves
Technology can turn plain old wood stoves into a high-tech heating option David Brooks If there's any technology that is old hat, it's got to be the log-burning wood stove. Left behind by its sexier cousin, the pellet
Created by carl Last modified on 2/11/13 6:20 PM
Preview - Topic - 1 Reply

cneedle A LOOK BACK AT POPE BENEDICT XVI
Pope Benedict XVI announced on Feb. 11 that he will resign on Feb. 28. The 85-year-old pope announced his decision in Latin during a meeting of Vatican cardinals. Benedict is the first pontiff to resign in nearly 600 years.
Created by carl Last modified on 2/11/13 4:25 PM
Preview - Topic - 0 Replies

See Also: Oracle SES documentation provided on the Oracle Fusion Middleware documentation library (in WebCenter Portal's product area)

45.3.2 Configuring Search with WebCenter Portal's Live Search

You can manually override search with Oracle SES and have applications search using WebCenter Portal's live (delegated) search.

To enable search with WebCenter Portal's live search, edit the `adf-config.xml` file either to change all enable attributes in `crawl-properties` to false (Example 45–2) or to comment out the `crawl-properties` entirely (Example 45–3).

Example 45–2 Crawl Properties in adf-config.xml Set to False

```
  <searchC:adf-search-config
xmlns="http://xmlns.oracle.com/webcenter/search/config">
    <display-properties>
      <common numSavedSearches="5"/>
      <region-specific>
        <usage id="simpleSearchResultUIMetadata" numServiceRows="5"/>
        <usage id="searchResultUIMetadata" numServiceRows="5"/>
        <usage id="localToolbarRegion" numServiceRows="5"/>
      </region-specific>
    </display-properties>
    <execution-properties timeoutMs="7000" prepareTimeoutMs="3000"/>
    <crawl-properties fullCrawlInterval="P5D" enableWcServicesCrawl="false"
                      enableWcDiscussionsCrawl="false" enableWcUcmCrawl="false"/>
    <ses-properties>
      <connection/>
      <data-group/>
    </ses-properties>
  </searchC:adf-search-config>
```

Example 45–3 Crawl Properties in adf-config.xml Commented Out

```
  <searchC:adf-search-config
xmlns="http://xmlns.oracle.com/webcenter/search/config">
    <display-properties>
      <common numSavedSearches="5"/>
      <region-specific>
        <usage id="simpleSearchResultUIMetadata" numServiceRows="5"/>
        <usage id="searchResultUIMetadata" numServiceRows="5"/>
        <usage id="localToolbarRegion" numServiceRows="5"/>
      </region-specific>
    </display-properties>
    <execution-properties timeoutMs="7000" prepareTimeoutMs="3000"/>
    <!--
    <crawl-properties fullCrawlInterval="P5D" enableWcServicesCrawl="true"
                      enableWcDiscussionsCrawl="true" enableWcUcmCrawl="true"/>
    -->
    <ses-properties>
      <connection/>
      <data-group/>
    </ses-properties>
  </searchC:adf-search-config>
```

45.3.3 Using the Search Java APIs

Custom components can implement search APIs to expose their content to WebCenter Portal's search.

For more information, see *Java API Reference for Oracle WebCenter Portal*.

45.3.4 Using the Search REST APIs

WebCenter Portal provides REST APIs that let you build a customized search user interface. With Oracle SES 11.2.2.2, you can use the search REST APIs to read (GET) searches and facets. Facets are returned with search results and can be used to filter the results. You can specify keywords and the scope of the search; for example, suppose a search for the term 'webcenter' produces thousands of results. A user could use facets (such as author or last modified date) in the URL to get the results for particular facet values, like author=Karen and last-modified-date=this week.

This section includes the following topics:

- Section 45.3.4.1, "Search Entry Point"
- Section 45.3.4.2, "Search Resource Type Taxonomy"
- Section 45.3.4.3, "Security Considerations"
- Section 45.3.4.4, "Search Resource Types"

For an introduction to the REST APIs, see Chapter 53, "Using Oracle WebCenter Portal REST APIs."

45.3.4.1 Search Entry Point

Each REST service has a link element within the resource index that provides the entry point for that service. To find the entry point for search, find the link element with a `resourceType` of:

```
urn:oracle:webcenter:searchcollection
```

The corresponding `href` or `template` element provides the URI entry point. The client sends HTTP requests to this entry point to work with search.

> **See Also:** There are two entries for search in the resource index:
>
> - `urn:oracle:webcenter:searchcollection` (This requires WebCenter Portal to be configured with Oracle SES 11.2.2.2.)
> - `urn:oracle:webcenter:searchresults` (This requires WebCenter Portal to be configured with Oracle SES--any supported version.)
>
> **This chapter describes only `urn:oracle:webcenter:searchcollection`**. For detailed information about `urn:oracle:webcenter:searchresults`, see:
>
> `http://docs.oracle.com/cd/E28280_01/webcenter.1111/e10148/jpsdg_search.htm`.

For more information about the resource index, see Section 53.5.1, "Using the Resource Index."

For more information about resource types, see Section 53.5.2.1, "Resource Type."

45.3.4.2 Search Resource Type Taxonomy

When the client has identified the entry point, it then can navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 53.5.2.1, "Resource Type."

The taxonomy for the search is:

```
urn:oracle:webcenter:searchcollection
   urn:oracle:webcenter:searchcollection:results
```

Beyond the service entry points, URL templates allow clients to pass query parameters to customize their requests and control the form of returned data.

Collection resources in the search resources support pagination (`startIndex` and `itemsPerPage`). The entry point returns all the results in `searchcollection` element. Query various components by specifying appropriate values in `dataType` argument.

Support for `searchTerms`, `data`, and `dataType` where `dataType` has one or more of the following values:

- `resultCount` - number of results satisfying the query
- `results` - actual results
- `facetCount` - number of facets for the query result
- `facets` - facets for the current results

Specify more than one `dataType` with comma separated values. For example:

```
http://host:port//rest/api/searchcollection?&dataType=results,facets
&facetParams=author:weblogic&utoken=FDX7xKPzzrnsbWRHNP-b-iUoWiJ4_w\*\\\\\\\\*
```

Navigation Paths to results

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   searchcollection

resourceindex
   spaces
      spaces:resourceindex
         spaces:searchcollection
```

Supported Methods for results

The following methods are supported by this resource:

- GET
  - **request - body:** none, **Parameters**: q, dataType, startIndex (pagination), itemsPerPage (pagination), data, facetParams
  - **response - body:** search results, and optionally facets

where:

- q={queryString}

  Searches may be specified using the following format:

  `[[`*`field1`*`:[`*`operand`*`]][:]`*`value1`*`[;`*`field2`*`:`*`operand`*`:`*`value2`*`]]`

  Where multiple clauses are joined by an implicit AND and are syntactically separated by the ";" semicolon. Square brackets [] denote optional values. Each clause can be a keyword simple string with no ":" colon separator.

  The query string does not support anything other than a query keyword.

- dataType is the type of results

  For example, if you want only results, then dataType=results (or left empty). To include facets in the results, then dataType=results,facets.

- data is parameters for custom attributes

  For example:

  ```
  data=numberofreplies,wc_tagsWords
  ```

- facetParams is parameters for facet refinement

  Default set is Service ID, scope GUID, Tags, Author, Last Modified Date, Mimetype.

  For example, to refine by people, set the facet Service ID only to oracle.webcenter.people:

  ```
  facetParams=Service%20ID:oracle.webcenter.people
  ```

> **Note:** If you want to use the facetParams parameter, then the dataType parameter must include facets.

Example 45–4 Search REST Commands

```
http://examplehost:8888/rest/api/searchcollection?q=document&utoken={utoken}
```

```
http://examplehost:8888/rest/api/searchcollection?q={keyword}
&data=dDocName,dOriginalName&dataType=results,facets
&facetParams=Service%20ID:oracle.webcenter.people
```

For more information, see Section 53.5.2.5, "Templates."

> **See Also:** For detailed information on Oracle SES query syntax, see:
>
> http://docs.oracle.com/cd/E21698_01/admin.1122/e21605/search001.htm#BABFDAGD.

Writable Elements for results

Table 45–3 lists the writable elements for this resource.

Table 45–3 Writable Elements for results

Element	Type	Description
author	String	Any user who has written to the result
resourceId	String	Unique identifier
serviceId	String	Service ID of the result; for example, oracle.webcenter.doclib
title	String	Title of result
description	String	Description of result
modified	Date	Last modified date
size	Number	Size of result
docid	String	Document identifier
created	Date	Original author of result
icon	String	Icon for result type
url	String	URL of result
mimetype	String	Mimetype of result
guid	String	GUID value of result
scope	String	GUID value of the portal
scopename	String	Portal name
resourceType	String	Type of result
language	String	Language of result
snippet	String	Snippet of result
modifier	String	Modifier of result
customattributes	any	List of any custom attributes specified in data

Resource Types Linked to From results

Table 45–4 lists the resource types that the client can link to from this resource.

Table 45–4 Related Resource Types for search

rel	resourceType
self	

45.3.4.3 Security Considerations

Authentication is required before using search REST API methods.

For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

45.3.4.4 Search Resource Types

This section provides information about each resource type. It includes the following topics:

- Section 45.3.4.4.1, "urn:oracle:webcenter:searchcollection:links"
- Section 45.3.4.4.2, "urn:oracle:webcenter:searchcollection:results"
- Section 45.3.4.4.3, "urn:oracle:webcenter:searchcollection:facets"

45.3.4.4.1 urn:oracle:webcenter:searchcollection:links Use this resource type for template links and pagination links.

45.3.4.4.2 urn:oracle:webcenter:searchcollection:results Use this resource type to identify the URI to use to read (`GET`) a query containing keywords and facets.

The request is represented by the URL and the response is a list of search results, each with metadata to help the end user choose an item to drill down, as well as cross links to the owning REST services, if available. If the owning REST service is unavailable, then an HREF link is provided.

The response XML can be paginated with standard URL parameters, and appropriate previous and next links provided along with a general template (with the query prepopulated) for the consuming application to do its own custom pagination.

45.3.4.4.3 urn:oracle:webcenter:searchcollection:facets Use this resource type to identify the URI to use to read (`GET`) a query containing facets. Facets are returned with the query results and can be used to filter the results. Users can use these facets in the URL to get the results for particular facet values, like author=weblogic and last-modified-date=this week.

The request is represented by the URL and the response is a list of facets, each with metadata to help the end user choose an item to drill down, as well as cross links to the owning REST services, if available. If the owning REST service is unavailable, then an HREF link is provided.

The response XML can be paginated with standard URL parameters, and appropriate previous and next links provided along with a general template (with the query prepopulated) for the consuming application to do its own custom pagination.

45.3.5 Using the Search Data Control

Use the Search data control to build a customized search user interface with an application or a custom task flow. Deploying this task flow into an ADF library allows for a portable consumption of the task flow; for example, you could add it to a WebCenter Portal application Resource Catalog to build site templates.

45.3.5.1 Search Data Control Methods, Attributes, and Classes

The Search data control contains the `searchSes` method. Table 45–5 describes its parameters for setting search refiners and limiting the scope of the search.

Table 45–5 searchSes Input Parameters

Parameter	Required?	Type	Description
scopeGuid	No	String	GUID value to filter results by portal.
serviceId	No	String	The service ID of the item; for example, oracle.webcenter.doclib searches only documents. If omitted, this searches across all tools and services.
keywords	Yes	String	Search terms.
predicates	No	List	Collection of predicates.
fetchRefiners	No	Boolean	Whether to fetch refiners. If omitted, the default value is false.
startIndex	Yes	Integer	Specifies the index of the first matching result that should be included in the result set (0-n ... zero based). This is used for pagination.
itemsPerPage	Yes	Integer	Number of results to display.

The `searchSes` method returns:

- Collection of SearchServiceDCRows objects
- Collection of SearchServiceDCRefiner objects

45.3.5.1.1 SearchServiceDCRows

- author
- comments
- createDate
- description
- iconPath
- language
- largeIconPath
- lastModifiedDate
- resourceId
- scopeGuid
- serviceId
- size
- tagWords
- title
- type
- urlSearchServiceDCRefiner

45.3.5.1.2 SearchServiceDCRefiner

element

45.3.5.1.3 SearchServiceDCRefinement

- keywords
- scopeGuid
- serviceId
- Collection of predicates

45.3.5.2 Integrating the Search Data Control

To use the Search data control:

1. In JDeveloper, create an application with an Oracle SES connection. After the connection is available, the Search Data Control is listed in the Data Controls palette.
2. Drag and drop the `searchSes` method from `SearchServiceDC`.
3. Choose **ADF Parameter Form**, and the Edit Form Fields dialog opens. Click **OK**.
4. Drag the rows accessor, from the `SearchServiceDCResult` return object type, onto the form, and choose **Table - ADF Read-only Table**. Click **OK**.
5. Run the page, enter appropriate values. For example:
   - `keywords`: any search term
   - `startIndex`: 0
   - `itemsPerPage`: 10

For information about adding data controls to your application, see Section 4.1.2, "Understanding WebCenter Portal APIs."

45.3.6 Building Adapters for Search

You can use search adapters to add other sources to your search results. WebCenter Portal automatically discovers these search adapters and consolidates them in formulating search results in your application. Subsequently, when you expose your custom component to search in your application, it is included in the federated search.

This section describes how to extend WebCenter Portal's search through search adapters. It includes the following topics:

- Section 45.3.6.1, "How to Add a Search Source"
- Section 45.3.6.2, "How to Register a Custom Adapter"
- Section 45.3.6.3, "Search Adapter Attributes"
- Section 45.3.6.4, "What Happens at Runtime"

45.3.6.1 How to Add a Search Source

To add a new search source, you must create Java classes for the new source to manage the incoming queries and return search results. After you add the necessary Java classes to your application, you must register them with search.

When performing a search, the search framework calls `QueryManager.createRowQueryHandler` with a query object and a `List<QName>` that describes the columns sought. In return, the framework receives a `QueryHandler<Row>`.

A `QueryHandler` can be a `QueryFederator` or a `QueryExecutor`. A `QueryFederator` is just a collection of other `QueryHandlers`. With the `QueryFederator`, the framework can get a list of the child `QueryHandlers` and keep recursing until all `QueryExecutors` are found.

The framework calls the `execute` method on the `QueryExecutor` to get a `QueryResult<Row>`, which is an extension of `java.util.Iterator<Row>` that iterates and retrieves rows of results.

One possible implementation would be to create these classes:

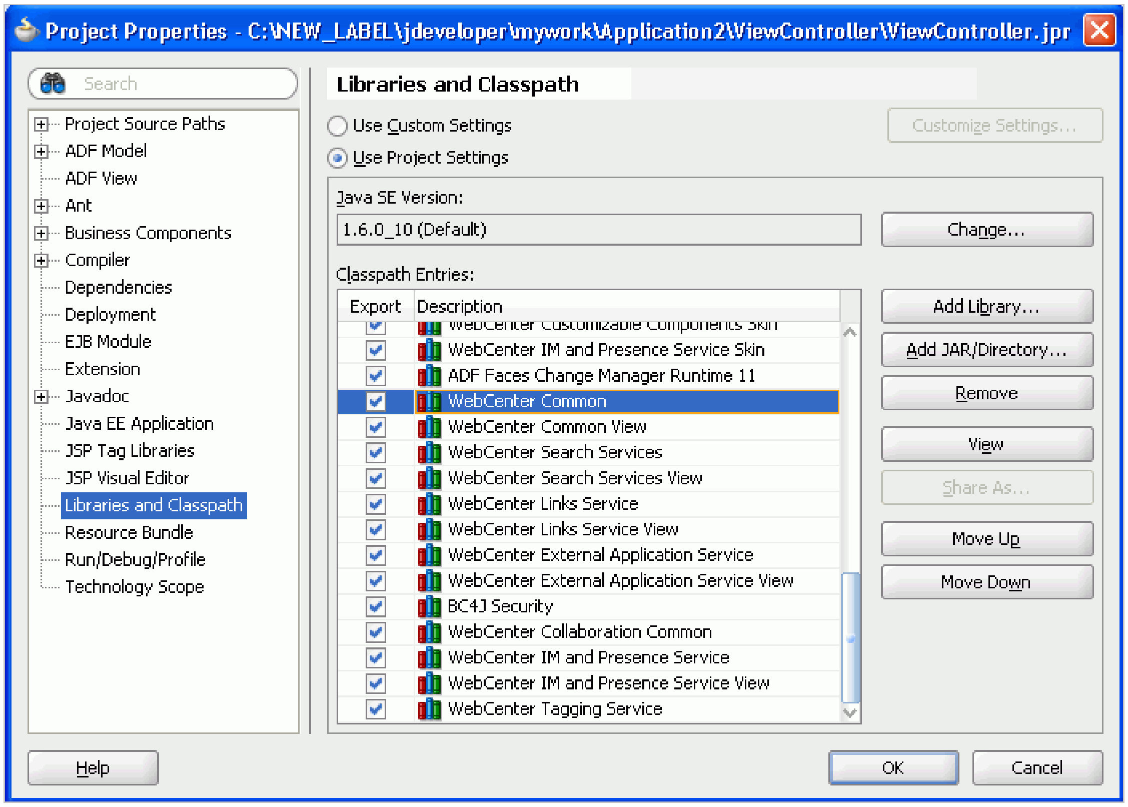
- `SampleQueryManager` ...
- `SampleRowQueryExecutor` ...
- `SampleRowQueryResult` ...
- `SampleRow` ...

Note: Oracle SES is set as the default search platform. For this sample code to work with WebCenter Portal's live search adapters instead, you must edit `crawl-properties` in `adf-config.xml`. For details, see Section 45.3.2, "Configuring Search with WebCenter Portal's Live Search."

To add a new search source with a similar query manager:

1. In Oracle JDeveloper, open the application in which to add the search source.
2. Confirm that the WebCenter Common library is included in your project:
   a. In the Application Navigator, right-click your project and select **Project Properties** and then **Libraries and Classpath**.
   b. If the **WebCenter Common** library is not included, as shown in Figure 45–6, then click **Add Library** and select it.

Figure 45–6 WebCenter Common Library



Project Properties - C:\NEW_LABEL\jdeveloper\mywork\Application2\ViewController\ViewController.jpr

Search

- Project Source Paths
- ADF Model
- ADF View
- Ant
- Business Components
- Compiler
- Dependencies
- Deployment
- EJB Module
- Extension
- Javadoc
- Java EE Application
- JSP Tag Libraries
- JSP Visual Editor
- Libraries and Classpath
- Resource Bundle
- Run/Debug/Profile
- Technology Scope

Libraries and Classpath

○ Use Custom Settings

● Use Project Settings

Java SE Version: 1.6.0_10 (Default)

Classpath Entries:

Export	Description
☑	WebCenter Customizable Components Skin
☑	WebCenter IM and Presence Service Skin
☑	ADF Faces Change Manager Runtime 11
☑	WebCenter Common
☑	WebCenter Common View
☑	WebCenter Search Services
☑	WebCenter Search Services View
☑	WebCenter Links Service
☑	WebCenter Links Service View
☑	WebCenter External Application Service
☑	WebCenter External Application Service View
☑	BC4J Security
☑	WebCenter Collaboration Common
☑	WebCenter IM and Presence Service
☑	WebCenter IM and Presence Service View
☑	WebCenter Tagging Service

c. Click **OK**.

3. Create a class called `SampleQueryManager.java` (Example 45–5).

Example 45–5 SampleQueryManager.java

```
package mycompany.myproduct.myapp.mycomponent.query;
import java.util.List;
import oracle.webcenter.search.QName;
import oracle.webcenter.search.Query;
import oracle.webcenter.search.QueryExecutor;
import oracle.webcenter.search.QueryManager;
import oracle.webcenter.search.Row;
public class SampleQueryManager
  implements QueryManager
{
  public SampleQueryManager()
  {
  }
  public QueryExecutor<Row> createRowQueryHandler(Query query,
                                                List<QName> columns)
  {
    return new SampleRowQueryExecutor(query, columns);
  }
}
```

4. Create a class called `SampleRowQueryExecutor.java` (Example 45–6).

Example 45–6 SampleRowQueryExecutor.java

```
package mycompany.myproduct.myapp.mycomponent.query;
```

```
import java.text.DateFormat;
import java.text.ParseException;
import java.text.SimpleDateFormat;
import java.util.ArrayList;
import java.util.HashMap;
import java.util.Iterator;
import java.util.List;
import java.util.Map;
import static oracle.webcenter.search.AttributeConstants.DCMI_EXTENT;
import static oracle.webcenter.search.AttributeConstants.DCMI_MODIFIED;
import static oracle.webcenter.search.AttributeConstants.DCMI_AUTHOR;
import static oracle.webcenter.search.AttributeConstants.DCMI_TITLE;
import static oracle.webcenter.search.AttributeConstants.DCMI_URI;
import static oracle.webcenter.search.AttributeConstants.DCMI_IDENTIFIER;
import static oracle.webcenter.search.AttributeConstants.WPSAPI_ICON_PATH;
import oracle.webcenter.search.QName;
import oracle.webcenter.search.Query;
import oracle.webcenter.search.QueryExecutor;
import oracle.webcenter.search.QueryHandler;
import oracle.webcenter.search.QueryResult;
import oracle.webcenter.search.Row;
public class SampleRowQueryExecutor
  implements QueryExecutor<Row>
{
  private static final int PRESET_ESTIMATED_RESULT_COUNT = 10;
  private static final int PRESET_VALUES_BATCH_SIZE = 5;
  private static final int MAX_RESULT_LIMIT = 100;
  private int m_resultStart;
  private int m_resultLimit;
  private Query m_query;
  private List<QName> m_columns;
  private Map<String, String> m_properties;
  public SampleRowQueryExecutor(Query query, List<QName> columns)
  {
    m_query = query;
    m_columns = columns;
    m_properties = new HashMap<String, String>();
    // In actuality you may want to make sure this string is translatable
    m_properties.put(QueryHandler.TITLE, "Sample");
  }
  /**
   * Create several rows for "batchRepeat" times.
   */
  private static void createRows(List<Row> rows, int batchRepeat)
  {
    while (batchRepeat-- > 0)
    {
      rows.add(new SampleRow("23847", "Initial Sorting of Tables",
                             "Bar", "2006-06-08", 5120));
      rows.add(new SampleRow("4827445", "Support for facelets?",
                             "Foo", "2006-04-17", 1400000));
      rows.add(new SampleRow("952787", "For Thomas Kincade's validation demo",
                             "Tiger", "2006-01-09", 1300000));
      rows.add(new SampleRow("4394588", "Page not showing in WYSIWYG fashion",
                             "Ken Swartz", "2006-04-27", 3000));
      rows.add(new SampleRow("3920", "Tree table",
                             "Scott", "2006-03-24", 1200));
    }
  }
  /**
```

```
     * Instead of doing a query execution here,
     * just create a bunch of rows.
     */
    public QueryResult<Row> execute()
    {
      List<Row> rows = new ArrayList<Row>();
      // To hit a certain count here but not go over the max
      int realLimit = Math.min(MAX_RESULT_LIMIT, m_resultLimit);
      createRows(rows, (realLimit / PRESET_VALUES_BATCH_SIZE));
      // Create the QueryResult
      QueryResult<Row> ret = new SampleRowQueryResult(rows.iterator());
      ret.getProperties().put(QueryResult.ESTIMATED_RESULT_COUNT,
                              Integer.toString(PRESET_ESTIMATED_RESULT_COUNT));
      return ret;
    }
    /**
     * Remember the result start.
     */
    public void setResultStart(int resultStart)
    {
      m_resultStart = resultStart;
    }
    /**
     * Store away the result limit to use in the execute
     * to only get that number of results back.
     */
    public void setResultLimit(int resultLimit)
    {
      m_resultLimit = resultLimit;
    }
    /**
     * Expose our properties map containing our title.
     */
    public Map<String, String> getProperties()
    {
      return m_properties;
    }
  }
```

5. Create a class called `SampleRowQueryResult.java` (Example 45–7).

Example 45–7 SampleRowQueryResult.java

```
package mycompany.myproduct.myapp.mycomponent.query;
import java.util.Iterator;
import oracle.webcenter.search.util.WrapperQueryResult;
import oracle.webcenter.search.Row;
public class SampleRowQueryResult extends WrapperQueryResult<Row>
{
  public SampleRowQueryResult(Iterator<Row> rows)
  {
    super(rows);
  }
}
```

6. Create a class called `SampleRow.java` (Example 45–8).

Example 45–8 SampleRow.java

```
package mycompany.myproduct.myapp.mycomponent.query;
```

```
import java.text.DateFormat;
import java.text.ParseException;
import java.text.SimpleDateFormat;
import java.util.Calendar;
import java.util.Date;
import java.util.HashMap;
import java.util.Iterator;
import java.util.Map;
import oracle.webcenter.search.QName;
import oracle.webcenter.search.Row;
import static oracle.webcenter.search.AttributeConstants.DCMI_EXTENT;
import static oracle.webcenter.search.AttributeConstants.DCMI_MODIFIED;
import static oracle.webcenter.search.AttributeConstants.DCMI_AUTHOR;
import static oracle.webcenter.search.AttributeConstants.DCMI_TITLE;
import static oracle.webcenter.search.AttributeConstants.DCMI_URI;
import static oracle.webcenter.search.AttributeConstants.DCMI_IDENTIFIER;
import static oracle.webcenter.search.AttributeConstants.WPSAPI_ICON_PATH;
public class SampleRow implements Row
{
  private Map<QName, Object> m_storage = new HashMap<QName, Object>();
  private DateFormat m_dateFormat = new SimpleDateFormat("yyyy-MM-dd");
  SampleRow(String id, String title,
            String author, String lastModified,
            int size)
  {
    m_storage.put(DCMI_IDENTIFIER, id);
    // Only if you have an external URL to go to
    // m_storage.put(DCMI_URI, "http://my.external.url");
    m_storage.put(DCMI_TITLE, title);
    m_storage.put(DCMI_AUTHOR, author);
    // The below path points to a path accessible in the classpath to an icon
    m_storage.put(WPSAPI_ICON_PATH, "/adf/webcenter/search_qualifier.png");
    try
    {
      Date date = m_dateFormat.parse(lastModified);
      Calendar cal = Calendar.getInstance();
      cal.setTime(date);
      m_storage.put(DCMI_MODIFIED, cal);
    }
    catch (ParseException e)
    {
      e.printStackTrace();
    }
    m_storage.put(DCMI_EXTENT, new Long(size));
  }
  public Object getObject(QName columnName)
  {
    return m_storage.get(columnName);
  }
  public Iterator<QName> getColumns()
  {
    return m_storage.keySet().iterator();
  }
}
```

7. Create a class called `CustomScopeAPIProvider.java`.

   This enables the custom search service, which must be provisioned by implementing the Service Provider Interface (SPI) - ServiceScopeAPI as shown in Example 45–9.

Example 45–9   CustomScopeAPIProvider.java

```
package mycompany.myproduct.myapp.mycomponent.query;

import java.util.Collection;
import oracle.webcenter.framework.service.Scope;
import oracle.webcenter.command.CommandException;
import oracle.webcenter.command.spi.ServiceScopeAPI;
import oracle.webcenter.command.CopyOptions;


public class CustomScopeAPIProvider implements ServiceScopeAPI
{
  /**
   * @inheritDoc
   */
  public void provision(Scope scope, String scopeDisplayName)
    throws CommandException
  {
  }

  /**
   * @inheritDoc
   */
  public void unprovision(Scope scope) throws CommandException
  {
  }

  /**
   * @inheritDoc
   */
  public boolean isProvisioned(Scope scope) throws CommandException
  {
    return true;
  }

  /**
   * @inheritDoc
   */
  public void copy(Scope sourceScope, Scope targetScope, CopyOptions options)
    throws CommandException
  {
  }

  /**
   * @inheritDoc
   */
  public void rename(Scope source, Scope target) throws CommandException
  {
  }

  /**
   * @inheritDoc
   */
  public void setReadOnly(Scope scope, boolean readOnly) throws
CommandException
  {
  }

  /**
   * @inheritDoc
   */
  public boolean isReadOnly(Scope scope) throws CommandException
  {
    return false;
  }

  /**
   * @inheritDoc
   */
  public boolean isConfigured()
  {
    return true;
  }

  /**
   * @inheritDoc
   */
  public void updateSecurityHierarchy(Scope scope, Collection<Scope> children)
throws
CommandException
  {
  }
}
```

45.3.6.2 How to Register a Custom Adapter

To register your query manager with search, you must edit the `service-definition.xml` file. The `SampleQueryManager` line exposes the custom adapter's query manager implementation to search so that the custom adapter is included with any search user interface. To register the `ServiceScopeAPI` class (`CustomScopeAPIProvider.java`) implemented in Example 45–9, you must add a `<command-definition>` entry with the class name that implements it as the scope-class as shown in Example 45–10.

Example 45–10 Sample Query Manager Entry in service-definition.xml

```
<service-definition version="11.1.1.0.0" id="com.oracle.portal.sample">
  <resource-view taskFlowId="/WEB-INF/search-viewer-tf.xml#search-view"/>
  <name>Sample_Search</name>
  <description>Sample Search</description>
  <search-definition xmlns="http://xmlns.oracle.com/webcenter/search"
   version="11.1.1.0.0" id="com.oracle.portal.sample">

<query-manager-class>com.oracle.portal.sample.search.SampleQueryManager</query
-manager-class>
  </search-definition>
  <command-definition xmlns="http://xmlns.oracle.com/webcenter/command"
   version="11.1.1.0.0" id="com.oracle.portal.sample">

<scope-class>com.oracle.portal.sample.search.CustomScopeAPIProvider</scope-class>
  </command-definition>
</service-definition>
```

For more information about the `resource-view` tag (and WebCenter Portal's Resource Action Handling framework), see Section 4.3, "Customizing How Services Render Resources."

45.3.6.3 Search Adapter Attributes

This section describes the attributes available for searching. It includes the following topics:

- Section 45.3.6.3.1, "Searchable Attributes"
- Section 45.3.6.3.2, "Keywords"
- Section 45.3.6.3.3, "Date Condition"
- Section 45.3.6.3.4, "Complex Date Condition"
- Section 45.3.6.3.5, "Person Condition"
- Section 45.3.6.3.6, "Complex Person Condition"
- Section 45.3.6.3.7, "Access"
- Section 45.3.6.3.8, "Selectable Attributes"

45.3.6.3.1 Searchable Attributes WebCenter Portal's search user interface exposes searches based on three fields: keywords, date, and person. Each service, in its own search implementation, honors these fields to the best of its capabilities. At minimum, it supports the keywords field. When you define your own search adapter, you must honor these fields to the best of your adapter's capabilities, as described in Section 45.3.6.3.8, "Selectable Attributes."

45.3.6.3.2 Keywords By default, the keyword field is in `oracle.webcenter.search.TextPredicate`. The field can comprise multiple words, with the service determining how to interpret multiple words. Search does not tokenize before the call comes to the service, but here are some guidelines:

- If two or more tokens are enclosed within quotes, then they should be interpreted as one word.
- Unless the `OR` operator is explicitly set, it is assumed that the default conjunction among the words in the keywords field is `AND`.

45.3.6.3.3 Date Condition For search to support filtering of query results by last modified date, the service implementation of the WPSAPI must support the use of `oracle.webcenter.search.AttributePredicate`, accessible from the query object, that uses `oracle.webcenter.search.AttributeConstants.DCMI_MODIFIED`. The supported comparators must include the following:

- `oracle.webcenter.search.ComparatorConstants.GREATER_THAN`
- `oracle.webcenter.search.ComparatorConstants.GREATER_THAN_OR_EQUALS`

They may also include the following:

- `oracle.webcenter.search.ComparatorConstants.EQUALS`
- `oracle.webcenter.search.ComparatorConstants.NOT_EQUALS`
- `oracle.webcenter.search.ComparatorConstants.LESS_THAN`
- `oracle.webcenter.search.ComparatorConstants.LESS_THAN_OR_EQUALS`

The literals for comparison should be of type `java.util.Calendar`.

45.3.6.3.4 Complex Date Condition You can use the `BETWEEN` clause for dates. The complex date condition, instead of being a simple `AttributePredicate`, is a `ComplexPredicate` that contains one `GREATER_THAN` `AttributePredicate` and one `LESS_THAN` `AttributePredicate` with an `AND` conjunction operator. This

ComplexPredicate must apply the AND operator with the rest of the fields (that is, keywords and person).

To differentiate between this case and the default case, service authors must check on the type of the predicate that is meant for the date condition. If it is an AttributePredicate, then it is the default case. If it is a ComplexPredicate, then it is a special case.

45.3.6.3.5 Person Condition For search to support filtering of query results by person, the service implementation of the WPSAPI must support oracle.webcenter.search.AttributePredicate, accessible from the query object, that uses oracle.webcenter.search.AttributeConstants.WPSAPI_MODIFIER.

The comparators supported must include the following:

- oracle.webcenter.search.ComparatorConstants.EQUALS
- oracle.webcenter.search.ComparatorConstants.CONTAINS
- oracle.webcenter.search.ComparatorConstants.STARTS_WITH
- oracle.webcenter.search.ComparatorConstants.ENDS_WITH

The literals for comparison should be of type java.lang.String.

45.3.6.3.6 Complex Person Condition Service authors must check on the type of predicate that is meant for the person condition. An AttributePredicate is the default case.

45.3.6.3.7 Access Search (as a caller) expects that the query's getPredicate() method likely returns an oracle.webcenter.search.ComplexPredicate that joins an oracle.webcenter.search.TextPredicate holding the keyword, and an oracle.webcenter.search.ComplexPredicate holding the date condition, and an oracle.webcenter.search.AttributePredicate holding the person condition.

45.3.6.3.8 Selectable Attributes The following selectable attributes/columns should be supported by your search adapter in its search implementation:

- **Title** (Required)

  For each resource returned, the search user interface can display the title column, if provided. It is strongly recommended that the title column comes with the QName AttributeConstants.DCMI_TITLE.

- **Resource ID** (Required)

  For resources to communicate a unique identifier that allows search to render a link to navigate to the resource view (or any declared views) of the service, the column with the name oracle.webcenter.search.AttributeConstants.DCMI_IDENTIFIER must be returned as a column accessible from a row within the QueryResult<Row>.

  Search extracts the DCMI_IDENTIFIER column and feeds it into the resource viewer as the value of the resourceId parameter when the link is clicked.

  If your resource view (or any declared views) requires multiple columns in the primary key, then try to bundle all of them into a composite string value for the oracle.webcenter.search.AttributeConstants.DCMI_IDENTIFIER column. Search treats that opaquely and passes it to your resource view, within which it may deconstruct the string into the various parts of the primary key.

- **Resource Type**

For each resource returned, the search user interface can display the type column, if provided. The type column comes with the QName `AttributeConstants.DCMI_TYPE`. If the `DCMI_TYPE` column is not found, then the value of the `DCMI_FORMAT` column is used in its place. In your resource viewer, you can make use of the resource type to aid in the rendering of a resource.

- **Resource URL** (in place of Resource ID)

  In the absence of an `oracle.webcenter.search.AttributeConstants.DCMI_IDENTIFIER` column, WebCenter Portal's search constructs the link from the value of the column specified by `oracle.webcenter.search.AttributeConstants.DCMI_URI`. With absolute URLs, the `DCMI_URI` can launch a link from the search results to the URL.

  This allows for components, such as documents and pages, to invoke the browser plug-in to render various results link targets, instead of invoking a resource view.

- **Last Modified Date**

  For each resource returned, the search user interface can display the last modified date column, if provided. To mirror the searchable attribute of the last modified date, it is important that users can see the last modified date as a returned column in the search result.

  For most users, the last modified date is more relevant than the creation date. To have better consistency between the searchable attributes and the selectable attributes (so that users know what date to search with after seeing some values in the columns), it is strongly recommended that service authors return `AttributeConstants.DCMI_MODIFIED` rather than `AttributeConstants.DCMI_CREATED`. The last modified date is of type `java.util.Calendar`.

- **Author**

  For each resource returned, the search user interface can display the author and last modified by column, if provided. The search user interface combines them in the same column as a list of contributors for the found resource. The QNames to use are `AttributeConstants.DCMI_AUTHOR` and `AttributeConstants.WPSAPI_MODIFIED`, respectively. The author is of type `java.lang.String`.

- **Icon**

  For each resource returned, the search user interface can display the icon column, if provided. The icon column comes with the QName `AttributeConstants.WPSAPI_ICON_PATH` and corresponds to a valid path to an icon file that is accessible in the class path. The icon path is of type `java.lang.String`.

- **Size**

  For each resource returned, the search user interface can display the size column, if provided. The size column comes with the QName `AttributeConstants.DCMI_EXTENT` and corresponds to the size of the resource found. The size is of type `java.lang.Number`.

45.3.6.4 What Happens at Runtime

When you perform a search from the main view or toolbar, it should seamlessly include your new search source. For testing purposes, be sure to enter criteria that yields a result in your newly-added search source.

WebCenter Portal's search invokes a resource viewer using the Resource Action Handling framework. For information about registering a resource viewer to allow custom components to be found using search, see Section 4.3, "Customizing How Services Render Resources."

45.3.7 Customizing the Search UI Without WebCenter Portal's Search APIs

You can develop a custom search user interface in an application without WebCenter Portal's search API, but still with Oracle SES as the application's search engine by using the Oracle SES Web Service Query API to do search functions. Also, action handling for search results can be managed with WebCenter Portal's Resource Action Handling framework, so that when an application resource (for example, a document) is clicked in the search results, the resource is shown in the viewer of the resource (for example, the Documents resource viewer). Moreover, if the application uses WebCenter Portal Navigation, then certain resource types can be shown in the navigation node of the resource.

This section describes the required steps to enable Resource Action Handling for handling search result action.

1. Use the Document Service Manager provided by WebCenter Portal to crawl documents.

   > **See Also:** "Setting Up Oracle SES to Search Documents" section in *Administering Oracle WebCenter Portal*

   The Document Services Manager creates an attribute called wc_url in the Oracle SES index for each document. The value of the wc_url attribute is a URL that goes to the Resource Action Handling module of the application. The URL uses the value of the WebCenter URL Prefix parameter in the Document Service instance as the prefix.

   Set the parameter value as the host and port where the application is deployed, plus the context root; for example:

   ```
   http://myhost:8888/DocumentsServer
   ```

2. Use the wc_url attribute for action handling in the search UI.

   Typically, the search UI uses the URL attribute for action handling. To use Resource Action Handling for action handling of search results of the Documents resource type, use the wc_url attribute. Note that only search results with the Documents resource type have the wc_url attribute. Therefore, this must be done conditionally in the search UI code.

3. Specify WebCenter Portal's Resource Action Handling class for click action of search result.

   When a search result is clicked, the resource is rendered in the resource viewer of the resource, if available. The current search results page is over-written. Use Resource Action Framework to change this behavior.

   Update the adf-config.xml file of the application to specify the Resource Action Handling class to use.

   Example 45–11 shows how to use PopUpResourceActionViewHandler to show the resource in a popup window when a search result is clicked.

Example 45–11 Specifying PopUp Behavior Handler

```
xmlns:wpsC="http://xmlns.oracle.com/webcenter/framework/service"
  <wpsC:adf-service-config
xmlns="http://xmlns.oracle.com/webcenter/framework/service">
```

```
    <resource-handler
class="oracle.webcenter.framework.resource.view.PopUpResourceActionHandler"/>
  </wpsC:adf-service-config>
```

Example 45–12 shows how to use `NavigationResourceActionHandler` to show the resource in the navigation node of the resource when a search result is clicked.

Example 45–12 Specifying the Navigation Handler

```
xmlns:wpsC="http://xmlns.oracle.com/webcenter/framework/service"
  <wpsC:adf-service-config
xmlns="http://xmlns.oracle.com/webcenter/framework/service">
    <resource-handler
class="oracle.webcenter.portalframework.sitestructure.handler.NavigationResourceAc
tionHandler"/>
  </wpsC:adf-service-config>
```

45.3.8 Troubleshooting Search

This section describes common problems and solutions for search.

Problem

There is a set timeout for querying each component. If a particular component does not return search results in the allotted time, then it times out. Announcements and discussions are susceptible to timeouts. Pages and portals also could have timeouts from search execution.

Solution

To improve performance at design time, you can increase the values (in milliseconds) of `timeoutMs` and prepare `TimeoutMs` in `adf-config.xml`. The following is the relevant fragment of `adf-config.xml`, found in the Application Resources panel in the `ADF META-INF` folder:

```
<execution-properties timeoutMs="3000"prepare TimeoutMs="1000"/>
```

At runtime, you can configure timeouts using WLST or Fusion Middleware Control.

46

Integrating the Activity Graph

This chapter describes how to integrate the activity graph with a Portal Framework application at design time.

This chapter includes the following topics:

- Section 46.1, "Introduction to the Activity Graph"
- Section 46.2, "Basic Configuration for the Activity Graph"
- Section 46.3, "Advanced Information for the Activity Graph"
- Section 46.4, "Extending the Activity Graph"
- Section 46.5, "Troubleshooting the Activity Graph"

For more information about managing and using the activity graph, see:

- "Managing Activity Graph" chapter in *Administering Oracle WebCenter Portal*
- "Adding Activity Graphs and Recommendations to a Portal" chapter in *Building Portals with Oracle WebCenter Portal*
- "Exploring Recommendations and Content" chapter in *Using Oracle WebCenter Portal*

46.1 Introduction to the Activity Graph

Users today contribute content at unprecedented rates. The activity graph provides seamlessly integrated information retrieval, leveraging collective intelligence to benefit search and social applications.

This section provides an overview of the activity graph, its task flows and the underlying architecture. It includes the following topics:

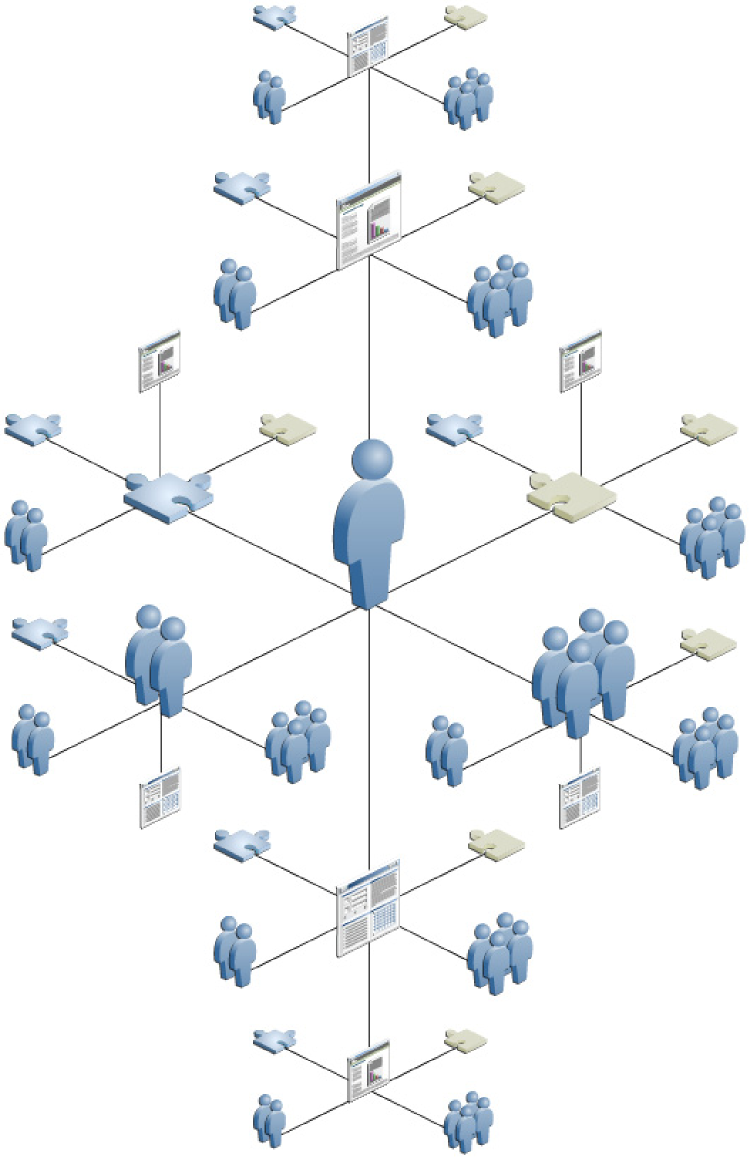
- Section 46.1.1, "Understanding the Activity Graph"
- Section 46.1.2, "Requirements for the Activity Graph"
- Section 46.1.3, "What Happens at Runtime"

46.1.1 Understanding the Activity Graph

The activity graph provides suggestions of people that a user may be interested in connecting with, based on existing connections and shared interaction with objects within the application. It also directs users to portals or content that may be of interest, based on ranking calculations.

The activity graph presents these suggestions based on data gathered and analyzed by the activity graph engine. The activity graph engine provides a central repository for actions that are collected by enterprise applications. Thinking in terms of a mathematical graph, application users and the enterprise content with which they interact are *nodes*, and the actions between users and between users and content are *directed edges* (Figure 46–1).

Figure 46–1 An Activity Graph



In an enterprise, this analysis of the interaction of people with other people and with content produces similarity scores for making contextual recommendations based on an extensible set of actions, such as viewing, editing, tagging, and so on. For online vendors, for example, such contextual recommendations help provide a selection of suggested additional purchases. In a social networking environment, recommendations suggest additional connections to make based on the friends of the friends you have already connected with.

The activity graph engine also calculates an activity rank for content and passes this information to Oracle Secure Enterprise Search to enable more relevant content to appear higher in search results. For more information see the "Setting Up Activity

Rank for Oracle Secure Enterprise Search" section in *Administering Oracle WebCenter Portal*.

Node Classes

Activity graph nodes are grouped into classes. The default *node classes* for WebCenter Portal are:

- Users (`WC.user`)
- Portals (`WC.group-space`)
- Documents (`WC.document`)
- Wikis (`WC.wiki-page`)
- Blogs (`WC.blog`)
- Discussion Topics (`WC.topic`)

To extend the activity graph engine to integrate with other applications, you can create custom node classes for the objects in those applications. For more information, see Section 46.4.1, "Defining Custom Node Classes."

Actions

An *action* is a specific type of event. It has a source and a target. For example, if Monty looks at a document, that is a `view` action with Monty as the source and the document as the target. Other actions between users and items include `create`, `like`, and `tag`. Actions can also occur between two users, for example, when two users `connect` with each other.

Table 46–1 lists the default actions defined for WebCenter Portal.

Table 46–1 WebCenter Portal Default Actions

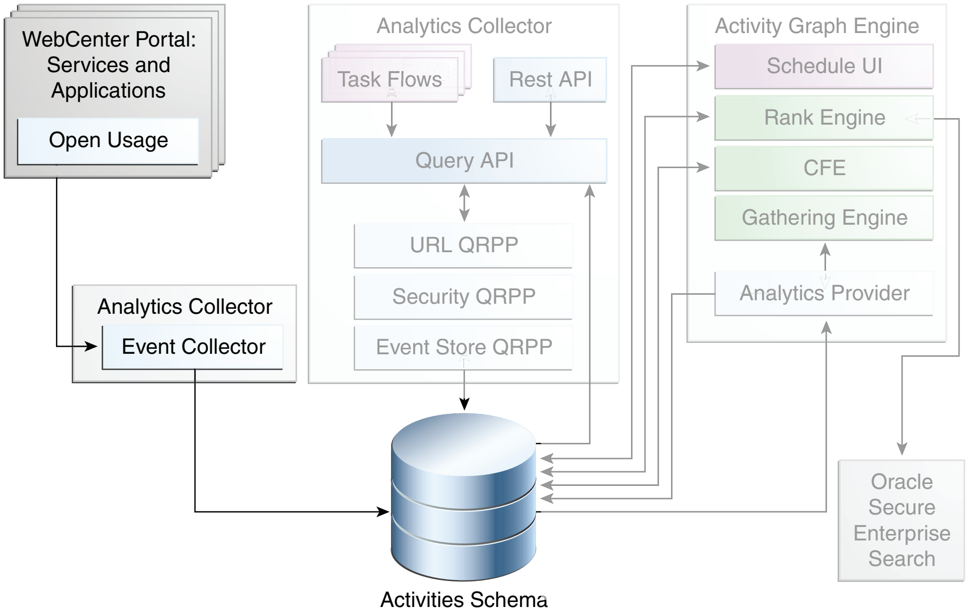
Action URN	Description
`connect`	Connecting with another user
`create`	Creating a portal, document, wiki, blog, topic, or message
`edit`	For all items except portals: ▪ Checking in a new version of document ▪ Editing a wiki or blog ▪ Replying to a topic ▪ Editing a message For portals: ▪ All of the above plus ▪ Creating, editing, or deleting a page ▪ Creating, editing, or deleting a list ▪ Creating, editing, or deleting an event
`comment`	Commenting on a document, wiki, or blog
`like`	Liking a document, wiki, blog, or message
`tag`	Tagging a document, wiki, or blog
`view`	Viewing a portal page, document, wiki, blog entry, or discussion topic
`download`	Downloading a document, wiki, or blog

Table 46–1 (Cont.) WebCenter Portal Default Actions

Action URN	Description
`edit-count`	Checking in a new version of a document, editing a wiki or blog, replying to a topic, editing a message
`view-count`	Viewing a document, wiki, blog, or discussion topic

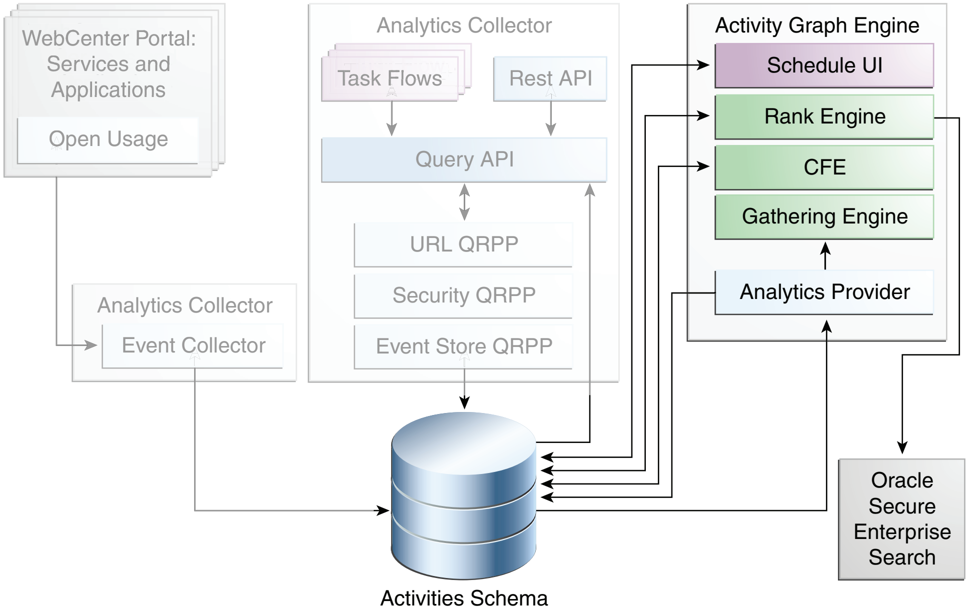
When one of these WebCenter Portal actions occurs, for example, Monty viewing his document, it is picked up by the Events Collector, a component of WebCenter Portal's Analytics, and placed in an event table in the Activities database (Figure 46–2).

Figure 46–2 Data Collection by WebCenter Portal's Analytics



When the activity data gathering process starts, Analytics Activity Provider reads actions from the Analytics event tables and uses a registered set of mappings to generate activities (Figure 46–3). An *activity* is one occurrence of an action and is used to determine *relations*, aggregated occurrences of actions, which are stored in the relation tables. For example, the fact that Monty has viewed this particular document five times is a relation. Information in the relation tables is used to determine recommendations and search ranks.

Figure 46–3 Data Gathering by the Activity Graph Engine



To integrate the activity graph engine with other applications, you can create custom actions for the actions that users perform in those applications. For more information, see Section 46.4.2, "Defining Custom Actions."

Similarity Calculations

The activity graph query API is a Java API, used by the activity graph task flows, that queries the relation tables for recommendations using a recipe (Figure 46–4). A *recipe* is a weighted list of rank or similarity calculations. A *similarity calculation* provides a similarity score (a number between zero and one) that designates how similar two objects are to each other given a specific criterion. The weighting of each calculation determines its significance in deciding the overall recommendation score. Recommendations are ordered by their total recommendation score.

Figure 46–4 Recommendations Calculation by the Activity Graph

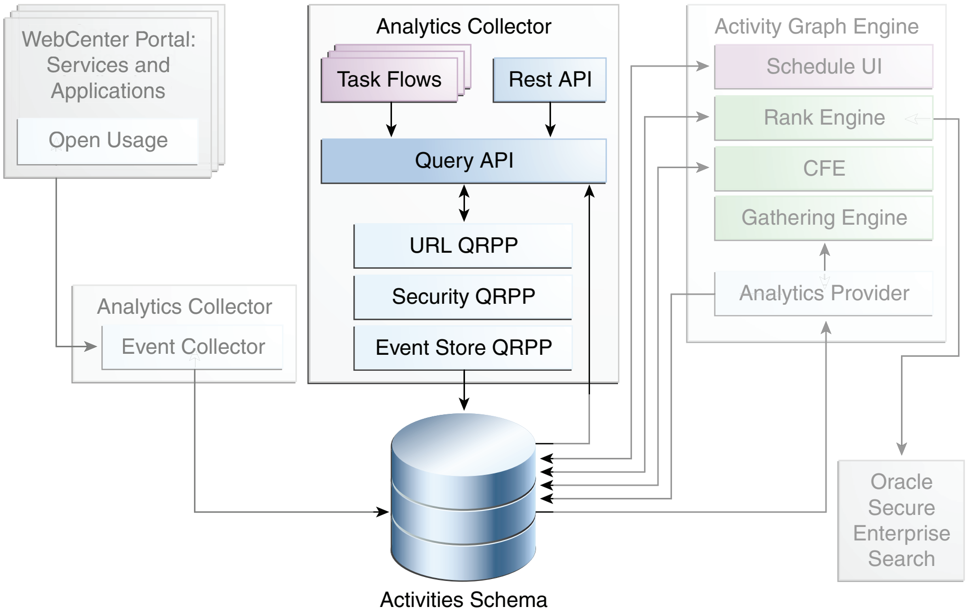


Table 46–2 lists the calculations used by the activity graph task flows (for information about the task flows, see Section 46.2.3.1, "Activity Graph Task Flows").

Table 46–2 Activity Graph Calculations

URN	Applies to	Description	Used by Task Flow
`item-edit`	Documents Wikis Blogs Topics	Users who edited the current item also edited the recommended item	Similar Items
`item-like`	Documents Wikis Blogs Topics	Users who liked the current item also liked the recommended item	Similar Items
`item-comment`	Documents Wikis Blogs Topics	Users who commented on the current item also commented on the recommended item	Similar Items
`item-tag`	Documents Wikis Blogs Topics	Users who tagged the current item also tagged the recommended item	
`item-all`	Documents Wikis Blogs Topics	Users who interacted in any way with the current item, including viewing it, also interacted in some way with the recommended item	Similar Items

Table 46–2 (Cont.) Activity Graph Calculations

URN	Applies to	Description	Used by Task Flow
`gs-edit`	Portals	Users who participated in the current portal also participated in the recommended portal	Similar Portals
`gs-all`	Portals	Users who interacted in any way with the current portal, including viewing pages or content in the portal, also interacted in some way with the recommended portal	Similar Portals
`user-connect`	Users	The current user shares a number of connections with the recommended user	Recommended Connections
`user-edit`	Users	The current user edited some items that the recommended user also edited	Recommended Connections
`user-like`	Users	The current user likes some items that the recommended user also likes	Recommended Connections
`user-comment`	Users	The current user commented some items that the recommended user also commented on	Recommended Connections
`user-tag`	Users	The current user tagged some items that the recommended user also tagged	Recommended Connections
`user-all`	Users	The current user interacted in some way, including viewing, with some items with which the recommended user also interacted	Recommended Connections
`like-rank`	Documents Wikis Blogs	Users liked the recommended current item	Top Items
`activity-rank`	Documents Wikis Blogs	Users interacted in some way with the recommended item	Top Items

You can edit these calculations to change the weightings. You can create additional calculations to integrate the activity graph engine with other applications. For more information, see Section 46.4.3, "Defining Custom Similarity Calculations."

Query Result Post-Processors (QRPPs)

After the initial list of recommendations for a particular object is generated, the results can be filtered into something more appropriate and useful to present to users. This is achieved using Query Result Post-Processors (QRPPs). QRPPs take the current list of recommendation results return a modified list as output. A QRPP may filter out recommendations, for example by removing recommendations for objects that the current user is not permitted to see, or may add or modify result metadata.

WebCenter Portal provides three QRPPs (run in the following order):

- **WebCenter Portal Security QRPP**—Filters out recommendations for objects for which the current user does not have view permissions. The filter uses the same mechanism used by the Search tool for authorization.
- **Analytics Metadata QRPP**—Retrieves additional metadata, for example, description and icon URL, for each recommended object from the Analytics tables.
- **WebCenter Portal URL QRPP**—Retrieves a URL for each recommended object by calling the Resource Action Handler, which is the same WebCenter Portal component used by the search tool. See also Section 4.3, "Customizing How Services Render Resources."

You can create your own QRPPs to further filter the results or to integrate the activity graph engine with other applications. For more information, see Section 46.4.6, "Registering Custom QRPPs."

Activity Graph Task Flows

Recommendations are presented to users via the activity graph task flows. The activity graph provides the following task flows:

- **Recommended Connections**—Recommends users that the current user may want to connect with based on his or her current connections and shared interactions with objects in the application.
- **Similar Portals**—Suggests portals with which users have interacted in a similar way as the current portal.
- **Similar Items**—Suggests items with which users have interacted in a similar way as the current item.
- **Top Items**—Suggests items contributed by the current user that have had the most activity (including views) or with which users have shown the most "likes". In a Portal Framework application, this task flow works only in the Top Contributions mode.

For more information, see Section 46.2.3.1, "Activity Graph Task Flows."

46.1.2 Requirements for the Activity Graph

The activity graph requires that the activity graph engine has been installed and configured. For more information, see *Installation Guide for Oracle WebCenter Portal*.

In addition, in your application you must create a connection to WebCenter Portal's schema and to the Activities database. For more information, see Section 4.2.2, "Setting Up a Database Connection."

The application must be configured to send usage events to the Analytics Event Collector. For more information, see the "Registering an Analytics Collector for Your Application" section in *Administering Oracle WebCenter Portal*.

Before the activity graph can make recommendations, the activity graph engines must have been run at least once to gather the data and calculate similarity scores. For more information see the "Preparing Data for the Activity Graph" section in *Administering Oracle WebCenter Portal*.

The items suggested in the Similar Items task flow, Top Items task flow, and Recommendation data control depend on the tools available in your application. For example, documents are only recommended if the Documents tool is available. For information about making a tool available in your application, refer to the appropriate chapter for that tool. An item can also be filtered out of the recommendations by the Resource Authorizer of the tool that owns the item.

46.1.3 What Happens at Runtime

At runtime, the context is provided for the activity graph task flow:

- For the Recommended Connections task flow, the context is the current user.
- For the Similar Portals task flow, the context is the current portal.
- For the Similar Items task flow, the context is a WebCenter Portal resource, provided through task flow input parameters or through ADF UI events.
- For the Top Items task flow, the context is the profile owner.

The task flow then queries the activity graph database for recommendations through the activity graph query API, using the recipe provided in the task flow parameters. The list of recommendations returned from the query API may be filtered by QRPPs before being listed in the task flow.

For more information about the tool at runtime, see the "Exploring Recommendations and Content" chapter in *Using Oracle WebCenter Portal*.

46.2 Basic Configuration for the Activity Graph

This section describes required steps for adding the activity graph to your application. It includes the following topics:

- Section 46.2.1, "Configuration Roadmap for the Activity Graph"
- Section 46.2.2, "Setting Up Connections for the Activity Graph"
- Section 46.2.3, "Adding the Activity Graph at Design Time"

46.2.1 Configuration Roadmap for the Activity Graph

The flow chart (Figure 46–5) and table (Table 46–3) in this section provide an overview of the prerequisites and tasks required to get the activity graph working in Framework applications.

Figure 46–5 Configuring the Activity Graph for Portal Framework Applications

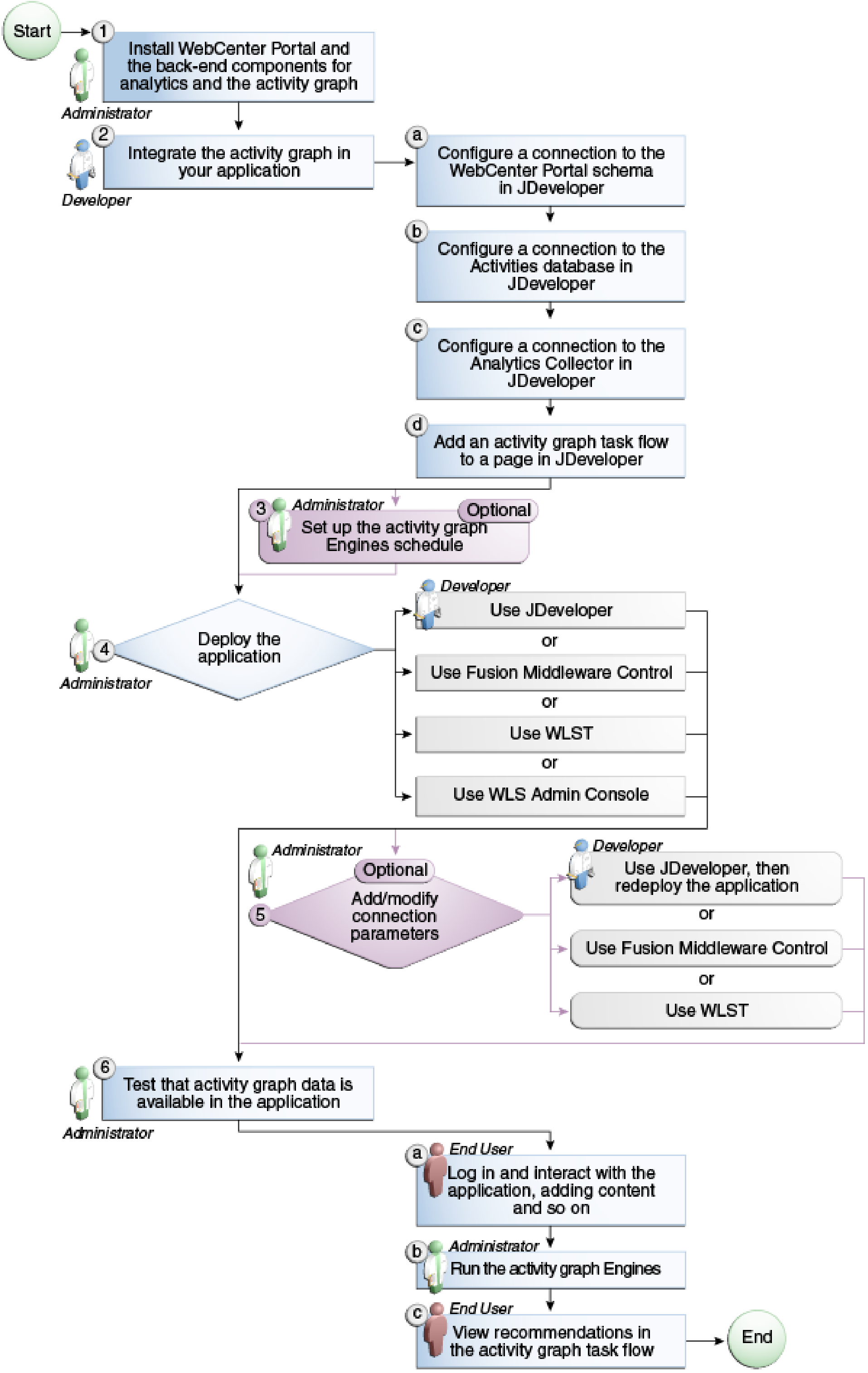

Start
1
Install WebCenter Portal and the back-end components for analytics and the activity graph
Administrator
2
Integrate the activity graph in your application
Developer
a
Configure a connection to the WebCenter Portal schema in JDeveloper
b
Configure a connection to the Activities database in JDeveloper
c
Configure a connection to the Analytics Collector in JDeveloper
d
Add an activity graph task flow to a page in JDeveloper
3
Administrator
Optional
Set up the activity graph Engines schedule
4
Deploy the application
Administrator
Developer
Use JDeveloper
or
Use Fusion Middleware Control
or
Use WLST
or
Use WLS Admin Console
Administrator
Optional
5
Add/modify connection parameters
Developer
Use JDeveloper, then redeploy the application
or
Use Fusion Middleware Control
or
Use WLST
6
Test that activity graph data is available in the application
Administrator
a
End User
Log in and interact with the application, adding content and so on
b
Administrator
Run the activity graph Engines
c
End User
View recommendations in the activity graph task flow
End

Table 46–3 Configuring the Activity Graph for Portal Framework Applications

Actor	Task	Sub-task
Administrator	**1.** Install WebCenter Portal and the back-end components for analytics and the activity graph	
Developer	**2.** Integrate the activity graph in your application	**2.a** Configure a connection to WebCenter Portal's schema in JDeveloper **2.b** Configure a connection to the Activities database in JDeveloper **2.c** Configure a connection to the Analytics Collector in JDeveloper **2.d** Add an activity graph task flow to a page in JDeveloper
Administrator	**3.** (Optional) Set up the activity graph engines schedule	
Developer/ Administrator	**4.** Deploy the application using one of the following tools: ■ JDeveloper (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator) ■ WLS Admin Console (Administrator)	
	5. (Optional) Add/modify connection parameters using one of the following tools: ■ JDeveloper, then redeploy the application (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator)	
End User/ Administrator	**6.** Test that activity graph data is available in the application	**6.a** Log in and interact with the application, for example, by adding content (End User) **6.b** Run the Activity Graph Engines (Administrator) **6.c** View recommendations, for example, see the Recommended Connections on your Profile page (End User)

46.2.2 Setting Up Connections for the Activity Graph

The activity graph requires the following connections:

- **WebCenter Portal schema**—For information about how to create this connection, see Section 4.2.2, "Setting Up a Database Connection."
- **Activities schema**—This connection is used to query recommendations and obtain metadata for results. This is the same connection as used by the Analytics Event Collector and the activity graph engine. If you have an existing connection, then that connection is used. If you do not have an existing connection, then you must create one. For information about how to create this connection, see Section 4.2.2, "Setting Up a Database Connection."
- **Analytics Event Collector**—This connection is used to send usage events to the Analytics Event Collector. For more information, see the "Registering an Analytics Collector for Your Application" section in *Administering Oracle WebCenter Portal*.

Additionally, the items suggested in the Similar Items task flow, the Top Items task flow, and the Recommendation data control depend on the tools and services available in your application. For example, documents are only recommended if the Documents tool is enabled.

- A connection to a content repository is required to see documents, wikis, and blogs.
- A connection to a discussions server is required to see discussions.

> **Note:** While you can set up the connections to back-end servers at design time in JDeveloper, you can later add, delete, or modify connections in your deployed environment using Enterprise Manager Fusion Middleware Control. For more information, see *Administering Oracle WebCenter Portal*.

46.2.3 Adding the Activity Graph at Design Time

This section provides descriptions of the activity graph task flows and steps you through the addition of the activity graph to your application. It includes the following topics:

- Section 46.2.3.1, "Activity Graph Task Flows"
- Section 46.2.3.2, "How to Add Activity Graph Task Flows to a Page"
- Section 46.2.3.3, "How to Modify Activity Graph Task Flow Parameters"
- Section 46.2.3.4, "Activity Graph Task Flows and Task Flow Parameters"

46.2.3.1 Activity Graph Task Flows

This section describes and illustrates the task flows available through the activity graph.

Table 46–4 lists the task flows provided by the activity graph.

Table 46–4 Activity Graph Task Flows

Task Flow	Description
Recommended Connections	This task flow enables viewing and connecting to users whom the activity graph engine has calculated to be similar to the current user. See Section 46.2.3.1.1, "The Recommended Connections Task Flow."
Similar Portals	This task flow enables viewing and interacting with portals that the activity graph engine has calculated to be potentially of interest to the current user. See Section 46.2.3.1.2, "The Similar Portals Task Flow."
Similar Items	This task flow enables viewing and interacting with the WebCenter Portal items that the activity graph engine has calculated to be potentially of interest to the current user. See Section 46.2.3.1.3, "The Similar Items Task Flow."
Top Items	This task flow enables viewing and interacting with the WebCenter Portal items (documents, wikis, or blogs) the activity graph has calculated to be most active in the current portal. See Section 46.2.3.1.4, "The Top Items Task Flow."

46.2.3.1.1 The Recommended Connections Task Flow

The Recommended Connections task flow enables viewing and connecting to users who have been calculated to be similar to the current user.

The Recommended Connections task flow is available by default on each user's Profile page.

Table 46–5 shows the similarity calculations and their weightings used in the default recipe for the Recommended Connections task flow. You can change this recipe by editing the `similarityURNList` task flow binding parameter. For more information, see Section 46.2.3.3, "How to Modify Activity Graph Task Flow Parameters."

Table 46–5 Default Recipe for Recommended Connections

Similarity Calculation	Weight
user-connect	100
user-edit	50
user-like	50
user-comment	10
user-tag	10
user-all	1

The user with the highest overall recommendation score is displayed first in the task flow. For each recommended user, if the highest scoring related similarity calculation has an associated reason string, that string is displayed underneath the user's name and description to provide details for why the user was recommended.

If no reason string is defined for the top similarity function, nothing is displayed. You can edit the similarity calculation reason strings, or provide additional strings. For more information, see the "Customizing Reason Strings for Similarity Calculations" section in *Administering Oracle WebCenter Portal*.

46.2.3.1.2 The Similar Portals Task Flow

The Similar Portals task flow enables viewing and interacting with portals that have been calculated to be potentially of interest to users of the current portal. The suggested portals are not specific to the current user, however the task flow lists only those portals that the current user has permission to see.

Table 46–6 shows the similarity calculations and their weightings used in the default recipe for the Similar Portals task flow. You can change this recipe by editing the `similarityURNList` task flow binding parameter. For more information, see Section 46.2.3.3, "How to Modify Activity Graph Task Flow Parameters."

Table 46–6 Default Recipe for Similar Portals

Similarity Calculation	Weight
gs-edit	10
gs-all	1

The portal with the highest overall recommendation score is displayed first in the task flow. For each recommended portal, if the highest scoring related similarity calculation has an associated reason string, that string is displayed underneath the portal's name and description.

If no reason string is defined for the top similarity calculation, nothing is displayed. You can edit the similarity calculation reason strings, or provide additional strings. For more information, see the "Customizing Reason Strings for Similarity Calculations" section in *Administering Oracle WebCenter Portal*.

46.2.3.1.3 The Similar Items Task Flow The Similar Items task flow enables viewing and interacting with the WebCenter Portal items that the activity graph engine has calculated to be potentially of interest to users of the currently selected item. The suggested items are not specific to the current user, however the task flow lists only those items that the current user has permission to see.

Items of interest may include a wiki, a blog post, a document, or a discussion topic.

The Similar Items task flow determines the context for its recommendations based on items selected on other task flows on the page. This information is provided through task flow input parameters (typically using an EL expression) or through the `WebCenterResourceSelected` ADF UI event. The task flows that determine the context of the Similar Items task flow are:

- Documents tool task flows:
  - Recent Documents
  - Document List Viewer
  - Document Navigator
  - Document Explorer
  - Folder Viewer
  - Document Manager
  - Document Browser

The Similar Items task flow is included in the Document Explorer Related Items pane for files to show items similar to the currently viewed file. For information about how to use this task flow at runtime, see the "Adding Activity Graphs and Recommendations to a Portal" section in *Administering Oracle WebCenter Portal*.

To see recommendations for a discussion topic, edit the Similar Items task flow `resourceID` parameter and enter the resourceID of the discussion topic.

Table 46–7 shows the similarity calculations and their weightings used in the default recipe for the Similar Items task flow. You can change this recipe by editing the `similarityURNList` task flow binding parameter. For more information, see Section 46.2.3.3, "How to Modify Activity Graph Task Flow Parameters."

Table 46–7 Default Recipe for Similar Items

Similarity Calculation	Weight
item-edit	100
item-like	50
item-comment	20
item-tag	10
item-all	1

The item with the highest overall recommendation score is displayed first in the task flow. For each recommended item, if the highest scoring related similarity calculation has an associated reason string, that string is displayed underneath the item's name and description to provide details for why the item was recommended.

If no reason string is defined for the top similarity function, nothing is displayed. You can edit the similarity calculation reason strings, or provide additional strings. For more information, see the "Customizing Reason Strings for Similarity Calculations" section in *Administering Oracle WebCenter Portal*.

46.2.3.1.4 The Top Items Task Flow The Top Items task flow enables viewing and interacting with the items the activity graph has calculated to be active in the current portal. Top items may include documents, wikis, and blogs. The items are not specific to the current user, however the task flow lists only those items that the current user has permission to see.

In a Portal Framework application, this task flow works only in the Top Contributions mode, which enables viewing and interacting with the WebCenter Portal items the activity graph has calculated to be the top contributions by the current user. This is available by default on each user's Profile page.

Table 46–8 shows the rank calculations and their weightings used in the default recipe for the Top Items task flow. You can change this recipe by editing the `recipe` task flow binding parameter. For more information, see Section 46.2.3.3, "How to Modify Activity Graph Task Flow Parameters."

Table 46–8 Default Recipe for Top Items

Top Items Calculation	Weight
activity-rank	50
like-rank	50

46.2.3.2 How to Add Activity Graph Task Flows to a Page

The section describes how to add the Recommended Connections task flow to an application page. The steps provided here are the same for all activity graph task flows.

To add the Recommended Connections task flow to your Portal Framework application:

1. Prepare your application as described in Section 46.1.2, "Requirements for the Activity Graph."
2. Open the page on which you want to add the task flow.
3. In the Resource Palette, open **My Catalogs**, then **WebCenter Portal - Services Catalog**, then the **Task Flows** folder.
4. Drag and drop the Recommended Connections task flow (or whichever activity graph task flow you prefer) onto the JSF (`.jspx`) page.
5. Select **Region** from the resulting context menu.

   You may be prompted to add the activity graph ADF library (`activitygraph-service-view.jar`) to the project. Confirm by clicking **Add Library**. This operation may take a moment to complete.
6. In the Edit Task Flow Binding dialog, enter values for the parameters, or accept the defaults.

   For more information, see Section 46.2.3.4, "Activity Graph Task Flows and Task Flow Parameters."

7. Click **OK**.

   The task flow is added to the page, and the project's libraries are configured to run the task flow.

8. Right-click the page in Design view and choose **Edit Authorization**. Navigate to **Granted to > Select authenticated-users**, and under **Actions**, grant authenticated users `Customize`, `Grant`, `Personalize`, and `View` privileges.

9. Save and run your page.

46.2.3.3 How to Modify Activity Graph Task Flow Parameters

Each activity graph task flow has a set of required and optional task flow binding parameters. These provide a means of capturing information that is useful to the task flow's successful function.

In addition to providing required values for successful task flow rendering, you can use task flow binding parameters to customize the appearance and behavior of a task flow instance. For example, you can use parameter values to determine whether headers and footers are rendered, the number of rows and columns of information to show, whether to apply a filter to returned data, and the like.

You can provide task flow binding parameter values when you drag and drop a task flow onto an application page. Doing so opens the Task Flow Bindings dialog (for more information, see Section 46.2.3.2, "How to Add Activity Graph Task Flows to a Page").

You can also adjust task flow binding parameter values after you have placed a task flow on a page.

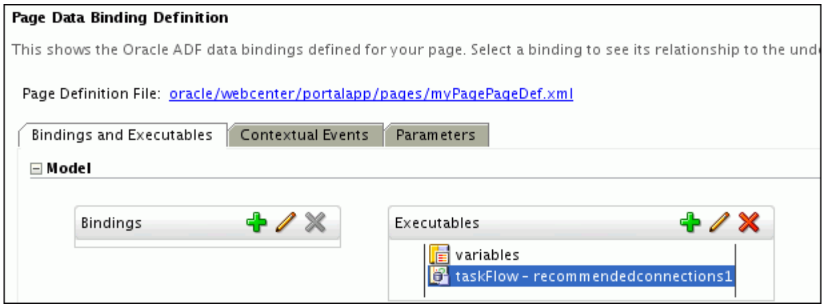
To access the Edit Task Flow Binding dialog:

1. Click the **Bindings** tab at the bottom of the page (next to the **Source** tab) to go to the Bindings view.

2. Under **Executables**, you'll see the task flow you added.

   Figure 46–6 shows an example of a Recommended Connections task flow in the Executables section.

Figure 46–6 Recommended Connections in the Page Data Binding Definition



Page Data Binding Definition

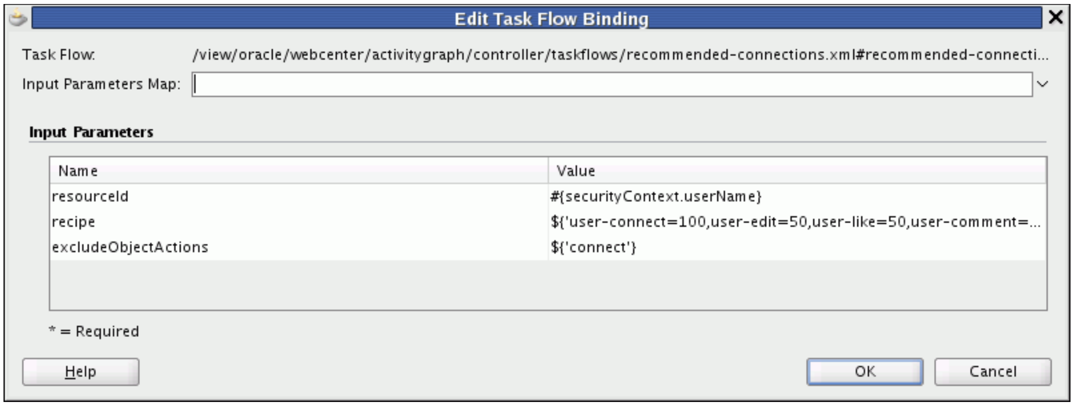
This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relationship to the und

Page Definition File: oracle/webcenter/portalapp/pages/myPagePageDef.xml

3. Select the task flow, and next to the Executables heading, click the **Edit selected element** (pencil) icon.

4. In the Edit Task Flow Binding dialog (Figure 46–7), revise the binding parameter values as required (for more information, see Section 46.2.3.4, "Activity Graph Task Flows and Task Flow Parameters").

Figure 46–7 Edit Task Flow Binding Dialog for Recommended Connections



Task Flow: /view/oracle/webcenter/activitygraph/controller/taskflows/recommended-connections.xml#recommended-connecti...

Input Parameters Map:

Name	Value
resourceId	#{securityContext.userName}
recipe	${'user-connect=100,user-edit=50,user-like=50,user-comment=...
excludeObjectActions	${'connect'}

* = Required

5. When you are finished, click **OK.**
6. Save and run your page to see the results.

46.2.3.4 Activity Graph Task Flows and Task Flow Parameters

Table 46–9 lists and describes task flow binding parameters applicable to the activity graph.

Table 46–9 Activity Graph Task Flow Binding Parameters

Parameter	Task Flows	Description
`classURN`	Similar Items	The node class of the context. By default the information is derived from the selection event.
`classURNRestrictions`	Similar Items Top Items	A comma-separated list of the node classes to include in the recommendations. If non-null, then only objects from the given node classes are included in the recommendations. By default this is empty, meaning that there are no restrictions on which classes of objects may be returned.
`excludeObjectActions`	Recommended Connections Similar Portals Similar Items	A comma-separated list of registered actions. The task flow will not show people, portals, or items on which the logged in user took any of the listed actions. For example, the default value for the Similar Items task flow is create, edit, comment, tag, meaning that users are not recommended items which they themselves created, edited, commented on, or tagged. The default actions are listed in Table 46–1.

Table 46–9 (Cont.) Activity Graph Task Flow Binding Parameters

Parameter	Task Flows	Description
`objectName`	Similar Portals Similar Items	The name of the portal or item to use as a context for recommendations. For portals, the default value is the expression language token for the resource ID of the portal containing the task flow. For items, the value is derived from the selection event.
`recipe`	Recommended Connections Similar Portals Similar Items Top Items	A comma-separated list of registered similarity calculation = weight pairs (or for Top Items, rank calculation = weight pairs). The list determines what recommendations appear and how they are ordered. The default recipes for each task flow are listed in Section 46.2.3.1, "Activity Graph Task Flows."
`resourceId`	Recommended Connections Similar Portals Similar Items	The ID of the person, portal, or item to use as a context for recommendations. For connections, the default value is the expression language token for the currently logged in user. For portals, the default value is the expression language token for the resource ID of the portal containing the task flow. For items, the value is derived from the selection event.
`resourceType`	Similar Items	Used in conjunction with `resourceId` and `serviceId`, as an alternative to `classURN` for identifying the node class of an object. For example `resourceType` is used by the Documents tool to identify whether an object is a wiki, blog, or document.
`serviceId`	Similar Items	Used in conjunction with `resourceId`, and optionally `resourceType`, as an alternative to `classURN` for identifying the node class of an object.
`suppressPopup`	Similar Items Top Items	Determines whether links in the task flow launch content in inline popups (`false`) or in browser windows (`true`). The default value is `false`.

46.3 Advanced Information for the Activity Graph

This section describes advanced features available with the activity graph. It includes the following topics:

- Section 46.3.1, "Using the Recommendation Data Control"
- Section 46.3.2, "Using the Activity Graph REST APIs"

46.3.1 Using the Recommendation Data Control

The activity graph provides a data control that enables you to create your own user interface (task flows) for the tool.

The Recommendation data control exposes two methods to query the activity graph engine for suggestions of similar items and similar users, and one method to record items the user is not interested in.

- `getSimilarObjects`—Returns a list of `SuggestionWrappers` for a given source and similarity calculation, with choices for complex similarity calculation recipes and filtering of node classes and actions.
- `recordNotInterested`—Records that the user is not interested in a given object.

> **Note:** For convenience, the `getSimilarObjects` method takes string arguments instead of the list and map arguments used at the lower levels of the APIs, since that is typically how you would configure them as task flow input parameters.

Typically, there are three things that you need to bind your data control to a method: a `MethodAction`, a `MethodIterator` to iterate through the results of the method, and a `Tree` to pick attributes of the resulting data structure. You can create these manually in a page definition file, or more easily, use the wizards that JDeveloper provides.

To add the Recommendation data control to your project:

1. Add the **Recommendation Data Control** to your project (either by selecting it in the catalog, right-clicking and choosing **Add to Project** or by dragging and dropping it onto a JSP page (`.jspx`) in your project).
2. Drag an ADF Table to a JSP page.
3. When prompted, check the **bind to datasource** checkbox.
4. Navigate to the **Recommendation Data Control** and select the SuggestionWrapper result from the API method you desire. This will automatically create a method action binding and an iterator to the resultant collection.
5. Select the nodes that you want to expose. This will automatically create a Tree to access values in the suggestion.
6. Configure the parameters for the method action, typically these will be expressions that you would have defined as pageFlowScope variables.
   - `classURN`—The URN of the node class of the source for the recommendation.
   - `objectURN`—The URN of the source for the recommendation.
   - `userCredentialClass`—If null, the WebCenter Portal user type is used.
   - `recipe`—A comma-separated list of calculations to be used and their associated weights. For example:
     - For a Similar Items task flow:

       ```
       item-edit=100,item-like=50,item-comment=20,item-tag=10,item-all=1
       ```

     - For a Recommended Connections task flow:

```
user-connect=100,user-edit=50,user-like=50,user-comment=10,user-tag=10,
user-all=1
```

  – For a Similar Portals task flow:

```
gs-edit=10,gs-all=1
```

  – For a Top Items task flow:

```
activity-rank=50,like-rank=50
```

- classURNRestrictionList—A comma-separated list of the node classes to include in the recommendations. If non-null, then only objects from the given node classes are included in the recommendations.
- excludeObjectActionList—A comma-separated list of action URNs to use to filter the results.
- maxResults—The maximum number of recommendations to return

46.3.2 Using the Activity Graph REST APIs

WebCenter Portal provides REST APIs to support the activity graph. Use the activity graph REST APIs to create your own interface for providing recommendations for connections, portals, and items.

This section describes the REST APIs associated with the activity graph. It includes the following topics:

- Section 46.3.2.1, "Activity Graph Entry Point"
- Section 46.3.2.2, "Activity Graph Resource Type Taxonomy"
- Section 46.3.2.3, "Security Considerations"
- Section 46.3.2.4, "Activity Graph Resource Types"

For an introduction to the REST APIs, see Chapter 53, "Using Oracle WebCenter Portal REST APIs."

46.3.2.1 Activity Graph Entry Point

Each REST service has a link element within the Resource Index that provides the entry point for that service. For the activity graph, there are two entry points: one for recommendations and one for items. To find the entry points for the activity graph, find the link element with one of the following resourceTypes:

```
urn:oracle:webcenter:activitygraph:recommendations
urn:oracle:webcenter:activitygraph:items
```

The corresponding href or template element provides the URI entry point. The client sends HTTP requests to this entry point to work with the activity graph.

For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index."

For more information about resource types, see Section 53.5.2.1, "Resource Type."

46.3.2.2 Activity Graph Resource Type Taxonomy

When the client has identified the entry point to use, it can then navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 46.3.2.2, "Activity Graph Resource Type Taxonomy."

The taxonomy for the activity graph is:

```
urn:oracle:webcenter:activitygraph:recommendations
   urn:oracle:webcenter:activitygraph:recommendations:recommendation
urn:oracle:webcenter:activitygraph:items
   urn:oracle:webcenter:activitygraph:items:item
```

46.3.2.3 Security Considerations

For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

46.3.2.4 Activity Graph Resource Types

This section provides you with all the information you need to know about each resource type. It includes the following topics:

- Section 46.3.2.4.1, "urn:oracle:webcenter:activitygraph:recommendations"
- Section 46.3.2.4.2, "urn:oracle:webcenter:activitygraph:recommendations:recommendation"
- Section 46.3.2.4.3, "urn:oracle:webcenter:activitygraph:items"
- Section 46.3.2.4.4, "urn:oracle:webcenter:activitygraph:items:item"

46.3.2.4.1 urn:oracle:webcenter:activitygraph:recommendations Use this resource to identify the URI to use to retrieve (GET) recommended connections, portals, or items based on their similarity to the specified object. The response from a GET operation includes each object in the requested list, and each object includes links used to operate on that object.

Nodes in the activity graph are identified by a combination of node class URN and object URN.

For example, to identify the user, monty, you can specify:

- classURN=WC.user
- objectURN=monty

The nodes provided out of the box are all WebCenter Portal resources (users, documents, portals, and so on) and so have WebCenter Portal service and resource IDs. The activity graph REST APIs provide another way for you to identify these out of the box nodes using the serviceId and objectURN (which contains the resource ID).

For example, to identify the user, monty, you can specify:

- serviceId=oracle.webcenter.people
- objectURN=monty

If a service's objects are further classified by resource type, for example, the Documents tool, you must also specify the resource type.

For example, to identify a particular document, you can specify:

- serviceId=oracle.webcenter.doclib
- resourceType=document
- objectURN=document1

Any new node classes that are created (that is, non-native WebCenter Portal objects) should be identified using node class and object URNs.

Navigation Paths to recommendations

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceIndex
   recommendations
```

Supported Methods for recommendations

The following methods are supported by this resource:

- GET
  - **request - Parameters:** `startIndex`, `itemsPerPage`, `utoken`

    For information about these common parameters, see "Common Request Query Parameters".

    The following additional parameters are available:

    * `classURN`—The node class URN that identifies the type of the object for which you are requesting recommendations. For example `WC.user`, `WC.group-document`.
    * `objectURN`—The object URN that provides a unique identifier for the object for which you are requesting recommendations. For example `monty`, `1000`.
    * `recipe`—A semicolon-separated list of similarity URNs and optional associated weights (indicated by a colon) that is used to determine which objects to recommend. For example, `gs-edit:10;gs-all:1`
    * `classURNRestrictions`—A comma-separated list of types of objects, identified by node class URN, to exclude from the recommendations
    * `excludeObjectActions`—A comma-separated list of actions, identified by action URN, used to exclude objects from the recommendations if the current user has performed that action on the object. For example, if the client is retrieving recommended portals, then the `gs-edit` action could be specified to exclude portals that the current user has edited (since the user already knows about those portals).
    * `serviceId`—The WebCenter Portal service ID that identifies the type of object for which you are requesting recommendations (you can use this instead of `classURN` for out of the box objects).
    * `resourceType`—The WebCenter Portal resource type of the object for which you are requesting recommendations, used in combination with `serviceId` if necessary.
    * `userCredentialClassURN`—The node class URN of the user exercising the REST API. The default value is `WC.user`. If you are integrating the activity graph engine with another application, this may need to be a different node class.
  - **response - body:** 0 or more recommendations

For more information, see Section 53.5.2.5, "Templates."

Resource Types Linked to from recommendations

Table 46–10 lists the resource types that the client can link to from this resource.

Table 46–10 Related Resource Types for recommendations

rel	resourceType
self	urn:oracle:webcenter:activitygraph:recommendations

46.3.2.4.2 urn:oracle:webcenter:activitygraph:recommendations:recommendation The recommendation response contains the recommended objects and the URIs for use in accessing those objects.

Navigation Paths to recommendation

This section shows how the client can navigate through the hypermedia to access the recommendation resource:

```
resourceIndex
   recommendations
      recommendation
```

Read-only Elements for recommendation

Table 46–11 lists the read-only elements for the recommendations resource.

Table 46–11 Read-only Elements for recommendation

Element	Type	Description
`score`	Float	The overall score of this recommendation relative to the other recommendations in the list. This is the weighted sum of the component scores associated with each of the similarity URNs that comprise the recipe and is a floating point number between 0 and 1.
`item`	urn:oracle:webcenter:activitygraph:items:item	The recommended user, item, or portal.
`componentScores`	A list of `componentScore` elements	A list of the component scores associated with the different similarity URNs in the recipe for the recommendation. A component score may have a reason and a link that can be used to retrieve the common items with which the user and the recommended object have interacted.

46.3.2.4.3 urn:oracle:webcenter:activitygraph:items Use this resource to identify the URI to use to retrieve (`GET`) objects that the source object and recommended object have in common. You can use this to determine the reasons why a particular object was recommended. The response from a `GET` operation includes each item in this collection of items, and each item includes links used to operate on that item.

Navigation Paths to items

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceIndex
   items
```

Supported Methods for items

The following methods are supported by this resource:

- GET
  - **request - Parameters:** `startIndex`, `itemsPerPage`, `utoken`

    For information about these common parameters, see "Common Request Query Parameters".

    The following additional parameters are available:

    * `similarityURN`—The URN of the similarity calculation to be used determine which objects are similar to the recommended object. For example `item-tag`, `gs-edit`, `user-connect`
    * `srcClassURN`—The node class URN that identifies the type of the object that was used to request the recommendations. For example `WC.user`, `WC.group-document`.
    * `srcObjectURN`—The URN of the object that was used to request the recommendations. For example `monty`, `1000`.
    * `trgClassURN`—The node class URN that identifies the type of the recommended object
    * `trgObjectURN`—The object URN that provides a unique identifier for the recommended object
    * `userCredentialClassURN`—The node class URN of the user exercising the REST API. The default value is `WC.user`. If you are integrating the activity graph engine with another application, this may need to be a different node class.
  - **response - body:** 1 or more items

For more information, see Section 53.5.2.5, "Templates."

Resource Types Linked to from items

Table 46–12 lists the resource types that the client can link to from this resource.

Table 46–12 Related Resource Types for items

rel	resourceType
self	urn:oracle:webcenter:activitygraph:items

46.3.2.4.4 urn:oracle:webcenter:activitygraph:items:item Use this resource type to identify the URI to use to update (`PUT`) a recommendation to indicate user interest in the recommended object.

Navigation Paths to item

This section shows how the client can navigate through the hypermedia to access the item resource:

```
resourceIndex
   recommendations
      recommendation
         item
resourceIndex
   items
      item
```

Supported Methods for item

The following method is supported by this resource type:

- `PUT`
  - **Request—Body:** item
  - **Response—Body:** item

Writable Elements for item

Table 46–13 lists the writable elements for this resource type.

Table 46–13 Writable Elements for item

Element	Type	Required	Constraints	Description
status	String	Yes	interested not interested	Whether the user is interested in the object

Read-only Elements for item

Table 46–14 lists the read-only elements for this resource type. Not all of these elements are available for all objects.

Table 46–14 Read-only Elements for item

Element	Type	Description
classURN	String	Node class of the object
objectURN	String	Identifier for the object
name	String	Name of the object
description	String	Description of the object
modified	Date	Date on which the object was last updated
modifiedByUser	PersonReference	User information about the user who last updated the object, including GUID, ID, display name, and a link to the profile icon
author	PersonReference	User information about the user who created the object, including GUID, ID, display name, and a link to the profile icon

Resource Types Linked to from item

Table 46–15 lists the resource types that the client can link to from this resource.

Table 46–15 Related Resource Types for item

rel	resourceType
self	urn:oracle:webcenter:activitygraph:items:item
via	`resourceType` of the underlying object

46.4 Extending the Activity Graph

Out of the box, activity graph includes metadata definitions for mapping WebCenter Portal event data to WebCenter Portal's Analytics. This metadata is automatically loaded the first time the activity graph engines application starts.

You can extend activity graph metadata to change how actions are gathered from WebCenter Portal's Analytics by manipulating XML files. The XML files can be exported, edited in a text editor, and then imported.

To update activity graph metadata definitions, you must first export them to a local XML file:

- For information about exporting the activity graph metadata definitions, see the "Exporting Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.
- For information about exporting analytics mapping metadata definitions, see the "Exporting Provider Configuration" section in *Administering Oracle WebCenter Portal*.

After exporting the metadata definitions to an appropriate file, you can then edit the file in an editor of your choice to add your own definitions. When you have made your changes, you must import the metadata file back to the managed server. For information about importing activity graph metadata definition files, see the "Importing Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.

This section includes the following topics:

- Section 46.4.1, "Defining Custom Node Classes"
- Section 46.4.2, "Defining Custom Actions"
- Section 46.4.3, "Defining Custom Similarity Calculations"
- Section 46.4.4, "Defining Custom Rank Calculations"
- Section 46.4.5, "Registering Custom Activity Providers"
- Section 46.4.6, "Registering Custom QRPPs"

46.4.1 Defining Custom Node Classes

The activity graph metadata provide definitions for the node classes that represent WebCenter Portal objects, such as users, portals, and documents. For more information and for a list of the default node classes supported by WebCenter Portal, see "Node Classes".

You can define your own node classes, for other WebCenter Portal objects or for objects from other applications, by exporting the activity graph metadata definitions to an XML file, editing the file, and then importing the metadata back into WebCenter Portal. For example, if you want to integrate your CRM application with activity graph, you could define a node class for service requests.

To define a custom node class:

1. Use the WLST command `exportAGMetadata` to export the activity graph metadata to a local XML file. For more information, see the "Exporting Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.
2. Edit the XML file to define the new node class. For each custom node class, you must specify:

- URN—An attribute of the nodeClass element, this is a string that uniquely identifies the node class
- nodeType—A sub-element that indicates whether objects defined by the node class are items or users. Valid values are Item or User.
- numericURNs—A sub-element that indicates whether or not the URNs of the objects of this class are numeric. This enables you to integrate activity graph more efficiently with applications that use numeric IDs. Valid values are true or false.
- properties—A list of name, value pairs. A node class's properties are available at runtime to provide additional metadata about the class. For example, all out-of-the-box WebCenter Portal objects modeled in activity graph define properties for serviceID and resourceType, which are used by the activity graph task flows to tailor the display of recommendations based on their service and resource type:

  ```
  <properties>
    <property name="oracle.webcenter.resourceType" value="wiki" />
    <property name="oracle.webcenter.serviceID"
  value="oracle.webcenter.doclib" />
  </properties>
  ```

Example 46–1 Node Class Definition

```
<nodeClasses>
  <nodeClass URN="WC.wiki-page">
    <nodeType>Item<nodeType>
    <properties>
      <property name="oracle.webcenter.resourceType" value="wiki" />
      <property name="oracle.webcenter.serviceID" value="oracle.webcenter.doclib"
/>
    </properties>
  </nodeClass>
</nodeClasses>
```

3. Use the WLST command importAGMetadata to import the updated activity graph metadata file to the managed server where the Portal Framework application is deployed. For more information, see the "Importing Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.

46.4.2 Defining Custom Actions

Activity graph includes metadata definitions for the actions that occur in Portal Framework applications. For more information, see "Actions".

You can define your own actions, for WebCenter Portal or for other applications, by exporting the activity graph metadata definitions to an XML file, editing the file, and then importing the metadata back into WebCenter Portal. For example, if you want to integrate your CRM application with activity graph, you could define new actions for opening a service request, assigning a service request to a customer service representative, and closing a service request.

To define a custom action:

1. Use the WLST command exportAGMetadata to export the activity graph metadata to a local XML file. For more information, see the "Exporting Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.

2. Edit the XML file to define the new action. For each custom action, you must specify:

   - `URN`—An attribute of the `action` element, this is a string that uniquely identifies the action
   - `actionType`—A sub-element. Valid values are:
     - `Simple`—These actions are useful for counting. They have no other metadata besides the source, the target, and the occurred time. For example, WebCenter Portal comes with a preregistered `view-count` simple action whose associated relation value increases each time the person clicks on the same item, but also decays over time.
     - `Boolean`—These actions are useful when you just want to know whether something has happened or not, but not how many times it has happened. Boolean actions have one additional Boolean as metadata. For example, WebCenter Portal comes with a Boolean `view` action whose associated relation value doesn't increase each time the person clicks on the same item. It just records whether a person has clicked on a specific item or not.
     - `Non-negative Integer`—Actions that have one additional integer as metadata, where the integer cannot be negative. Rating (assigning a number of stars) is the typical example.
     - `Integer`—Actions that have one additional integer as metadata. This can be used for ratings that allow negative values.
   - `symmetric`—A sub-element that indicates whether the source and target of the action are interchangeable. An example of a symmetric action is the `connect` action, which occurs when two users connect in People Connections. Valid values are `true` or `false`.
   - `sourceType`—A sub-element that identifies the type of object that performs the action. Valid values are `User` or `Item`.
   - `targetType`—A sub-element that identifies the type of object on which the action is performed. Valid values are `User` or `Item`.
   - `relationType`—A sub-element. Valid values are `Sum` or `LastAssigned`. `Sum` actions increment each time they occur, for example the `edit-count` action. `LastAssigned` actions keep whatever value was passed in the most recent occurrence of the action. Non-counting simple actions like `create` and `edit` are `LastAssigned`. An example of a `LastAssigned Integer` action would be a rating action.
   - `relationDecayPeriod`—(Optional) A sub-element that identifies the amount of time, in days, after which the action starts to lose (or decay) value. When computing the relation value, the value of each action is multiplied by the decay factor every decay period following the occurrence of the action.
   - `relationDecayFactor`—(Optional) A sub-element that is a floating value between 0 and 1 that determines how much the action's value decreases (or decays) after the decay period. When computing the relation value, the value of each action is multiplied by the decay factor every decay period following the occurrence of the action.

Example 46–2 Action Definition

```
<actions>
  ...
  <action URN="connect">
```

```
    <actionType>Boolean</actionType>
    <symmetric>true</symmetric>
    <sourceType>User</sourceType>
    <targetType>User</targetType>
    <relationType>LastAssigned</relationType>
    <relationIsNonNegative>true</relationIsNonNegative>
  </action>
  ...
  <action URN="edit-count">
    <actionType>Simple</actionType>
    <symmetric>false</symmetric>
    <sourceType>User</sourceType>
    <targetType>Item</targetType>
    <relationType>Sum</relationType>
    <relationDecayPeriod>1</relationDecayPeriod>
    <relationDecayFactor>0.97</relationDecayFactor>
  </action>
  ...
</actions>
```

3. Use the WLST command `importAGMetadata` to import the updated activity graph metadata file to the managed server where the Portal Framework application is deployed. For more information, see the "Importing Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.

46.4.3 Defining Custom Similarity Calculations

Activity graph includes metadata definitions for the similarity calculations that are used by WebCenter Portal. For more information, see "Similarity Calculations".

You can define your own similarity calculations, for WebCenter Portal or for other applications, by exporting the activity graph metadata definitions to an XML file, editing the file, and then importing the metadata back into WebCenter Portal. For example, if you want to integrate your CRM application with activity graph, you could define an `item-assign` similarity calculations for to help recommend other service requests that were assigned to the same person.

To define a custom similarity calculation:

1. Use the WLST command `exportAGMetadata` to export the activity graph metadata to a local XML file. For more information, see the "Exporting Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*
2. Edit the XML file to define the new similarity calculation. For each similarity calculation, you must specify:
   - `URN`—An attribute of the similarityCalculation element that is a string that uniquely identifies the similarity calculation.
   - `similarityFunction`—A sub-element that identifies the function that measures the similarity of items. There is currently only one supported similarity function: `Tanimoto`. This function measures similarity between two items as the ratio of the number of common actions to the total number of actions on those items.
   - `domainClasses`—A sub-element that identifies the node classes for which similarity scores are calculated. These are the targets of the actions represented in the similarity calculation's relation combination.
   - `backgroundClasses`—A sub-element that identifies the node classes that are the sources of the actions in the similarity calculation's relation combination.

- relationCombination—A sub-element that defines a new relation by combining one or more registered relations. There are two types of relation combination:
  - Boolean OR (used by all WebCenter Portal out-of-the-box similarity calculations) The resulting relation combination has a value of 1 (meaning true) if any of the component relations have a positive value, and 0 (meaning false) otherwise.
  - Weighted Sum (used by all WebCenter Portal out-of-the-box rank calculations) The resulting relation combination is a weighted sum of the values for each of its component relations.

  For each component relation, specify:
  - actionURN—The URN of the action for the component relation
  - use inverse—Set to false (the default) to use the component relation to calculate similarity directly for the target objects, or true to use the component relation to calculate similarity for the source objects rather than the target objects. For example, if the view relation has the source object (user) viewing a target object (document), then to calculate similarity for documents, set use inverse=false. To calculate similarity for source objects (users), set use inverse=true.
  - weight—(for Weighted Sum relation combinations) The weight to apply to the component relation represented as a floating-point number

Example 46–3 Similarity Calculation Definition

```
<similarityCalculations>
  <similarityCalculation URN="item-edit">
    <similarityFunction>Tanamoto</similarityFunction>
    <domainClasses>
      <URN>document:wcServiceID=oracle.webcenter.doclib</URN>
      <URN>wiki-page:wcServiceID=oracle.webcenter.wiki</URN>
      <URN>blog:wcServiceID=oracle.webcenter.wiki</URN>
      <URN>topic:wcServiceID=oracle.webcenter.collab.forum</URN>
    </domainClasses>
    <backgroundClasses>
      <URN>user:wcServiceID=oracle.webcenter.people</URN>
    </backgroundClasses>
    <relationCombination type="BOOLEAN_OR">
      <component inverse="false" actionURN="create" />
      <component inverse="false" actionURN="comment" />
      <component inverse="false" actionURN="edit" />
    </relationCombination>
  </similarityCalculation>
</similarityCalculations>
```

3. Use the WLST command importAGMetadata to import the updated activity graph metadata file to the managed server where the Portal Framework application is deployed. For more information, see the "Importing Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.

46.4.4 Defining Custom Rank Calculations

Activity graph includes metadata definitions for the rank calculations that are used by the activity graph rank engine to calculate the importance of nodes in the activity graph. For more information, see the "Setting Up Activity Rank for Oracle Secure Enterprise Search" section in *Administering Oracle WebCenter Portal*.

You can define your own rank calculations, for WebCenter Portal or for other applications, by exporting the activity graph metadata definitions to an XML file, editing the file, and then importing the metadata back into WebCenter Portal.

To define a custom rank calculation:

1. Use the WLST command `exportAGMetadata` to export the activity graph metadata to a local XML file. For more information, see the "Exporting Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*

2. Edit the XML file to define the new rank calculation. For each rank calculation, you must specify:

   - `URN`—An attribute of the `rankCalculation` element, this is a string that uniquely identifies the rank calculation.

   - `domainClasses`—A sub-element that identifies a list of node classes to which the rank calculation applies.

   - `relationCombination`—A sub-element that defines a new relation by combining one or more registered relations. There are two types of relation combination:

     – `Boolean OR` (used by all WebCenter Portal out-of-the-box similarity calculations) The resulting relation combination has a value of `1` (meaning true) if any of the component relations have a positive value, and `0` (meaning false) otherwise.

     – `Weighted Sum` (used by all WebCenter Portal out-of-the-box rank calculations) The resulting relation combination is a weighted sum of the values for each of its component relations.

     For each component relation, specify:

     – `actionURN`—The URN of the action for the component relation

     – `use inverse`—Set to `false` (the default) to use the component relation to calculate similarity directly for the target objects, or `true` to use the component relation to calculate similarity for the source objects rather than the target objects. For example, if the `view` relation has the source object (`user`) viewing a target object (`document`), then to calculate similarity for documents, set `use inverse=false`. To calculate similarity for source objects (users), set `use inverse=true`.

     – `weight`—(for `Weighted Sum` relation combinations) The weight to apply to the component relation represented as a floating-point number

   - `resultAcceptorClass`—A sub-element that identifies the fully qualified class name for the class that implements the `IRankResultAcceptor` interface. This class receives a set of object rankings from the Rank Engine and stores them in a search engine where they can later be used to influence search query ranking. WebCenter Portal includes one rank acceptor out of the box, which will persist ranks to Oracle Secure Enterprise Search.

Example 46–4 Rank Calculation Definition

```
<rankCalculations>
  <rankCalculation URN="activity-rank">
    <domainClasses>
      <URN>WC.user</URN>
      <URN>WC.document</URN>
      <URN>WC.wiki-page</URN>
      <URN>WC.blog</URN>
    </domainClasses>
    <relationCombination type="WEIGHTED_SUM">
      <component actionURN="connect" weight="10.0" />
      <component actionURN="edit" weight="20.0" inverse="true" />
      <component actionURN="view-count" weight="1.0" />
      <component actionURN="create" weight="100.0" inverse="true" />
      <component actionURN="create" weight="100.0" />
      <component actionURN="edit-count" weight="20.0" />
      <component actionURN="download" weight="5.0" />
      <component actionURN="tag" weight="10.0" />
      <component actionURN="comment" weight="10.0" />
    </relationCombination>
    <resultAcceptorClass>
      oracle.webcenter.activitygraph.providers.rankAcceptors.ses.SesRankResultAcceptor
    </resultAcceptorClass>
  </rankCalculation>
</rankCalculations>
```

3. Use the WLST command `importAGMetadata` to import the updated activity graph metadata file to the managed server where the Portal Framework application is deployed. For more information, see the "Importing Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.

46.4.5 Registering Custom Activity Providers

Activity providers are used by the activity graph engine during the gathering process to generate activities from recorded occurrences of actions. For example, the Analytics Activity Provider reads actions from the Analytics event tables and uses a registered set of mappings to generate activities. These activities are then used to determine relations, which are used in turn to determine recommendations and search ranks.

If you want to integrate other applications with the activity graph engine, you can create your own activity providers to generate activities from those applications.

To make a custom activity provider available to the activity graph engine, you must register it by adding an activity provider assignment to the activity graph metadata definitions. An activity provider assignment maps the triple of the `action`, `srcClass`, and `trgClass` to the Java class that implements the activity provider.

Note: If more than one triple maps to the same provider class, there must be a provider assignment for each triple. For example, the out-of-the-box metadata declares a number of provider assignments mapping all triples to a single class, `AnalyticsActivityProvider`.

To register a custom activity provider:

1. Use the WLST command `exportAGMetadata` to export the activity graph metadata to a local XML file. For more information, see the "Exporting Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*

2. Edit the XML file to define the new activity provider assignment. For each activity provider assignment, you must specify:

   - `action`—An attribute of the `providerAssignment` element, this specifies which action is being mapped to the `providerClass`. Specify one registered action.

- srcClass—An attribute of the providerAssignment element, this specifies which source class is being mapped to the providerClass. Specify one registered node class.
- trgClass—An attribute of the providerAssignment element, this specifies which target class is being mapped to the providerClass. Specify one registered node class.
- providerClass—A sub-element that identifies the fully qualified name of the Java class that implements the activity provider for the specified action, source class, and target class triple.

Example 46–5 Activity Provider Assignment Definition

```
<providerAssignments>
  <providerAssignment action="connect" srcClass="WC.user" trgClass="WC.user">
    <providerClass>
     oracle.webcenter.activitygraph.providers.activityProviders.analytics.AnalyticsActivityProvider
    </providerClass>
  </providerAssignment>
</providerAssignments>
```

3. Use the WLST command importAGMetadata to import the updated activity graph metadata file to the managed server where the Portal Framework application is deployed. For more information, see the "Importing Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.

46.4.6 Registering Custom QRPPs

WebCenter Portal provides several QRPPs to filter recommendation results. For more information, see "Query Result Post-Processors (QRPPs)".

You can create your own QRPPs to further filter recommendation results or to provide display metadata for recommendations when you are integrating the activity graph engine with other applications. To make a QRPP available to the activity graph engine, you must register it by adding a QRPP registration to the activity graph metadata definitions.

To register a custom QRPP:

1. Use the WLST command exportAGMetadata to export the activity graph metadata to a local XML file. For more information, see the "Exporting Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*
2. Edit the XML file to register the new QRPP. For each QRPP, you must specify:
   - URN—An attribute of the QRPP element, this is a string that uniquely identifies the QRPP.
   - priority—An attribute of the QRPP element, this is an integer indicating the order in which the QRPP should be run in relation to the other registered QRPPs.
   - description—A sub-element that provides a brief description of what the QRPP does.
   - providerClass—A sub-element that identifies the fully qualified name of the Java class that implements the QRPP.

Example 46–6 QRPP Definition

```
<QRPPs>
```

```
  <QRPP priority="1" URN="WebCenter Portal Security QRPP">
    <description>
      Uses the WebCenter Portal Resource Authorizer to perform security filtering.
    </description>
    <providerClass>
      oracle.webcenter.activitygraph.providers.qrpps.security.WCSecurityQueryResultPostProcessor
    </providerClass>
  </QRPP>
</QRPPs>
```

3. Use the WLST command `importAGMetadata` to import the updated activity graph metadata file to the managed server where the Portal Framework application is deployed. For more information, see the "Importing Activity Graph Metadata" section in *Administering Oracle WebCenter Portal*.

46.5 Troubleshooting the Activity Graph

This section provides information to assist you in troubleshooting problems you may encounter while using the activity graph.

The following troubleshooting solutions assume that:

- The activity graph engine is deployed correctly.
- The `WC_Utilities` managed server is up and running.
- The property `openusage enabled` is `true`.

46.5.1 Troubleshooting the Activity Graph Task Flows (All Task Flows)

Problem

Recommendations are not shown in the task flows even after valid user activity.

Solution

Check whether the events are being captured by the Analytics Event Collector. You can verify this by checking the collector logs. If the logs do not show the events being captured, the problem is with the Analytics Event Collector.

For more information, see the "Validating Analytic Event Collection" section in *Administering Oracle WebCenter Portal*.

Problem

The Analytics Event Collector logs show that events are being captured but recommendations are not shown in the task flows.

Solution

Check the last run time of the activity graph engine on the activity graph Schedule and Status Page. You may need to adjust the schedule or launch an immediate run in order to gather and analyze recent events.

Problem

The activity graph engine has run successfully recently, but recommendations are not shown in the task flows.

Solution

Verify the relation tables in the Activities database (`ActivitiesDS`) for the presence of any data. If the activity graph engines are working correctly, these relation tables should have some data in them. If data is present in the tables and there are still no recommendations in the task flows, then the task flows might be broken.

46.5.2 Troubleshooting the Recommended Connections Task Flow

Problem

Some users are not shown as recommended connections in spite of valid user interactions.

Solution

This might happen if WebCenter Portal and the tools/services are not wired with the same OID. In this case, users who are not present in the OID to which the services are wired will not be suggested recommendation connections. The same users should be present in both the OIDs, or WebCenter Portal and services should be wired to the same OID.

46.5.3 Troubleshooting the Similar Portals Task Flow

Problem

A portal is not suggested in the Similar Portals task flow even after a successful user interaction.

Solution

Check to see that the logged in user has permissions to access the portal by finding it in the Browse Portals task flow.

46.5.4 Troubleshooting the Similar Items Task Flow

For recommended items to be displayed in the Similar Items task flow, the item for which the recommended items are to be displayed should be selected in another task flow on the page (for example, the Document Manager task flow).

Problem

An item is not suggested in the Similar Items task flow even after valid user interaction.

Solution

This could be because the current user does not have view privileges on the item. This is the correct behavior. Users should not see recommendations for items on which they do not have sufficient privileges. If the user should be able to see the item, grant the user sufficient privileges.

Problem

Specific types of items are not being displayed (for example, documents, wikis, and blogs are seen in the task flow, but not discussions).

Solution

Check the status of the specific tool or service. If the tool is unavailable, then items from that tool will not be displayed in the Similar Items task flow.

Problem

Items are suggested only for some users; other users do not get any suggested items in the Similar Items task flow.

Solution

This might happen if WebCenter Portal and the tools/services are not wired with the same OID. In this case, users who not present in the OID to which the services are wired will not see suggested items from that service. The same users should be present in both the OIDs, or the WebCenter Portal and services should be wired to the same OID.

47

Integrating Analytics

Analytics enable you to display usage and performance metrics for Portal Framework applications. This chapter describes how to set up and integrate analytics in Framework applications.

> **Note:** For portals, connections to the Analytics database (`ACTIVITIES`) and the Analytics Collector are configured out-of-the-box so the Analytics service is available by default.

This chapter includes the following topics:

- Section 47.1, "Introduction to Analytics"
- Section 47.2, "Basic Configuration for Analytics"
- Section 47.3, "Building Analytics Reports"

For information about using any of the analytics task flows, see the "Adding Analytics to a Portal" chapter in *Oracle Fusion Middleware Building Portals with Oracle WebCenter Portal*. For a detailed list of database tables and parameters, see Appendix H, "WebCenter Portal Analytics Database Schema."

47.1 Introduction to Analytics

Analytics offers real-time usage and activity reporting for your portal or Framework application. This section provides an overview of analytics, its associated task flows, and how it can be used.

This section includes the following subsections:

- Section 47.1.1, "Understanding Analytics"
- Section 47.1.2, "Requirements for the Analytics Service"
- Section 47.1.3, "What Happens at Runtime"

47.1.1 Understanding Analytics

Analytics lets administrators and users track and analyze traffic and usage in portal and Framework applications. Analytics provides the following basic functionality:

- **Usage Tracking Metrics**: Analytics collects and reports metrics for common portal functions, including community, page, portlet, and document hits.

- **Behavior Tracking**: Analytics can be used to analyze portal and Framework application metrics to determine usage patterns, such as page visit duration and usage over time.
- **User Profile Correlation**: Analytics can be used to correlate metric information with user profile information. Usage tracking reports can be viewed and filtered by user profile data such as country, company or title.
- **Custom Reporting:** Developers and business users can build custom reports that query the analytics data. For more details, see Section 47.3.1, "Using SQL Data Controls."

Table 47–1 lists the events that WebCenter Portal collects for analytics.

Table 47–1 Analytics Events Collected by WebCenter Portal

Component	Events
Pages	User creates, deletes, edits, tags, or views a page
Discussions	User views, creates, edits, deletes, tags, likes, or replies to a discussion User views, creates, edits, or deletes an announcement User creates or deletes a discussion forum
Wikis/Blogs	User views a wiki or blog, downloads wiki or blog content, creates, edits, or deletes a wiki or blog, tags, likes or comments on a wiki or blog
Portal	User views a portal, creates a portal, joins a portal, or deletes a portal
Lists	User creates, deletes, or edits a list
Login	User logs in
People	User adds a connection, posts on a wall, edits their profile, or edits their status information
Portlet	User views a portlet
Search	User initiates a search

Table 47–2 lists the analytics task flows available out-of-the-box with WebCenter Portal. These task flows work similarly for portals and Portal Framework applications. For detailed information about these task flows and how to use them, see the "Adding Analytics to a Portal" chapter in *Oracle Fusion Middleware Building Portals with Oracle WebCenter Portal*.

Table 47–2 Analytics Task Flows Available in JDeveloper

Task Flows	Description
WebCenter Portal Traffic	A summarized view for common events within the portal.
Page Traffic	Displays the number of page hits and the number of unique users that visited any page within the portal.
Login Metrics	Reports portal logins.
Portlet Traffic	Displays usage data for a portlet.
Portlet Response Time	Displays performance data for a portlet.
Portlet Instance Traffic	Displays usage data for a portlet instance*.
Portlet Instance Response Time	Displays performance data for a portlet instance*.

Table 47–2 (Cont.) Analytics Task Flows Available in JDeveloper

Task Flows	Description
Search Metrics	Tracks portal searches.
Document Metrics	Tracks document views.
Wiki Metrics	Tracks most popular/least popular wikis.
Blog Metrics	Tracks most popular/least popular blogs.
Discussion Metrics	Tracks most popular/least popular discussions.

* If the same portlet is displayed on several different pages, each placement is known as a portlet instance.

As well as events reported by WebCenter Portal's out-of-the-box task flows, you can also create custom task flows based on a SQL query to report on additional events as described in Section 47.3, "Building Analytics Reports."

47.1.2 Requirements for the Analytics Service

The Analytics service requires that the *analytics schema* (`ACTIVITIES`) is configured and running on an appropriate database. In addition, Oracle WebCenter Portal's *Analytics Collector* must be up and running on the `WC_Utilities` managed server. For detailed installation instructions, see *Installation Guide for Oracle WebCenter Portal*.

On install, the Analytics Collector is configured to receive events out-of-the-box, using installation defaults. If the default values are not suitable for your installation, you may need to configure different values using WLST or Fusion Middleware Control. For more details, see the "Configuring Analytics Collector Settings" chapter in *Administering Oracle WebCenter Portal*.

To display usage and performance metrics through analytics task flows you must enable event generation for your Portal Framework application and configure a connection to the Analytics database (`ACTIVITIES`). For details on how to do this in JDeveloper, see Section 47.2.2, "Setting up Connections for Analytics."

47.1.3 What Happens at Runtime

At runtime, user activity in your Portal Framework application generates event data. For example, every time a user logins in, reads a discussion topic, views a document, and so on, the event is recorded. The OpenUsage API sends event metrics to the Analytics Collector using UDP (User Datagram Protocol) and the event data is stored in the analytics database (ACTIVITIES).

In a non-clustered environment the Portal Framework application is configured with the location of the collector, and all events are transmitted to that location.

Note: In the current release, the Analytics Collector cannot be clustered.

Analytics task flows and custom analytics reports (based on SQL data controls) that are included in Portal Framework applications display the metrics collected for standard events by querying the analytics database at runtime. For more information about the task flows at runtime, see the "Adding Analytics to a Portal" in *Oracle Fusion Middleware Building Portals with Oracle WebCenter Portal*.

47.2 Basic Configuration for Analytics

This section describes how to include analytics in your Portal Framework applications.

This section contains the following subsections:

- Section 47.2.1, "Configuration Roadmap for Analytics"
- Section 47.2.2, "Setting up Connections for Analytics"
- Section 47.2.3, "Adding Analytics Event Code to Your Application"
- Section 47.2.4, "Configuring a Namespace for Analytics Customizations in MDS"
- Section 47.2.5, "Adding Analytics Task Flows at Design Time"
- Section 47.2.6, "Setting up Security for Analytics Task Flows and Usage Data"

See also, Section 47.1.2, "Requirements for the Analytics Service"

47.2.1 Configuration Roadmap for Analytics

The flow chart depicted in Figure 47–1, together with Table 47–3, provides an overview of the prerequisites and tasks required to get analytics working in Portal Framework applications. For WebCenter Portal, the steps are essentially the same, with the exception that connections are already configured for out-of-the-box task flows. Each of the subsequent sections identify which configurations apply only to Framework applications.

Figure 47–1 Configuring the Analytics for Framework Applications

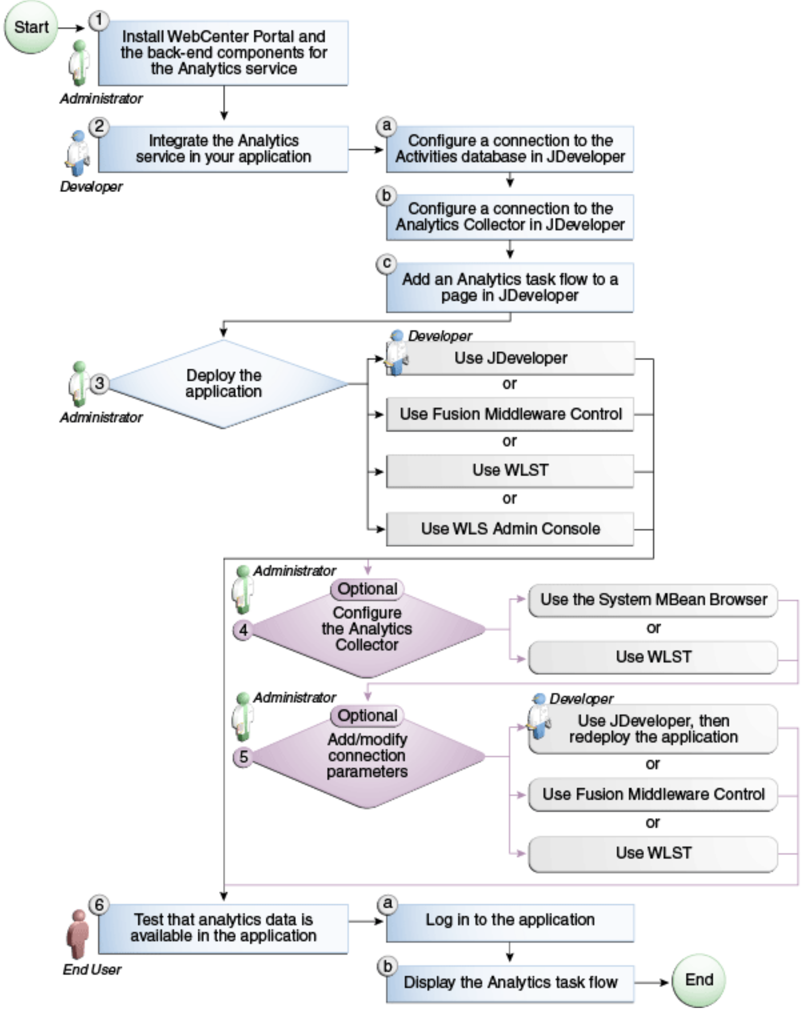

Start
1
Install WebCenter Portal and the back-end components for the Analytics service
Administrator
2
Integrate the Analytics service in your application
Developer
a
Configure a connection to the Activities database in JDeveloper
b
Configure a connection to the Analytics Collector in JDeveloper
c
Add an Analytics task flow to a page in JDeveloper
3
Deploy the application
Administrator
Developer
Use JDeveloper
or
Use Fusion Middleware Control
or
Use WLST
or
Use WLS Admin Console
Administrator
Optional
Configure the Analytics Collector
4
Use the System MBean Browser
or
Use WLST
Administrator
Optional
Add/modify connection parameters
5
Developer
Use JDeveloper, then redeploy the application
or
Use Fusion Middleware Control
or
Use WLST
6
Test that analytics data is available in the application
End User
a
Log in to the application
b
Display the Analytics task flow
End

Table 47–3 Configuring Analytics for Framework Applications

Actor	Task	Sub-task
Administrator	**1.** Install Oracle WebCenter Portal Framework and the back-end components for Analytics	
Developer	**2.** Integrate the Analytics service in your Portal Framework application	**2.a** Configure a connection to the Activities database in JDeveloper **2.b** Configure a connection to the Analytics Collector in JDeveloper **2.c** Add an analytics task flow to a page in JDeveloper

Table 47–3 (Cont.) Configuring Analytics for Framework Applications

Actor	Task	Sub-task
Developer/ Administrator	**3.** Deploy the Portal Framework application using one of the following tools: ■ JDeveloper (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator) ■ WLS Admin Console (Administrator)	
Administrator	**4.** (Optional) Configure the Analytics Collector using either of the following tools: ■ System MBean Browser ■ WLST	
Developer	**5.** (Optional) Instrument events for pages and portlets using JDeveloper, then redeploy the application.	
Developer/ Administrator	**6.** (Optional) Add/modify connection parameters using one of the following tools: ■ JDeveloper, then redeploy the application (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator)	
End User	**7.** Test that analytics data is available in the Portal Framework application	**6.a** Log in to the Portal Framework application **6.b** Display the analytics task flow

47.2.2 Setting up Connections for Analytics

Analytics require that the application is connected to the analytics database (`ACTIVITIES`). You must also configure a Portal Framework application to send event information to a specific Analytics Collector.

> **Note:** While you can set up the connections to back-end servers at design time in JDeveloper, you can later add, delete, or modify connections in your deployed environment using Fusion Middleware Control. For more information, see the "Managing the Analytics Service" chapter in *Administering Oracle WebCenter Portal*.

This section includes the following subsections:

- Section 47.2.2.1, "How to Set Up a Connection to the Analytics Database"
- Section 47.2.2.2, "How to Set Analytics Collector Properties"
- Section 47.2.2.3, "How to Set Up a Connection to the Analytics Collector"

47.2.2.1 How to Set Up a Connection to the Analytics Database

Analytics require a connection to the analytics database (`ACTIVITIES`) where analytics event data is stored.

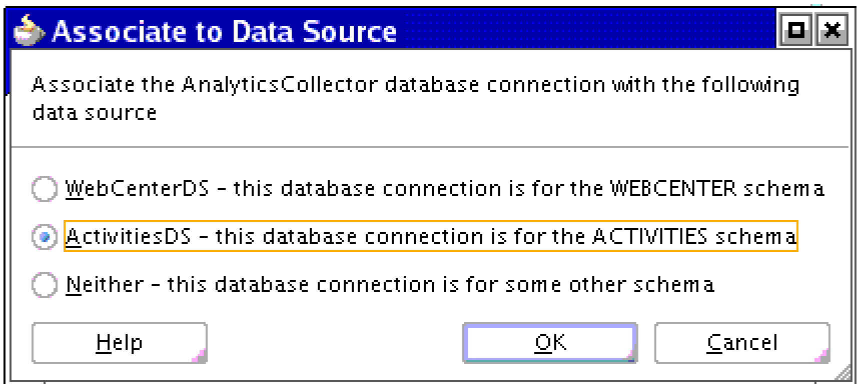
To set up the analytics database connection:

1. Ensure that the `ACTIVITIES` database is up and running.

   See Section 47.1.2, "Requirements for the Analytics Service".
2. In the Application Navigator, expand the Applications Resources panel.
3. Right-click **Connections**, then choose **New Connection**, and then **Database**.
4. In the Create Database Connection dialog, enter the following information for the database connection:

   - **Connection Name:** *`connectionName`* (for example, `myAnalyticsDatabaseConnection`
   - **Connection Type:** `Oracle (JDBC)`
   - **Username:** *`username`* (a user with access to the database)
   - **Password:** *`password`* (the specified user's password)
   - **Host Name:** *`host`* (where the analytics database is installed, for example `localhost`)
   - **JDBC Port:** *`port`* (for example, `1521`)
   - **SID:** *`sid`* (system identifier for the database)
5. Click **Test Connection**, and if it is successful, then click **OK**.
6. In the Associate to Data Source dialog, choose **ActivitiesDS** (Figure 47–2).

Figure 47–2 Connecting to the Analytics Database



Associate the AnalyticsCollector database connection with the following data source

○ WebCenterDS - this database connection is for the WEBCENTER schema

● ActivitiesDS - this database connection is for the ACTIVITIES schema

○ Neither - this database connection is for some other schema

   This creates a data-source to the `ACTIVITIES` schema so that you can test analytics in your Portal Framework application at design-time.
7. Click **OK**.

   The connection appears as a node in the Application Resources pane, under Connections.

47.2.2.2 How to Set Analytics Collector Properties

Out-of-the-box, the Analytics Collector is installed on the `WC_Utilities` managed server and is configured to receive events using the following default values:

Analytics Collector Configuration	Default Value
Collector Host Name	`localhost`
Default Port	`31314`
Maximum Port Number	`31314`
Broadcast Type	`Multicast`
Clustering	`Disabled`
Cluster Name	- `null`
Cluster Broadcast Frequency	- `10 seconds`

If these defaults are not suitable for your installation, your administrator can configure suitable values using WLST or the Fusion Middleware Control. For more information, see the "Configuring Analytics Collector Settings" chapter in *Administering Oracle WebCenter Portal*.

47.2.2.3 How to Set Up a Connection to the Analytics Collector

(Framework applications only) Analytics require a connection to the Analytics Collector that is collecting WebCenter Portal events and OpenUsage must be enabled in the Portal Framework application.

Use the following OpenUsage JVM properties to set properties for the Analytics service:

- `oracle.wc.openusage.`**`enabled`** - Specifies whether to send analytics events raised using OpenUsage APIs to the Analytics Collector. Valid values are `true` and `false`. The default value is `false`.
- `oracle.wc.openusage.`**`unicast`** - Specifies whether events are sent to a clustered Analytics Collector in multicast mode or whether a single Analytics Collector using unicast communication is required. Valid values are `true` and `false`. The default value is `true` (unicast). Currently, clusters are not supported so specify only `true` here.
- `oracle.wc.openusage.`**`clustername`** - Name of the collector cluster or the host name of an Analytics Collector. Currently, clusters are not supported so specify only the host name here. The default value is `localhost`.
- `oracle.wc.openusage.`**`collectorport`** - Port on which the Analytics Collector listens for events. The default value is `31314`.
- `oracle.wc.openusage.`**`timeout`** Period of time (in seconds) used to determine availability of the collector service in multicast mode. The default value is 30 seconds.

To set Analytics Collector JVM properties:

> **Tip:** If you are going to run the Framework application on a managed server, you can also add these JVM properties to the `startManagedWeblogic.sh` script.

1. In JDeveloper, choose **Run**, **Active Run Configuration**, and then **Manage Run Configurations** from the main menu.
2. In the Project Properties dialog, select the **Default** run configuration, and then click **Edit**.

3. In the **Launch Settings** section, add the following OpenUsage options to the **Java Options** field as follows:

```
-Doracle.wc.openusage.enabled=true
-Doracle.wc.openusage.clustername=localhost
-Doracle.wc.openusage.collectorport=31314
-Doracle.wc.openusage.unicast=true
-Doracle.wc.openusage.timeout=30
```

> **Note:** In the current release the `oracle.wc.openusage.unicast` value must be set to `true`. The Analytics Collector cannot be clustered in this release, so multicast is not supported.

Ensure that the values you provide, shown here in bold, match your Analytics Collector installation.

4. Click **OK** to save the default run configuration, and then click **OK** again.

These steps enable OpenUsage in the Integrated WebLogic Server for the current Portal Framework application. If the Integrated WebLogic Server is currently running you must restart it to pick up the new settings. See also, Section 7.2, "Deploying a Portal Framework Application to the Integrated WebLogic Server."

47.2.3 Adding Analytics Event Code to Your Application

Most events are configured out-of-the-box, so no additional coding is required in your application to send events. The only exception is page view events, which require additional code, as described in Section 47.2.3.1, "Including Event Code for Page Views."

47.2.3.1 Including Event Code for Page Views

To send page events, you must add event code to each page. The following is an example using a client JavaScript event on the page which, in turn, calls the Java Analytics API to send the actual event. To implement this example, you add the following code just below the `<af:document>` tag, replacing the `pageName` value with the name of the page for which you are sending events:

```
  <af:resource type="javascript">
       function initPageLoadEvent(event) {
            AdfCustomEvent.queue(event.getSource(),
                 "generatePageEvent",
                 {pageName:"Page and Login Statistics"},
                 true);
            event.cancel();
       }
  </af:resource>
<af:clientListener method="initPageLoadEvent" type="load"/>
<af:serverListener type="generatePageEvent"
                   method="#{AnalyticsInstrumentation.sendPageEvent}"/>
```

The example above generates a client event when the ADF document gets loaded, then the defined server listener actually sends the event. Here is the java bean that sends the event:

```
public void sendPageEvent (ClientEvent event) {
     // Checks whether Analytics events must be sent
     if (!AnalyticsUtil.isSendingEvents())
```

```
          return;

      HttpServletRequest request = (HttpServletRequest)
FacesContext.getCurrentInstance().getExternalContext().getRequest();
      String requestUser = request.getRemoteUser();

      //SEND PAGE VIEW EVENT
      String pageName = (String)event.getParameters().get("pageName");
      if(pageName == null || pageName.isEmpty() || requestUser == null)
         return;

AnalyticsUtil.sendPageViewEvent(FacesContext.getCurrentInstance().getViewRoot().ge
tViewId(),
                "PortalApp", //spaceDisplayName
                requestUser, //username
                0, pageName, false, request);
    }
```

47.2.4 Configuring a Namespace for Analytics Customizations in MDS

(Framework applications only) Analytics task flows use MDS to store customizations made by the user and these customizations are stored in an MDS namespace specific to analytics. If you want to enable user customizations for analytics task flows in your Portal Framework application, you must configure a namespace for the analytics metadata in `adf-config.xml`.

> **Note:** In addition, each task flow must specify a unique MDS document in which to its store user customizations details. See Section 47.2.5.4, "How to Allow End Users to Customize Analytics Task Flows at Runtime."

To configure a namespace for analytics metadata:

1. Open `adf-config.xml`.

   Use the Application Resources panel to navigate to this file. The file is located in the `Descriptors\ADF META-INF` folder.

2. Under the `<metadata-namespaces>` element, add the following XML fragment:

   ```
   <namespace path="/oracle/webcenter/analytics/scopedMD"
   metadata-store-usage="WebCenterFileMetadataStore"/>
   ```

3. Save the file.

See also, Chapter 21, "Performing Composer-Specific MDS Configurations."

47.2.5 Adding Analytics Task Flows at Design Time

This section describes the analytics task flows and how to add them to your application. It includes the following subsections:

- Section 47.2.5.1, "Analytics Task Flows"
- Section 47.2.5.2, "How to Add Analytics Task Flows to a Page"
- Section 47.2.5.3, "How to Modify Analytics Task Flow Parameters"
- Section 47.2.5.4, "How to Allow End Users to Customize Analytics Task Flows at Runtime"

- Section 47.2.5.5, "Analytics Task Flows and Task Flow Parameters"

47.2.5.1 Analytics Task Flows

Table 47–4 lists the analytics task flows available in JDeveloper. For detailed information about these task flows and the type of information that users can see at runtime, see the "Understanding Analytics Task Flows in WebCenter Portal" section in *Oracle Fusion Middleware Building Portals with Oracle WebCenter Portal*.

Table 47–4 Analytics Task Flows Available in JDeveloper

Analytics Task Flows	Description
WebCenter Portal Traffic	A summarized view for common events within the portal.
Page Traffic	Displays the number of page hits and the number of unique users that visited any page within the portal.
Login Metrics	Reports portal logins.
Portlet Traffic	Displays usage data for a portlet.
Portlet Response Time	Displays performance data for a portlet.
Portlet Instance Traffic	Displays usage data for a portlet instance*.
Portlet Instance Response Time	Displays performance data for a portlet instance*.
Search Metrics	Tracks portal searches.
Document Metrics	Tracks document views.
Wiki Metrics	Tracks most popular/least popular wikis.
Blog Metrics	Tracks most popular/least popular blogs.
Discussion Metrics	Tracks most popular/least popular discussions.

* If the same portlet is displayed on several different pages, each placement is known as a portlet instance.

47.2.5.2 How to Add Analytics Task Flows to a Page

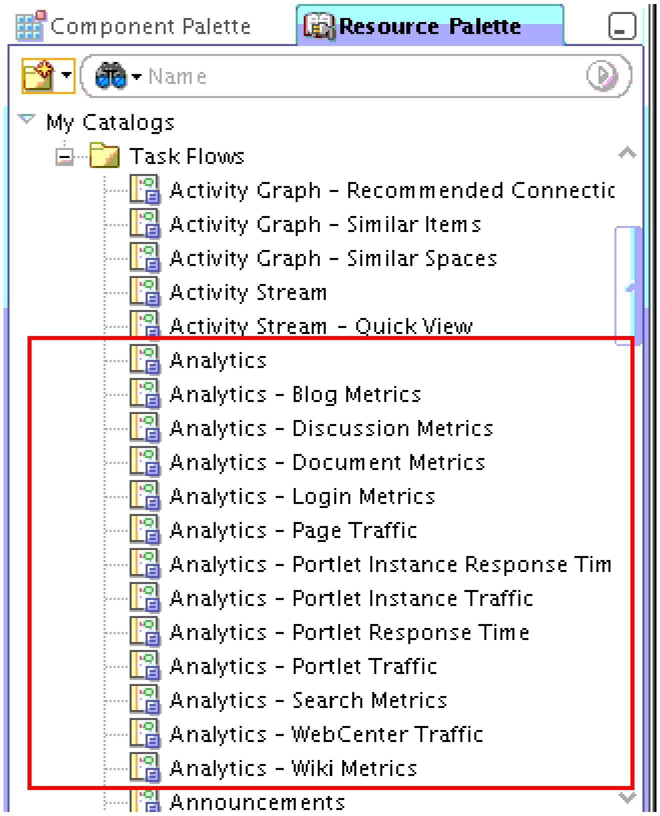
To add an analytics task flow to your application:

1. Prepare your application as described in Section 47.1.2, "Requirements for the Analytics Service."
2. Ensure that your application includes the services for which analytics event data is available, that is, portlets, discussions, documents, and search.

   > **Note:** If no usage data exists when you run the application, analytics task flows displays the message: `No data to display`

3. Open the JSF page (.jspx) on which you want to add the task flow.
4. In the Resource Palette, open the **WebCenter Portal Services Catalog**, then open the **Task Flows** folder (Figure 47–3).

Figure 47–3 Analytics Task Flows Available Through the Resource Palette

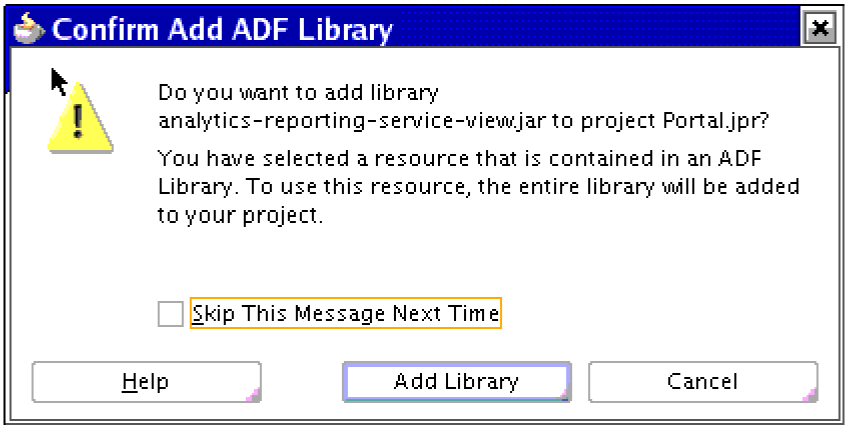

Component Palette
Resource Palette
Name
My Catalogs
Task Flows
Activity Graph - Recommended Connectic
Activity Graph - Similar Items
Activity Graph - Similar Spaces
Activity Stream
Activity Stream - Quick View
Analytics
Analytics - Blog Metrics
Analytics - Discussion Metrics
Analytics - Document Metrics
Analytics - Login Metrics
Analytics - Page Traffic
Analytics - Portlet Instance Response Tim
Analytics - Portlet Instance Traffic
Analytics - Portlet Response Time
Analytics - Portlet Traffic
Analytics - Search Metrics
Analytics - WebCenter Traffic
Analytics - Wiki Metrics
Announcements

5. Drag and drop an **Analytics** task flow onto your page inside the `<af:form>` tag.

6. Choose **Region** from the Create context menu.

   You may be prompted to add the ADF library for the Analytics service (`analytics-reporting-service-view.jar`) to the project. Confirm by clicking **Add Library** (Figure 47–4).

Figure 47–4 Adding the ADF Library for the Analytics Service



Do you want to add library analytics-reporting-service-view.jar to project Portal.jpr?

You have selected a resource that is contained in an ADF Library. To use this resource, the entire library will be added to your project.

□ Skip This Message Next Time

7. In the **Edit Task Flow Binding** dialog, enter values for analytics task flow parameters:

   - `applicationName` - Required

- analyticsResourceId - Required
- analyticsReportTitle - Optional
- maxDataPointsPerSeries - Optional

For more information, see Section 47.2.5.5, "Analytics Task Flows and Task Flow Parameters."

8. Click **OK**.

   The task flow is added to the page, and the ViewController project's libraries are configured to run the task flow.

9. Save your project and run the page to see the task flow running in the Portal Framework application.

   If no usage data exists when you run the application, analytics task flows display the message: `No data to display`

   You may create some data for the analytics task flow to display by performing actions that relate to the task flow you are testing. For example, to test discussion metrics, create and view discussions, to test page metrics, create and view pages, and so on.

47.2.5.3 How to Modify Analytics Task Flow Parameters

Each analytics task flow has a set of required and optional task flow binding parameters. Required parameters are not mandatory but enable you to capture information that is essential to the task flow's successful function. For example, if you want user customizations for a particular task flow instance to be stored in MDS you must specify the MDS document required.

In addition, you can use task flow binding parameters to customize the appearance and behavior of a task flow instance. For example, you can use parameter values to specify a display title above your analytics data.

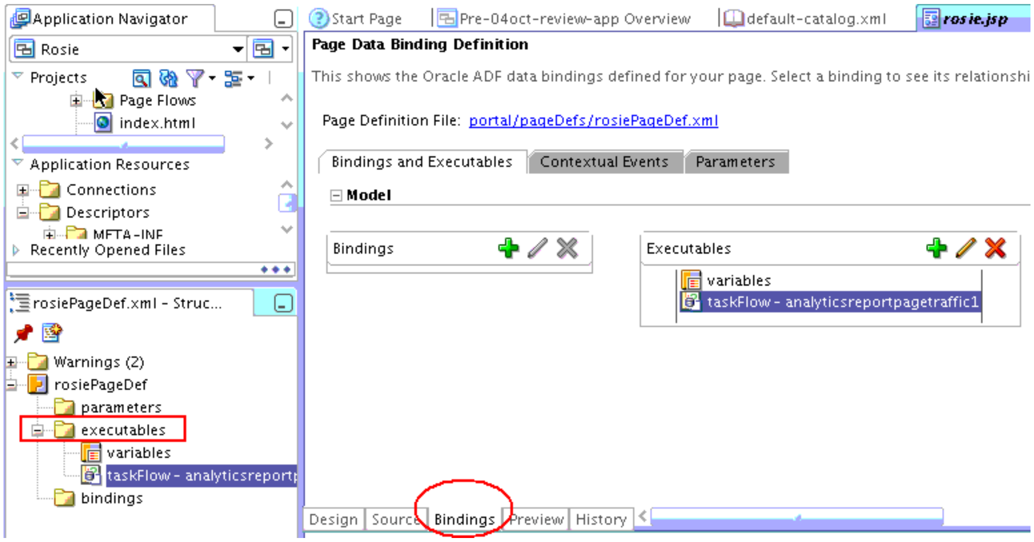
You can provide task flow binding parameter values when you drag and drop a task flow onto an application page. Doing so opens the Task Flow Bindings dialog (for more information, see Section 47.2.5.2, "How to Add Analytics Task Flows to a Page").

You can also adjust task flow binding parameter values after you have placed a task flow on a page at run time. For details, see the "Setting Analytics Task Flow Properties" section in *Oracle Fusion Middleware Building Portals with Oracle WebCenter Portal*

To access the Edit Task Flow Binding dialog:

1. Click the **Bindings** tab at the bottom of the page (next to the **Source** tab) to go to the Bindings view.
2. Under **Executables**, you will see a list of task flows added to the page. Select the analytics task flow (Figure 47–5).

Figure 47–5 Accessing Input Parameters for Analytics Task Flows



This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relationshi

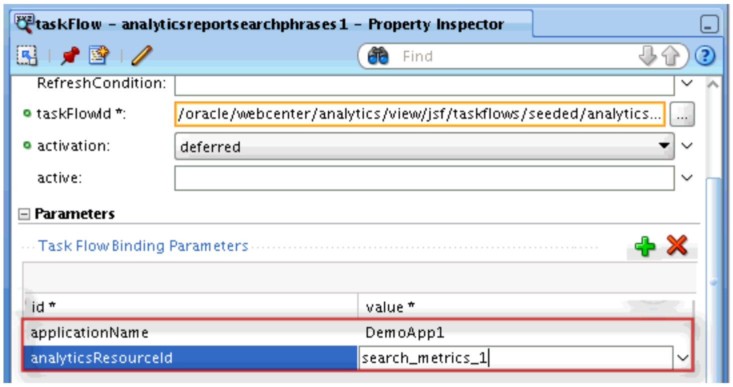
Page Definition File: portal/pageDefs/rosiePageDef.xml

3. Next to the Executables heading, click the **Edit selected element** icon (a pencil).

4. In the Edit Task Flow Binding dialog (Figure 47–6), specify the binding parameter values as required

   For more information, see Section 47.2.5.5, "Analytics Task Flows and Task Flow Parameters."

Figure 47–6 Adding Binding Parameters for Analytics Task Flows


taskFlow – analyticsreportsearchphrases1 – Property Inspector
Find
Parameters
Task Flow Binding Parameters

RefreshCondition:

taskFlowId *: /oracle/webcenter/analytics/view/jsf/taskflows/seeded/analytics...

activation: deferred

active:

id *	value *
applicationName	DemoApp1
analyticsResourceId	search_metrics_1

5. When you are finished, save the page and run your page to see the results.

47.2.5.4 How to Allow End Users to Customize Analytics Task Flows at Runtime

If you want to enable user customizations for a particular task flow instance you must specify the MDS document where customizations are stored using the `Analytics Resource Id` parameter.

The ID must be unique, so consider using a consistent naming pattern such as `<app_name>_<page_name>_<task_flow>_<sequence>`. For example, set the `analyticsResourceId` parameter for a Page Traffic task flow to `myapp_analyticspage_pagetraffic_1`.

For details, see Section 47.2.5.3, "How to Modify Analytics Task Flow Parameters".

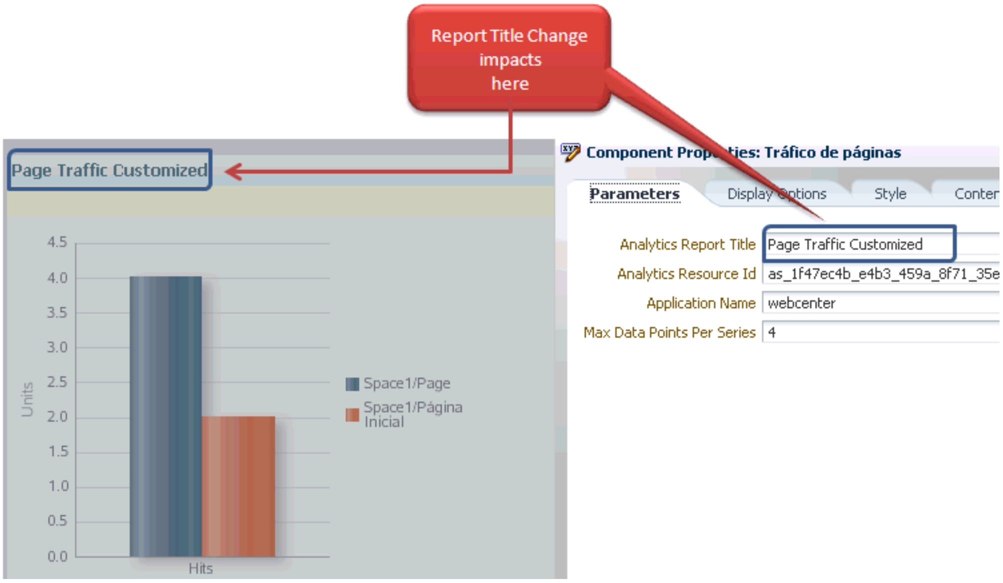
47.2.5.5 Analytics Task Flows and Task Flow Parameters

Table 47–5 lists and describes task flow binding parameters applicable to the Analytics service.

Table 47–5 Analytics Task Flow Binding Parameters

Parameter (* = required)	Task Flows	Description
`analyticsReportTitle`	All	Specifies the display title that appears above the analytics data, that is, you can override the default report title. See also, Figure 47–7, "analyticsReportTitle - Example".
`analyticsResourceId*`	All	Specifies the MDS document that will be generated to store user customizations/application customizations for the task flow instance in MDS. For example: `mymainloginmetrics`
`applicationName*`	All	Specifies the name of the Portal Framework application for which you want to display analytics data. For example: `MyPortalApplication` For portals, the application name is always `webcenter`. The analytics database can be used to store event data from multiple applications so this parameter is required to identify which application data to display. If omitted, the task flow display analytics data for all applications.
`maxDataPointsPerSeries`	All	Indicates the maximum number of data points to be displayed in a bar or line chart. Enter a value between 1 and 1000. The default value is 25. Increasing the number of data points can increase the time it takes to display the chart. See also, Figure 47–8, "maxDataPointsPerSeries - Example".

Figure 47–7 analyticsReportTitle - Example

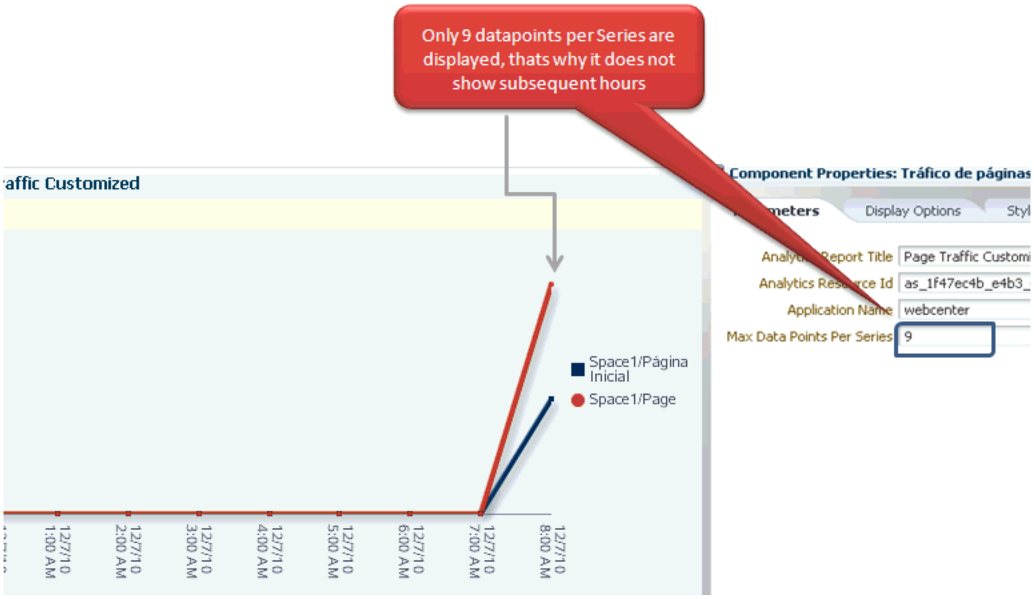


Report Title Change impacts here

Component Properties: Tráfico de páginas

Analytics Report Title: Page Traffic Customized
Analytics Resource Id: as_1f47ec4b_e4b3_459a_8f71_35e
Application Name: webcenter
Max Data Points Per Series: 4

Figure 47–8 maxDataPointsPerSeries - Example



Only 9 datapoints per Series are displayed, thats why it does not show subsequent hours

Component Properties: Tráfico de páginas

Analytics Report Title: Page Traffic Customi
Analytics Resource Id: as_1f47ec4b_e4b3_
Application Name: webcenter
Max Data Points Per Series: 9

47.2.6 Setting up Security for Analytics Task Flows and Usage Data

Analytics task flows are intended to make usage metrics visible to a limited set of administrative users who perform particular business functions, such as capacity planning, quality of service (QoS) analysis, return on investment (ROI) analysis, "best bet" customization for Search, and so on.

Analytics usage data is valuable for portal analysis but might be regarded as private or sensitive to portal users. For example, the Search, Document, and Portlet reports can be configured to display activity metrics for a particular user, based on user properties such as E-mail Address, First Name, or Last Name.

To protect security and privacy interests associated with analytics task flows and custom reports:

- Manage administrative access to the analytics task flows, custom reports, and any page that displays sensitive usage data.

  To ensure that only a limited number of administrative users can add analytics task flows to pages, create reports based on custom analytics data controls, or view pages set up to display sensitive usage metrics, create a new administrative group and manage group membership accordingly.

- Manage user access to analytics task flows.

  Ensure analytics task flows and custom reports do not contain private or sensitive data unless such a view is particularly intended. If the metrics in the report do contain private or sensitive data, configure security so that only appropriate, specified users have access to the task flow or the page.

  For example, at design-time, developers can expose the analytics task flows to non-admin users by granting them appropriate privileges to the page. In addition, developers can customize the reports pre-deployment, to hide or show and predefine certain report options (such as time frame, chart type, user property filter, group by option, and so on). Administrators will be able to perform the same tasks at runtime, that is, grant page access and customize the information that displays. Non-admin users can still personalize the reports they are allowed to see, but they cannot change customizations made by the administrator.

- Ensure that unauthenticated users are never allowed to add analytics task flows to pages or see sensitive data.

47.3 Building Analytics Reports

Out-of-the-box analytics task flows present common analytics event metrics in a specific display format. If you want to present analytics data in a different way or display custom event data, you can build a custom analytics report using SQL.

This section contains the following subsections:

- Section 47.3.1, "Using SQL Data Controls"
- Section 47.3.2, "SQL Statements for Out-of-the-Box Analytics Reports"
- Section 47.3.3, "Sample Queries for User Metrics"
- Section 47.3.4, "Sample Analytics Database Queries for Specific Metrics"

For a detailed list of database tables and parameters, see Appendix H, "WebCenter Portal Analytics Database Schema."

47.3.1 Using SQL Data Controls

Use SQL data controls to define, in an SQL query statement, the information you want to retrieve from the analytics database. When you expose data controls on a page you can choose whether the analytics data presents in a graph, table or a form, and you can also configure the bind parameters and other display options.

You can use JDeveloper to build SQL data controls at design-time. For detailed information about data controls, see *Fusion Developer's Guide for Oracle Application Development Framework*.

You can also create data controls in a running Portal Framework application if runtime resource management features are enabled. To do this in WebCenter Portal, see the

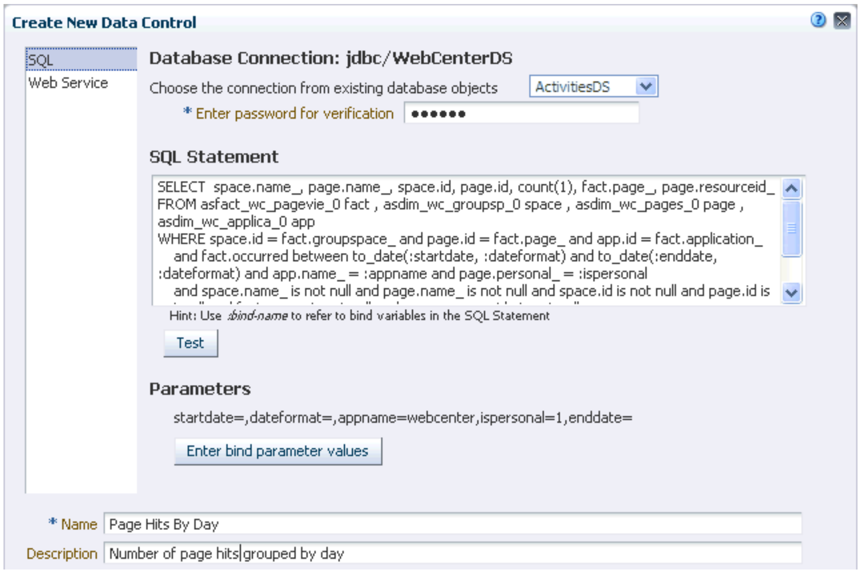
"Creating a SQL Data Control" section in *Oracle Fusion Middleware Building Portals with Oracle WebCenter Portal*. To create a data control in other Portal Framework applications, see the "Managing Assets for a Portal Framework Application" chapter in *Administering Oracle WebCenter Portal*.

Use a SQL data control to fetch data from the analytics database and display analytics data in your Portal Framework application. Figure 47–9 shows a sample SQL statement in a Create/Edit SQL Data Control dialog in webCenter Portal. A database connection to the analytics database (`ActivitiesDS`) is required, and you must provide a valid database password.

Sample SQL: Page Hits by Day

```
SELECT space.name_, page.name_, space.id, page.id, count(1), fact.page_,
page.resourceid_
  FROM  asfact_wc_pagevie_0 fact, asdim_wc_groupsp_0 space, asdim_wc_pages_0 page,
asdim_wc_applica_0 app
  WHERE space.id = fact.groupspace_
    and page.id = fact.page_
    and app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and page.personal_ = :ispersonal
    and space.name_ is not null
    and page.name_ is not null
    and space.id is not null
    and page.id is not null
    and fact.page_ is not null
    and page.resourceid_ is not null
GROUP BY space.name_, page.name_, space.id, page.id, fact.page_, page.resourceid_
ORDER BY count(1) desc
```

Figure 47–9 Creating SQL Data Control Dialog in WebCenter Portal



Create New Data Control

Database Connection: jdbc/WebCenterDS

Choose the connection from existing database objects: ActivitiesDS

* Enter password for verification: ●●●●●●

SQL Statement

```
SELECT  space.name_, page.name_, space.id, page.id, count(1), fact.page_, page.resourceid_
FROM asfact_wc_pagevie_0 fact , asdim_wc_groupsp_0 space , asdim_wc_pages_0 page ,
asdim_wc_applica_0 app
WHERE space.id = fact.groupspace_ and page.id = fact.page_ and app.id = fact.application_
   and fact.occurred between to_date(:startdate, :dateformat) and to_date(:enddate,
:dateformat) and app.name_ = :appname and page.personal_ = :ispersonal
   and space.name_ is not null and page.name_ is not null and space.id is not null and page.id is
```

Hint: Use *:bind-name* to refer to bind variables in the SQL Statement

Parameters

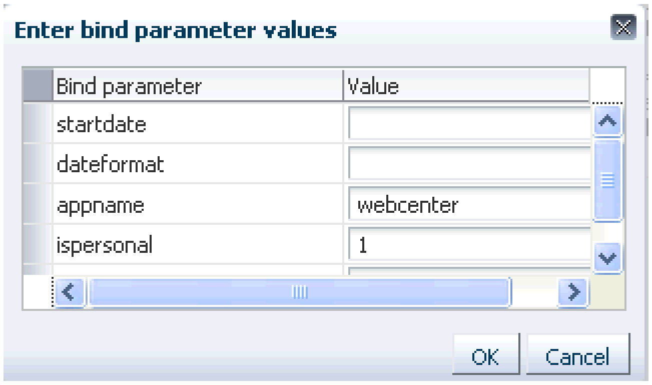
startdate=,dateformat=,appname=webcenter,ispersonal=1,enddate=

* Name: Page Hits By Day

Description: Number of page hits grouped by day

You can add as many bind parameters as required. When you add parameters, you can restrict the data retrieved from the data source based on the parameter values you specify. As this example is for the WebCenter Portal application, the name of the application is set to `webcenter` and personal pages (pages in the Home portal) are included in the report shown in Figure 47–10.

Figure 47–10 Setting Report Parameters



Enter bind parameter values

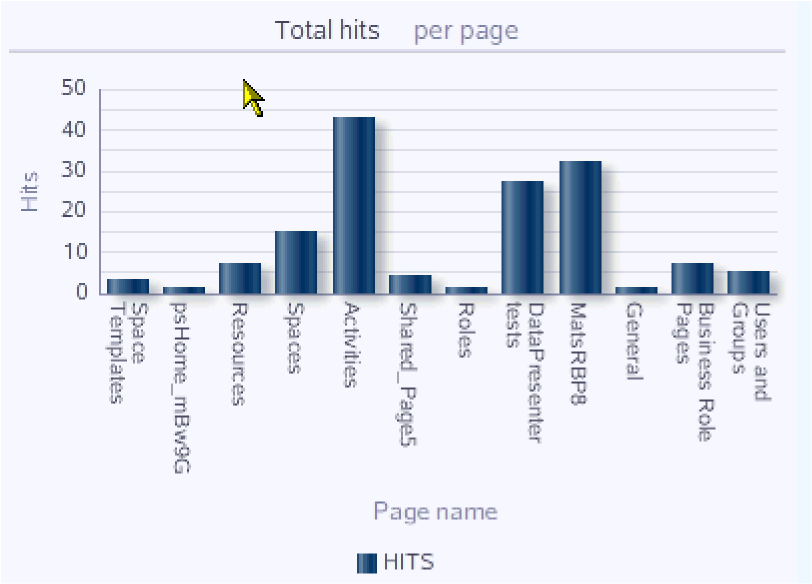
Bind parameter	Value
startdate	
dateformat	
appname	webcenter
ispersonal	1

Table 47–6 Report Parameters

Parameter	Default Value	Description
`appname`	`webcenter`	The corresponding application name. For portals, this will always be `webcenter`. For Framework applications, the value is unique to the application.
`ispersonal`	`0 or 1`	For portals, determines whether or not pages created in the Home portal are included in the report.
`dateformat`	`mm/dd/yyyy hh24`	Any valid pattern for dates in an Oracle database. Every component of the pattern is optional since it depends on the data you want to retrieve.
`startdate`	`01/01/2010`	Determines a start date for the data required.
`enddate`	`01/01/2011`	Determines an end date for the data required.

Figure 47–9 shows the custom report displayed as a graph.

Figure 47–11 Sample Analytics Report - Page HIts by Day



47.3.2 SQL Statements for Out-of-the-Box Analytics Reports

This section provides SQL statements that can be used as a starting point for custom reports. You can customize these statements in many ways by providing additional filters, groupings, and so on.

- Analytics SQL: WebCenter Portal Traffic
- Analytics SQL: Page Traffic
- Analytics SQL: Login Metrics
- Analytics SQL: Portal Traffic
- Analytics SQL: Portal Response Time
- Analytics SQL: Portlet Traffic
- Analytics SQL: Portlet Instance Traffic
- Analytics SQL: Portlet Response Time
- Analytics SQL: Portlet Instance Response Time
- Analytics SQL: Search Metrics
- Analytics SQL: Document Metrics
- Analytics SQL: Wiki Metrics
- Analytics SQL: Blog Metrics
- Analytics SQL: Discussion Metrics

For a detailed list of database tables and parameters, see Appendix H, "WebCenter Portal Analytics Database Schema."

47.3.2.1 Analytics SQL: WebCenter Portal Traffic

```
SELECT 'Spaces' Name, count(1) Hits
  FROM asfact_wc_groupsp_0 fact, asdim_wc_groupsp_0 space, asdim_wc_applica_0 app
  WHERE space.id = fact.groupspace_
    and app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname and space.personal_ = :ispersonal
UNION ALL
  SELECT 'Pages' Name, count(1) Hits
  FROM asfact_wc_pagevie_0 fact , asdim_wc_pages_0 page , asdim_wc_applica_0 app
  WHERE page.id = fact.page_
    and app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and page.personal_ = :ispersonal
UNION ALL
  SELECT 'Portlets' Name, count(1) Hits
  FROM asfact_wc_portlet_0 fact, asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
UNION ALL
  SELECT 'Logins' Name, count(1) Hits
  FROM asfact_wc_logins_0 fact , asdim_wc_applica_0 app
  WHERE app.id = fact.application_
```

```
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
UNION ALL
  SELECT 'Searches' Name, count(1) Hits
  FROM asfact_wc_searche_0 fact , asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
UNION ALL
  SELECT 'Wikis' Name, count(1) Hits
  FROM asfact_wc_doclib__0 fact, asdim_wc_documen_0 doc, asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and fact.document_ = doc.id
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat) and app.name_ = :appname
    and doc.objecttype_ like '%WIKI%'
UNION ALL
  SELECT 'Blogs' Name, count(1) Hits
  FROM asfact_wc_doclib__0 fact, asdim_wc_documen_0 doc, asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and fact.document_ = doc.id
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and doc.objecttype_ like '%BLOG%'
UNION ALL
  SELECT 'Documents' Name, count(1) Hits
  FROM asfact_wc_doclib__0 fact, asdim_wc_documen_0 doc, asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and fact.document_ = doc.id
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and doc.objecttype_ like '%DOCUMENT%'
UNION ALL
  SELECT 'Discussions' Name, count(1) Hits
  FROM asfact_wc_discuss_1 fact, asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
```

47.3.2.2 Analytics SQL: Page Traffic

```
SELECT  space.name_, page.name_, space.id, page.id, count(1), fact.page_,
page.resourceid_
  FROM asfact_wc_pagevie_0 fact, asdim_wc_groupsp_0 space, asdim_wc_pages_0 page,
asdim_wc_applica_0 app
  WHERE space.id = fact.groupspace_
    and page.id = fact.page_
    and app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and page.personal_ = :ispersonal
    and space.name_ is not null
    and page.name_ is not null
    and space.id is not null
    and page.id is not null
    and fact.page_ is not null
    and page.resourceid_ is not null
GROUP BY space.name_, page.name_, space.id, page.id, fact.page_, page.resourceid_
ORDER BY count(1) desc
```

47.3.2.3 Analytics SQL: Login Metrics

```
SELECT  count(1)
 FROM asfact_wc_logins_0 fact, asdim_wc_applica_0 app
 WHERE app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
```

47.3.2.4 Analytics SQL: Portal Traffic

```
SELECT  space.name_, space.id, count(1), fact.groupspace_, space.resourceid_
  FROM asfact_wc_groupsp_0 fact, asdim_wc_groupsp_0 space, asdim_wc_applica_0 app
  WHERE space.id = fact.groupspace_
    and app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and space.personal_ = :ispersonal
    and space.name_ is not null
    and space.id is not null
    and fact.groupspace_ is not null
    and space.resourceid_ is not null
GROUP BY space.name_, space.id, fact.groupspace_, space.resourceid_
ORDER BY count(1) desc
```

47.3.2.5 Analytics SQL: Portal Response Time

```
SELECT  space.name_, space.id, avg(fact.response_time_), fact.groupspace_,
space.resourceid_
  FROM asfact_wc_groupsp_0 fact, asdim_wc_groupsp_0 space, asdim_wc_applica_0 app
  WHERE space.id = fact.groupspace_
    and app.id = fact.application_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and space.personal_ = :ispersonal
    and space.name_ is not null
    and space.id is not null
    and fact.groupspace_ is not null
    and space.resourceid_ is not null
GROUP BY space.name_, space.id, fact.groupspace_, space.resourceid_
```

47.3.2.6 Analytics SQL: Portlet Traffic

```
SELECT  portlet.default_title_, portlet.id, count(1), fact.portlet_,
portlet.resourceid_
  FROM asfact_wc_portlet_0 fact, asdim_wc_portlet_0 portlet, asdim_wc_applica_0
app
  WHERE app.id = fact.application_
    and portlet.id = fact.portlet_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and portlet.default_title_ is not null
    and portlet.id is not null
    and fact.portlet_ is not null
    and portlet.resourceid_ is not null
GROUP BY portlet.default_title_, portlet.id, fact.portlet_, portlet.resourceid_
```

47.3.2.7 Analytics SQL: Portlet Instance Traffic

```
SELECT  space.name_, space.id, page.name_, page.id, portletinst.title_,
portletinst.id, count(1), fact.portlet_instance_, portletinst.resourceid_
  FROM asfact_wc_portlet_0 fact, asdim_wc_groupsp_0 space, asdim_wc_pages_0 page,
asdim_wc_portlet_1 portletinst, asdim_wc_applica_0 app
  WHERE space.id = fact.groupspace_
    and page.id = fact.page_
    and app.id = fact.application_
    and portletinst.id = fact.portlet_instance_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and space.name_ is not null
    and space.id is not null
    and page.name_ is not null
    and page.id is not null
    and portletinst.title_ is not null
    and portletinst.id is not null
    and fact.portlet_instance_ is not null
    and portletinst.resourceid_ is not null
GROUP BY space.name_, space.id, page.name_, page.id, portletinst.title_,
portletinst.id, fact.portlet_instance_, portletinst.resourceid_
```

47.3.2.8 Analytics SQL: Portlet Response Time

```
SELECT  portlet.default_title_, portlet.id, avg(fact.response_time_),
fact.portlet_, portlet.resourceid_
  FROM asfact_wc_portlet_0 fact, asdim_wc_portlet_0 portlet, asdim_wc_applica_0
app
  WHERE app.id = fact.application_
    and portlet.id = fact.portlet_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and portlet.default_title_ is not null
    and portlet.id is not null
    and fact.portlet_ is not null
    and portlet.resourceid_ is not null
GROUP BY portlet.default_title_, portlet.id, fact.portlet_, portlet.resourceid_
```

47.3.2.9 Analytics SQL: Portlet Instance Response Time

```
SELECT  space.name_, space.id, page.name_, page.id, portletinst.title_,
portletinst.id, avg(fact.response_time_), fact.portlet_instance_,
portletinst.resourceid_
  FROM asfact_wc_portlet_0 fact, asdim_wc_groupsp_0 space, asdim_wc_pages_0 page,
asdim_wc_portlet_1 portletinst, asdim_wc_applica_0 app
  WHERE space.id = fact.groupspace_
    and page.id = fact.page_
    and app.id = fact.application_
    and portletinst.id = fact.portlet_instance_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and space.name_ is not null
    and space.id is not null
    and page.name_ is not null
    and page.id is not null
    and portletinst.title_ is not null
    and portletinst.id is not null
    and fact.portlet_instance_ is not null
    and portletinst.resourceid_ is not null
GROUP BY space.name_, space.id, page.name_, page.id, portletinst.title_,
portletinst.id, fact.portlet_instance_, portletinst.resourceid_
```

47.3.2.10 Analytics SQL: Search Metrics

```
SELECT  search.phrase_, search.id, count(1)
  FROM asfact_wc_searche_0 fact, asdim_wc_applica_0 app, asdim_wc_searche_0 search
  WHERE app.id = fact.application_
    and search.id = fact.searched_phrase_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and search.phrase_ is not null
    and search.id is not null
GROUP BY search.phrase_, search.id
```

47.3.2.11 Analytics SQL: Document Metrics

```
SELECT  doc.name_, doc.id, count(1), fact.document_, doc.resourceid_
  FROM asfact_wc_doclib__0 fact, asdim_wc_documen_0 doc, asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and fact.document_ = doc.id
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and doc.objecttype_ like '%DOCUMENT%'
    and doc.name_ is not null
    and doc.id is not null
    and fact.document_ is not null
    and doc.resourceid_ is not null
GROUP BY doc.name_, doc.id, fact.document_, doc.resourceid
```

47.3.2.12 Analytics SQL: Wiki Metrics

```
SELECT  doc.name_, doc.id, count(1), fact.document_, doc.resourceid_
  FROM asfact_wc_doclib__0 fact, asdim_wc_documen_0 doc, asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and fact.document_ = doc.id
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and doc.objecttype_ like '%WIKI%'
    and doc.name_ is not null
    and doc.id is not null
    and fact.document_ is not null
    and doc.resourceid_ is not null
GROUP BY doc.name_, doc.id, fact.document_, doc.resourceid_
```

47.3.2.13 Analytics SQL: Blog Metrics

```
SELECT  doc.name_, doc.id, count(1), fact.document_, doc.resourceid_
  FROM asfact_wc_doclib__0 fact, asdim_wc_documen_0 doc, asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and fact.document_ = doc.id
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and doc.objecttype_ like '%BLOG%'
    and doc.name_ is not null
    and doc.id is not null
    and fact.document_ is not null
    and doc.resourceid_ is not null
GROUP BY doc.name_, doc.id, fact.document_, doc.resourceid_
```

47.3.2.14 Analytics SQL: Discussion Metrics

```
SELECT  forum.name_, forum.id, count(1), fact.topic_, forum.resourceid_
  FROM asfact_wc_discuss_0 fact, asdim_wc_discuss_0 forum, asdim_wc_applica_0 app
  WHERE app.id = fact.application_
    and forum.id = fact.topic_
    and fact.occurred between to_date(:startdate, :dateformat)
    and to_date(:enddate, :dateformat)
    and app.name_ = :appname
    and forum.name_ is not null
    and forum.id is not null
    and fact.topic_ is not null
    and forum.resourceid_ is not null
GROUP BY forum.name_, forum.id, fact.topic_, forum.resourceid_
```

47.3.3 Sample Queries for User Metrics

This section provides example queries for user-specific metrics. It includes the following samples:

- Sample SQL: Filter by User Property
- Sample SQL: Group by User Property

For a detailed list of database tables and parameters and information on user properties, see Section H.5, "Analytics User Properties" in Appendix H, "WebCenter Portal Analytics Database Schema."

47.3.3.1 Sample SQL: Filter by User Property

The following query returns the names of the pages accessed by users in the Sales department, and the number of views for each of those pages.

```
SELECT p.name_ as page, count(*) as views
  FROM asfact_wc_pagevie_0 f
    JOIN asdim_wc_pages_0 p on f.page_ = p.id
    JOIN asdim_userpropertyvalues pv on f.userid = pv.userid
    JOIN asdim_userproperties pr on pv.propertyid = pr.id
  WHERE pr.name = 'DEPARTMENT'
    and pv.value = 'Sales'
GROUP BY p.name_
```

47.3.3.2 Sample SQL: Group by User Property

The following query returns the total number of page views broken down into departments.

```
SELECT pv.value as department, count(*) as views
  FROM asfact_wc_pagevie_0 f
    JOIN asdim_userpropertyvalues pv on f.userid = pv.userid
    JOIN asdim_userproperties pr on pv.propertyid = pr.id
  WHERE pr.name = 'DEPARTMENT'
```

```
GROUP BY pv.value
```

47.3.4 Sample Analytics Database Queries for Specific Metrics

This section provides example queries for specific metrics. It includes the following samples:

- Sample SQL: User Activities
- Sample SQL: Portal Activities
- Sample SQL: Portal Activities for a Specific Time Period
- Sample SQL: Activity for a Service During a Specific Time Period
- Sample SQL: Search Phrases
- Sample SQL: Page Views

For a detailed list of database tables and parameters, see Appendix H, "WebCenter Portal Analytics Database Schema."

47.3.4.1 Sample SQL: User Activities

The following query returns a list of all the activities executed by a specific user during a specific time period.

```
SELECT 'Logins' AS Activity, count(*) AS Events
  FROM asfact_wc_logins_0 f
    JOIN asdim_time t ON f.timeid = t.id
    JOIN asdim_users u ON f.userid = u.id
  WHERE u.userid = 'user1'
    AND f.timeid >= (SELECT id
                     FROM asdim_time
                     WHERE year = 2011
                       AND monthofyear = 0
                       AND dayofmonth = 1
                       AND hourofday = 0)
    AND f.timeid <  (SELECT id
                     FROM asdim_time
                     WHERE year = 2011
                       AND monthofyear = 1
                       AND dayofmonth = 1
                       AND hourofday = 0)
UNION ALL
  SELECT 'Searches' AS Activity, count(*) AS Events
  FROM asfact_wc_searche_0 f
    JOIN asdim_time t ON f.timeid = t.id
    JOIN asdim_users u ON f.userid = u.id
  WHERE u.userid = 'user1'
    AND f.timeid >= (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 0
                       and dayofmonth = 1
                       and hourofday = 0)
    AND f.timeid <  (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 1
                       and dayofmonth = 1
                       and hourofday = 0)
UNION ALL
```

```
   ...
```

Sample Report Output

```
Activity   Events
----------------
Logins        25
Searches      15
...
```

47.3.4.2 Sample SQL: Portal Activities

The following query returns a list of all activities executed in a specific portal.

```
SELECT g.name_ AS Space, 'Page views' AS Activity,
    count(*) AS Events
  FROM asfact_wc_pagevie_0 f
    JOIN asdim_time t ON f.timeid = t.id
    JOIN asdim_wc_groupsp_0 g ON f.groupspace_ = g.id
  WHERE g.name_ IN ('Project1', 'Project2')
    AND f.timeid >= (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 0
                       and dayofmonth = 1
                       and hourofday = 0)
    AND f.timeid <  (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 1
                       and dayofmonth = 1
                       and hourofday = 0)
  GROUP BY g.name_
UNION ALL
  SELECT g.name_ AS Space,
    'Portlet views' AS Activity, count(*) AS Events
  FROM asfact_wc_portlet_0 f
    JOIN asdim_time t ON f.timeid = t.id
    JOIN asdim_wc_groupsp_0 g ON f.groupspace_ = g.id
  WHERE g.name_ in ('Project1', 'Project2')
    AND f.timeid >= (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 0
                       and dayofmonth = 1
                       and hourofday = 0)
    AND f.timeid <  (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 1
                       and dayofmonth = 1
                       and hourofday = 0)
  GROUP BY g.name_
```

Sample Report Output

```
Space       Activity      Events
--------------------------------
Project1    PageViews         34
Project2    PageViews         42
Project1    PortletViews      98
Project2    PortletViews      74
```

47.3.4.3 Sample SQL: Portal Activities for a Specific Time Period

The following query returns a list of all activities executed in a specific portal during a specific time period.

```
SELECT 'Page views' AS Activity, count(*) AS Events
  FROM asfact_wc_pagevie_0 f
    JOIN asdim_time t ON f.timeid = t.id
    JOIN asdim_wc_groupsp_0 g ON f.groupspace_ = g.id
  WHERE g.name_ = 'Project1'
    AND f.timeid >= (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 0
                       and dayofmonth = 1
                       and hourofday = 0)
    AND f.timeid <  (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 1
                       and dayofmonth = 1
                       and hourofday = 0)
UNION ALL
  SELECT 'Portlet views' AS Activity, count(*) AS Events
  FROM asfact_wc_portlet_0 f
    JOIN asdim_time t ON f.timeid = t.id
    JOIN asdim_wc_groupsp_0 g ON f.groupspace_ = g.id
  WHERE g.name_ = 'Project1'
    AND f.timeid >= (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 0
                       and dayofmonth = 1
                       and hourofday = 0)
    AND f.timeid <  (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 1
                       and dayofmonth = 1
                       and hourofday = 0)
UNION ALL
   ...
```

Sample Report Output

```
Activity       Events
---------------------
Page views         15
Portlet views     200
```

47.3.4.4 Sample SQL: Activity for a Service During a Specific Time Period

The following query returns activity for a specific service (in this example, the login service) during a specific time period and groups results by user.

```
SELECT u.userid AS "User", count(*) AS "Logins"
FROM asfact_wc_logins_0 f
  JOIN asdim_time t ON f.timeid = t.id
  JOIN asdim_users u ON f.userid = u.id
WHERE f.timeid >= (select id
                   from asdim_time
                   where year = 2011
```

```
                     and monthofyear = 0
                     and dayofmonth = 1
                     and hourofday = 0)
    AND f.timeid <  (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 1
                       and dayofmonth = 1
                       and hourofday = 0)
GROUP BY u.userid
ORDER BY "Logins" DESC
```

Sample Report Output

```
User      Logins
--------------
user3     245
user1     240
user2     193
```

47.3.4.5 Sample SQL: Search Phrases

The following query returns the phrases searched during a specific time and lists how many times each search was executed.

```
SELECT s.phrase_ AS "Search Phrase", count(*) AS "Times"
FROM asfact_wc_searche_0 f
  JOIN asdim_time t ON f.timeid = t.id
  JOIN asdim_users u ON f.userid = u.id
  JOIN asdim_wc_searche_0 s ON f.searched_phrase_ = s.id
WHERE u.userid = 'user1'
  AND f.timeid >= (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 0
                       and dayofmonth = 1
                       and hourofday = 0)
    AND f.timeid <  (select id
                     from asdim_time
                     where year = 2011
                       and monthofyear = 1
                       and dayofmonth = 1
                       and hourofday = 0)
GROUP BY u.userid, s.phrase_
ORDER BY count(*) DESC, s.phrase_
```

Sample Report Output

```
Search Phrase      Times
------------------------
product prices         4
sales report 2011      1
```

47.3.4.6 Sample SQL: Page Views

The following query returns the pages viewed by a specific user during a specific time period.

```
SELECT u.userid AS "User", count(*) AS "Views"
FROM asfact_wc_pagevie_0 f
  JOIN asdim_time t ON f.timeid = t.id
  JOIN asdim_users u ON f.userid = u.id
  JOIN asdim_wc_pages_0 p ON f.page_ = p.id
  JOIN asdim_wc_groupsp_0 g ON f.groupspace_ = g.id
WHERE g.name_ = 'Space 1'
  AND p.name_ = 'Page 1'
  AND f.timeid >= (select id
                   from asdim_time
                   where year = 2011
                     and monthofyear = 0
                     and dayofmonth = 1
                     and hourofday = 0)
  AND f.timeid <  (select id
                   from asdim_time
                   where year = 2011
                     and monthofyear = 1
                     and dayofmonth = 1
                     and hourofday = 0)
GROUP BY u.userid
ORDER BY count(*) DESC
```

Sample Report Output

```
User    Views
--------------
user3     245
user1     190
user2      65
```

Part VIII

Helping Users Keep Track

Part VIII contains the following chapters:

48

Integrating Events

This chapter explains how to integrate events functionality into a WebCenter Framework application at design time.

This chapter includes the following sections

- Section 48.1, "Introduction to Events"
- Section 48.2, "Basic Configuration for Events"
- Section 48.3, "Using the Events REST API"
- Section 48.4, "Troubleshooting Events"

For information about managing and including events, see:

- the "Managing Calendar Events" chapter in *Administering Oracle WebCenter Portal*.
- the "Working with Events" chapter in *Using Oracle WebCenter Portal*.

48.1 Introduction to Events

In Portal Framework applications, events provide access to your personal Microsoft Exchange calendar.

This section includes to following subsections:

- Section 48.1.1, "Understanding Events"
- Section 48.1.2, "Requirements for Events"
- Section 48.1.3, "What Happens at Runtime"

48.1.1 Understanding Events

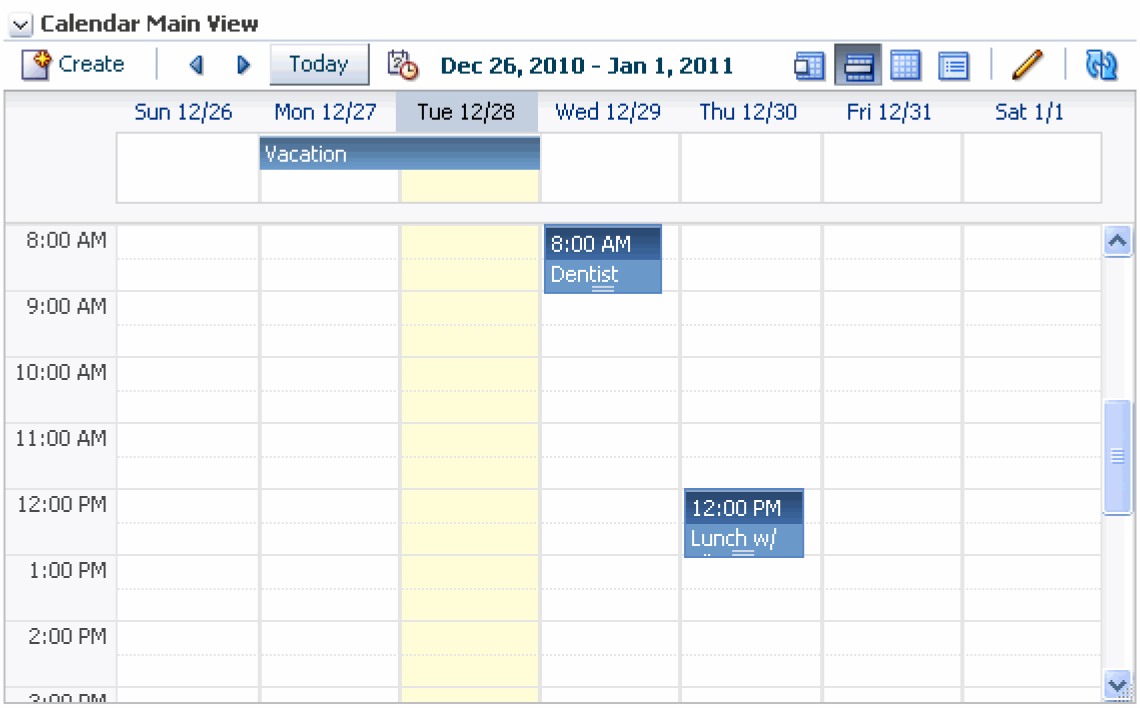
With events, users can:

- Display their Microsoft Exchange calendars in the application.
- Create, edit, and delete events in their Exchange calendars.
- Change the view of the Events task flow to view calendar events by month, week, or day, or as a list.
- Personalize the Events task flow to display events based on the start time, secondary time zone, list type, and list count

Events is integrated with many WebCenter Portal tools and components, such as links, mail, and search.

Figure 48–1 shows an example of a personal calendar in a Framework application.

Figure 48–1 Personal Calendar



48.1.2 Requirements for Events

Events integrates with Microsoft Exchange Server to provide access to personal calendars. You must install and configure the appropriate server.

For information about installing and configuring Exchange Server, see "Events Prerequisites for Personal Events" in the *Administering Oracle WebCenter Portal*.

48.1.3 What Happens at Runtime

At runtime, users can view events from their Microsoft Exchange calendars.

For more information about events at runtime, see the chapter "Working with Events" in the *Using Oracle WebCenter Portal*.

Note: *Using Oracle WebCenter Portal* discusses both personal events and portal events. Only the information on personal events applies to Portal Framework applications.

48.2 Basic Configuration for Events

This section includes the following subsections:

- Section 48.2.1, "Configuration Roadmap for Events"
- Section 48.2.2, "Setting Up a Connection for Events"
- Section 48.2.3, "Adding Events Functionality at Design Time"
- Section 48.2.4, "Setting Security for Events"

48.2.1 Configuration Roadmap for Events

The flow chart (Figure 48–2) and table (Table 48–1) in this section provide an overview of the prerequisites and tasks required to get events working in Framework applications.

Figure 48–2 Configuring Events for Portal Framework Applications

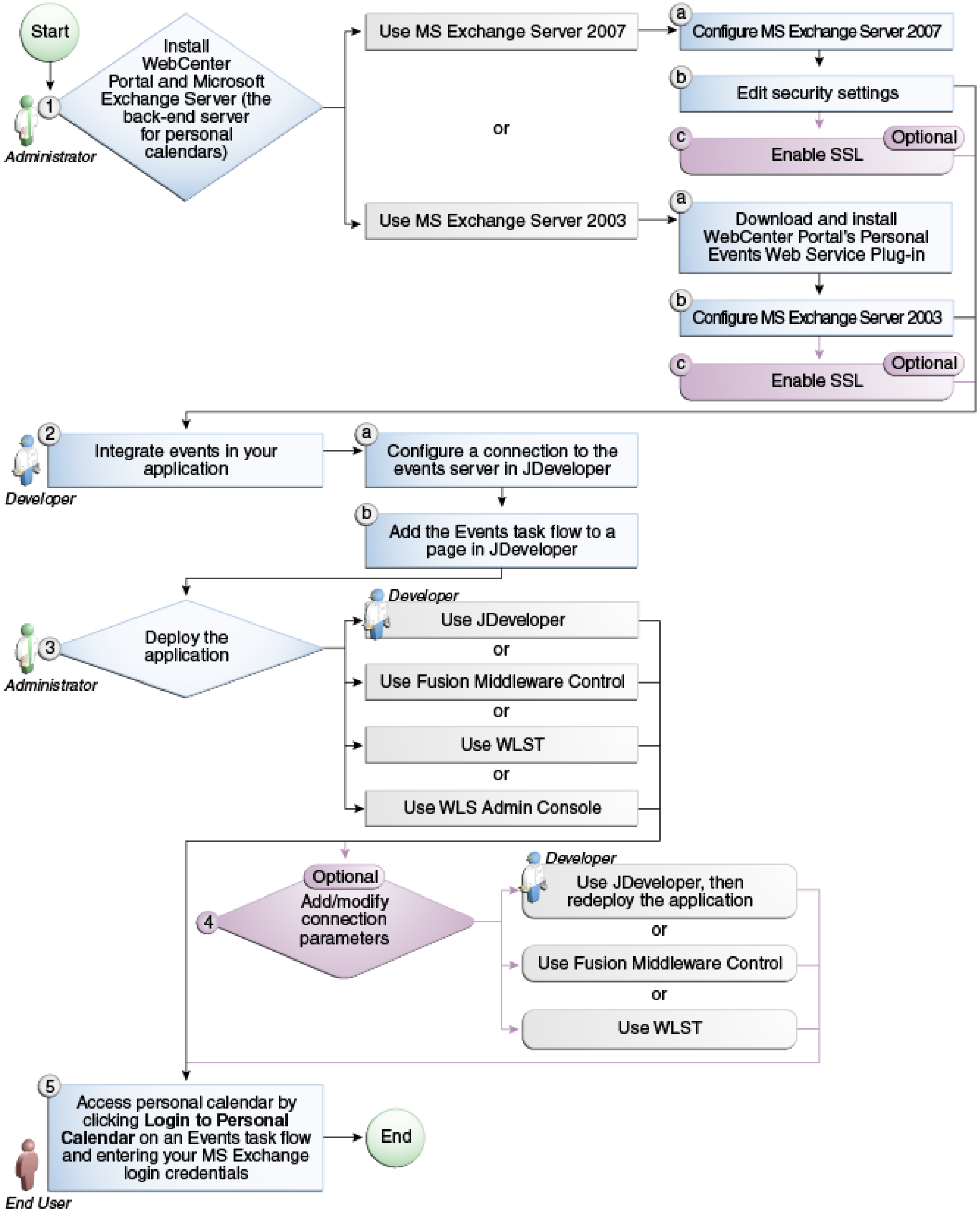

Start
1
Administrator
Install WebCenter Portal and Microsoft Exchange Server (the back-end server for personal calendars)
Use MS Exchange Server 2007
a
Configure MS Exchange Server 2007
b
Edit security settings
or
c
Optional
Enable SSL
Use MS Exchange Server 2003
a
Download and install WebCenter Portal's Personal Events Web Service Plug-in
b
Configure MS Exchange Server 2003
c
Optional
Enable SSL
2
Developer
Integrate events in your application
a
Configure a connection to the events server in JDeveloper
b
Add the Events task flow to a page in JDeveloper
3
Administrator
Deploy the application
Developer
Use JDeveloper
or
Use Fusion Middleware Control
or
Use WLST
or
Use WLS Admin Console
4
Optional
Add/modify connection parameters
Developer
Use JDeveloper, then redeploy the application
or
Use Fusion Middleware Control
or
Use WLST
5
End User
Access personal calendar by clicking **Login to Personal Calendar** on an Events task flow and entering your MS Exchange login credentials
End

Table 48–1 Configuring Events for Portal Framework Applications

Actor	Task	Sub-task	Notes
Administrator	**1.** Install WebCenter Portal and Microsoft Exchange Server		MS Exchange Server is the back-end server for personal calendars
	■ Use MS Exchange Server 2007	**1.a** Configure MS Exchange Server 2007 **1.b** Edit security settings **1.c** (Optional) Enable SSL	
	■ Use MS Exchange Server 2003	**1.a** Download and install WebCenter Portal's Personal Events Web Service Plug-in **1.b** Configure MS Exchange Server 2003 **1.c** (Optional) Enable SSL	
Developer	**2.** Integrate events in your application	**2.a** Configure a connection to the events server in JDeveloper **2.b** Add an Events task flow to a page in JDeveloper	
Developer/ Administrator	**3.** Deploy the application using one of the following tools: ■ JDeveloper (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator) ■ WLS Admin Console (Administrator)		
Developer/ Administrator	**4.** Add/modify connection parameters using one of the following tools: ■ JDeveloper, then redeploy the application (Developer) ■ Fusion Middleware Control (Administrator) ■ WLST (Administrator)		
End User	**5.** Access personal calendar		Click **Login to Personal Calendar** on the Events task flow and enter your MS Exchange login credentials

48.2.2 Setting Up a Connection for Events

To take advantage of events functionality, you must first create a connection to the Exchange server from your Framework application. To do this, ensure that you have the connection information for the server.

You can register several server connections for events, but only one connection is active at a time.

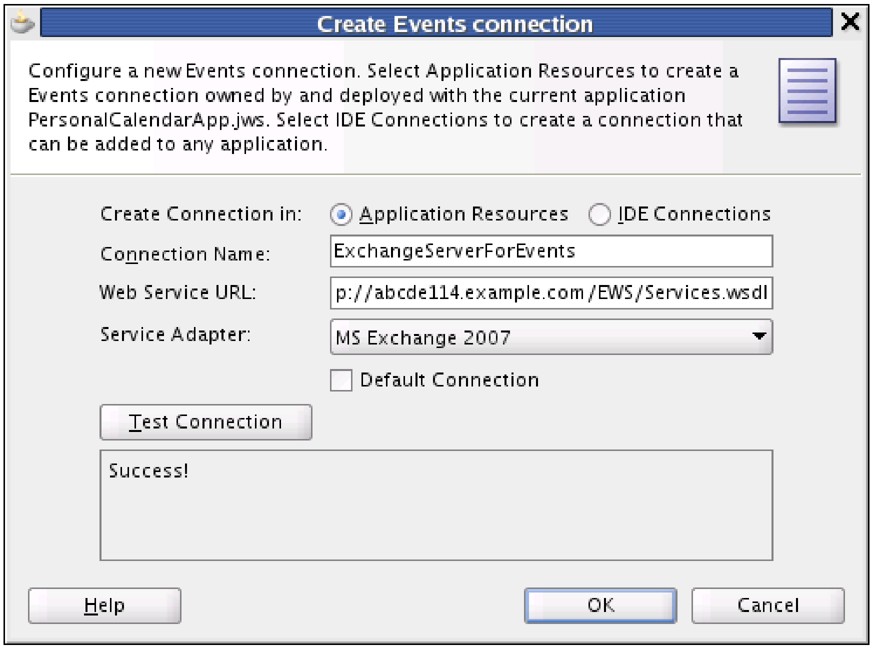
> **Note:** While you can set up the connections to back-end servers at design time in JDeveloper, you can later add, delete, or modify connections in your deployed environment using Enterprise Manager Fusion Middleware Control. For more information, see the section "Registering Events Servers Using Fusion Middleware Control" in the *Administering Oracle WebCenter Portal*.

To set up a connection for events:

1. In JDeveloper, open the application in which you plan to consume events.
2. To create a connection that is available to all applications, in the Resource Palette, click the **New** icon and choose **New Connection** and then **WebCenter Personal Event Connection**.

   To create a connection that is available to the current application only, in the Application Resources panel of the Application Navigator, right-click **Connections** and choose **New Connection** and then **WebCenter Personal Event Connection**.
3. In the Create Events Connection dialog, in the **Connection Name** field, enter a meaningful name, for example `ExchangeServerForEvents` (Figure 48–3).

Figure 48–3 Create Events Connection Dialog



Create Events connection

Configure a new Events connection. Select Application Resources to create a Events connection owned by and deployed with the current application PersonalCalendarApp.jws. Select IDE Connections to create a connection that can be added to any application.

Create Connection in: ● Application Resources ○ IDE Connections

Connection Name: ExchangeServerForEvents

Web Service URL: p://abcde114.example.com/EWS/Services.wsdl

Service Adapter: MS Exchange 2007

□ Default Connection

Test Connection

Success!

4. In the **Web Service URL** field, enter the URL of the web service exposing the event application. Use the format:

   ```
   protocol://host:port/appWebServiceInterface/WSName
   ```

   For example:

   ```
   http://myexchange.com:80/ExchangeWS/PersonalEventsWebService.asmx
   http://myexchange.com:80/EWS/Services.wsdl
   ```
5. From the **Service Adapter** dropdown list, select the version of the Microsoft Exchange server to connect to:

- **MSExchange2003**
- **MSExchange2007**

6. Select **Default Connection** to use this connection for events. You can have multiple connections, but only one can be active (default).

> **Note:** After you create a connection as the active connection, you cannot edit it so that it is not the default. To use a different active connection, you must create a new connection and mark that as the default connection.

7. Click **Test Connection**, and if it is successful, then click **OK**.

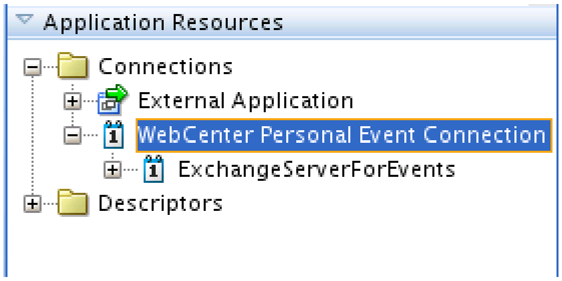
   If the test is not successful, check the settings and try again.

8. If you created the connection in the Resource Palette, you must add it to the application.

   In the Resource Palette, under IDE Connections, right-click the connection and choose **Add to Application**.

   The connection is listed in the Application Resources panel of the Application Navigator (Figure 48–4). An external application connection is also created to store the user names and passwords of users who connect to the Exchange server.

Figure 48–4 Application Resources - Personal Event Connection



48.2.3 Adding Events Functionality at Design Time

This section includes the following subsections:

- Section 48.2.3.1, "Events Task Flows"
- Section 48.2.3.2, "How to Add Events Functionality to Your Application"

48.2.3.1 Events Task Flows

Events task flows enable you to add a main view or quick view of events to a page.

Table 48–2 Events Task Flows

Task Flow	Description
Calendar Main View	This task flow displays a calendar of events and provides users with options to view events in day, week, month, or list view.
Calendar Mini View	This task flow displays a calendar, similar to Calendar Main View, however, it requires less space. Only users with permission to edit the page and task flow can configure the event view (available in day or list view).

48.2.3.2 How to Add Events Functionality to Your Application

To add an Events task flow to your application:

1. Follow the steps described in Section 4.2, "Preparing Your Framework Application for Tools and Services," to implement security and create a new customizable page in your application.
2. Open the page on which you want to add the task flow.
3. In the Resource Palette, expand **My Catalogs**, **WebCenter Portal - Services Catalog**, and **Task Flows**.
4. Drag **Calendar Main View** or **Calendar Mini View** and drop it onto the page, inside the `af:form` tags.
5. When prompted, select **Region** as the way to create the task flow.
6. The Events task flows are contained within the `event-view.jar` library, so click **Add Library** to add the library to your project. This operation may take a moment to complete.
7. Click **OK**.
8. Save and run your page.

   Figure 48–5 shows the Calendar Main View task flow at runtime.

Figure 48–5 Calendar Main View Task Flow

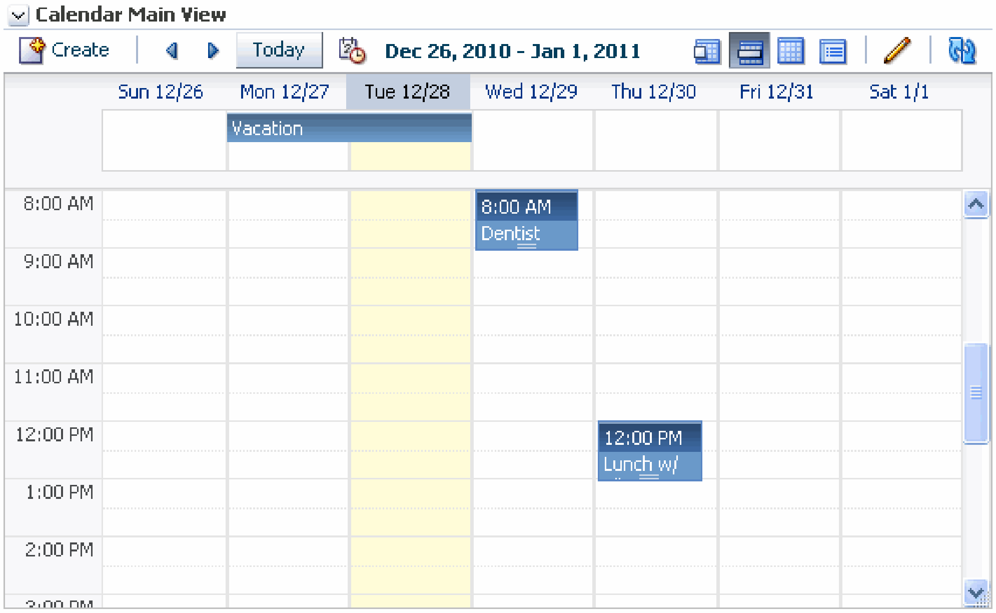
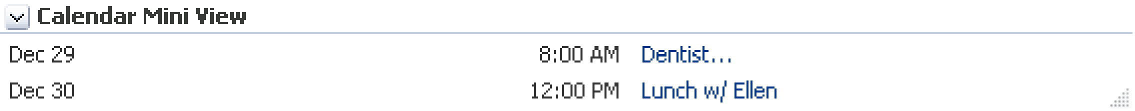


Figure 48–6 shows the Calendar Mini View task flow at runtime.

Figure 48–6 Calendar Mini View Task Flow


Calendar Mini View

Dec 29	8:00 AM	Dentist...
Dec 30	12:00 PM	Lunch w/ Ellen

48.2.4 Setting Security for Events

When you create the connection to the Microsoft Exchange Server for events, an external application connection is also created. This external application connection is created to store the user name and password of users in the Microsoft Exchange Server. For more information, see Section 48.2.2, "Setting Up a Connection for Events."

48.3 Using the Events REST API

WebCenter Portal provides a REST API to support events. Use the REST API to create your own interface for providing access to portal events.

Note: The Events REST API is available for portal events only. You cannot use the REST API to work with personal events.

This section describes the REST API methods associated with events. It includes the following subsections:

- Section 48.3.1, "Events Entry Point"
- Section 48.3.2, "Events Resource Type Taxonomy"
- Section 48.3.3, "Security Considerations"
- Section 48.3.4, "Events Resource Types"

48.3.1 Events Entry Point

The entry point for events can be reached only through a portal. First you need to navigate to the appropriate portal and then find the link element with a `resourceType` of:

```
urn:oracle:webcenter:events:gsEvents
```

The corresponding `href` or `template` element provides the URI entry point. The client sends HTTP requests to this entry point to work with events.

For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index."

For more information about resource types, see Section 53.5.2.1, "Resource Type."

48.3.2 Events Resource Type Taxonomy

When the client has identified the entry point, it can then navigate through the resource type taxonomy to perform the required operations. For more information about the individual resources types, see the appropriate section in Section 48.3.4, "Events Resource Types."

The taxonomy for events is:

```
urn:oracle:webcenter:events:gsEvents
  urn:oracle:webcenter:events:gsEvent
urn:oracle:webcenter:events:gsCategories
```

48.3.3 Security Considerations

There are no specific security considerations for events. For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

48.3.4 Events Resource Types

This section provides you with all the information you need to know about each resource type. It includes the following subsections:

- Section 48.3.4.1, "urn:oracle:webcenter:events:gsEvents"
- Section 48.3.4.2, "urn:oracle:webcenter:events:gsEvent"
- Section 48.3.4.3, "urn:oracle:webcenter:events:gsCategories"

48.3.4.1 urn:oracle:webcenter:events:gsEvents

Use this resource to identify the URI to use to retrieve (`GET`) and create (`POST`) portal events. The response from a `GET` operation includes each portal event in this collection of events, and each event includes links used to operate on that event. The response from a `POST` operation includes the event that was created in this collection of events and a link to operate on that event.

Navigation Paths to gsEvents

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceIndex
   spaces
      gsEvents
```

Supported Methods for gsEvents

The following methods are supported by this resource:

- `GET`
  - **request - body:** <gsCategory>, **Parameters:** `startIndex`, `itemsPerPage`, `utoken`

    For information about these common parameters, see "Common Request Query Parameters".

    The following additional parameters are available:

    * `startDate`—the date from which to start listing portal events

    * `endDate`—the date at which to stop listing portal events

    For the start and end dates, use the format `YYYY-MM-DD`, for example `2011-09-01`. You can also specify a time (for example, `2011-09-01T09:00:00`) and a timezone sign (for example, for UTC, `2011-09-01T09:00:00Z`).
  - **response - body:** 0 or more events
- `POST`
  - **request - body:** event
  - **response - body:** event

Resource Types Linked to From gsEvents

Table 48–3 lists the resource types that the client can link to from this resource.

Table 48–3 Related Resource Types for gsEvents

rel	resourceType
self	urn:oracle:webcenter:events:gsEvents

48.3.4.2 urn:oracle:webcenter:events:gsEvent

Use this resource type to identify the URI to use to read (`GET`), update (`PUT`), or delete (`DELETE`) a specific portal event. The response from a `GET` operation includes the specific event identified by the URI. The response from a `PUT` operation includes the modified version of the event identified by the URI. The response from a `DELETE` operation is a 204.

Navigation Paths to gsEvent

```
resourceIndex
   spaces
      gsEvents
         gsEvent
```

Supported Methods for gsEvent

The following methods are supported by this resource:

- `GET`
  - **request - body:** none
  - **response - body:** event
- `PUT`
  - **request - body:** event
  - **response - body:** event
- `DELETE`
  - **request - body:** none
  - **response - body:** none

Writable Elements for gsEvent

Table 48–4 lists the writable elements for this resource.

Table 48–4 Writable Elements for gsEvent

Element	Type	Required	Constraints	Description
`category`	String	No	The name of an event category defined for the portal	The category to which the event belongs. **Note:** If the category does not exist, the default is used if the event is being created. However, an error will occur if the event is being modified.

Table 48–4 (Cont.) Writable Elements for gsEvent

Element	Type	Required	Constraints	Description
`details`	String	No	1 or more characters	Additional details about the event
`endTime`	Date	Yes	YYYY-MM-DDT HH:MM:SS `endTime` must be greater than or equal to `startTime`	The date and time at which the event ends
`location`	String	No	1 or more characters	The location at which the event takes place
`priority`	String?	No	1 - Highest 2 - High 3 - Normal 4 - Low 5 - Lowest	The priority of the event, which determines where it appears when events clash
`startTime`	Date	Yes	YYYY-MM-DDT HH:MM:SS	The date and time at which the event starts
`summary`	String	Yes	1 or more characters	A brief description of the event to serve as the title of the event

Read-only Elements for gsEvent

Table 48–5 lists the read-only elements for this resource.

Table 48–5 Read-only Elements for gsEvent

Element	Type	Description
`author`	personReference	User who created the event
`created`	Date	Date on which the event was created
`duration`	String	The length (in minutes) of the event
`groupSpace`	groupSpaceReference	The portal to which the event belongs
`id`	String	Unique ID of the event
`isAllDayEvent`	Boolean	Indicates whether the event takes place over an entire day
`modified`	Date	Date on which the event was last updated
`modifiedByUser`	personReference	User who last updated the event

Resource Types Linked to from gsEvent

Table 48–6 lists the resource types that the client can link to from this resource.

Table 48–6 Related Resource Types for gsEvent

rel	resourceType
self	urn:oracle:webcenter:events:gsEvent

48.3.4.3 urn:oracle:webcenter:events:gsCategories

Use this resource to identify the URI to use to retrieve (`GET`) and create (`POST`) portal event categories. The response from a `GET` operation includes each category in this collection of categories, and each category includes links used to operate on that category. The response from a `POST` operation includes the category that was created in this collection of categories and a link to operate on that category.

Navigation Paths to gsCategories

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceIndex
   spaces
      gsCategories
```

Supported Methods for gsCategories

The following methods are supported by this resource:

- `GET`
  - **request - body:** category
  - **response - body:** 0 or more categories
- `POST`
  - **request - body:** category
  - **response - body:** category

Resource Types Linked to From gsCategories

Table 48–7 lists the resource types that the client can link to from this resource.

Table 48–7 Related Resource Types for gsCategories

rel	resourceType
self	urn:oracle:webcenter:events:gsCategories

48.4 Troubleshooting Events

This section provides information to assist you in troubleshooting problems you may encounter while using events.

Problem

Error message displayed in calendar taskflow:

```
Personal Events is not configured properly. Rectify the configuration and then
click Try Again.
```

Solution

Confirm that you have created a Personal Event Connection. For more information, see Section 48.2.2, "Setting Up a Connection for Events."

Problem

After logging into the calendar with the right credentials, you continue to see the **Login to Personal Calendar** link rather than your events.

Solution

Confirm that the page on which calendar taskflow is added is a secured page. Anonymous users cannot log into the Personal Event Calendar server.

49

Integrating Lists

This chapter provides an overview of lists and describes how to integrate lists functionality in your WebCenter Portal application.

- Section 49.1, "Introduction to Lists"
- Section 49.2, "Basic Configuration for Lists"
- Section 49.3, "Adding Lists to a Resource Catalog"
- Section 49.4, "Using the Lists REST API"
- Section 49.5, "Troubleshooting Lists"

49.1 Introduction to Lists

This section provides an overview of list features and requirements. It includes the following subsections:

- Section 49.1.1, "Understanding Lists"
- Section 49.1.2, "What Happens to Lists at Runtime"

49.1.1 Understanding Lists

WebCenter Portal users can create lists and expose them for placement on portal pages at runtime. At design time, you can make the Lists task flow available in your runtime Resource Catalog. Portal administrators can add the task flow from the Catalog to a page and use the task flow to create lists.

At design time, you can add a code snippet to the Resource Catalog to ensure that populated lists are added to the Catalog at runtime, making them available for placement on your portal pages.

By default, only users assigned the seeded role `Administrator` have manage permissions on lists. This means at runtime such users can create, edit, and delete lists and edit list data. The default permission can be changed at deployment in `jazn-data.xml` or by using Fusion Middleware Control or the Application Policy Manager. Authorized users can change this permission at runtime at the component level (for more information, see Chapter 22, "Modifying Default Security Behavior of Composer Components"). Only role-based permission is supported.

49.1.2 What Happens to Lists at Runtime

At runtime, the Lists task flow provides controls for creating lists and adding list data. For information about these controls, see the sections, "Creating and Managing Lists," and "Adding and Managing List Data," in *Using Oracle WebCenter Portal*.

Tip: To enable users to work with lists at runtime, they must be explicitly permitted to do so. For more information, see Section 49.2.3, "Enabling Users to Work with Lists at Runtime."

49.2 Basic Configuration for Lists

This section describes the steps required for adding lists functionality to your portal. It includes the following subsections:

- Section 49.2.1, "Setting Up Connections for Lists"
- Section 49.2.2, "Adding Lists Functionality at Design Time"
- Section 49.2.3, "Enabling Users to Work with Lists at Runtime"

49.2.1 Setting Up Connections for Lists

Lists requires a connection to the database where the `WEBCENTER` schema is installed. All list data is stored in the database. For details about setting up a database connection to the database where the `WEBCENTER` schema is installed, see Section 4.2.2, "Setting Up a Database Connection."

Note: For details about installing the database and the `WEBCENTER` schema, see *Installation Guide for Oracle WebCenter Portal*.

49.2.2 Adding Lists Functionality at Design Time

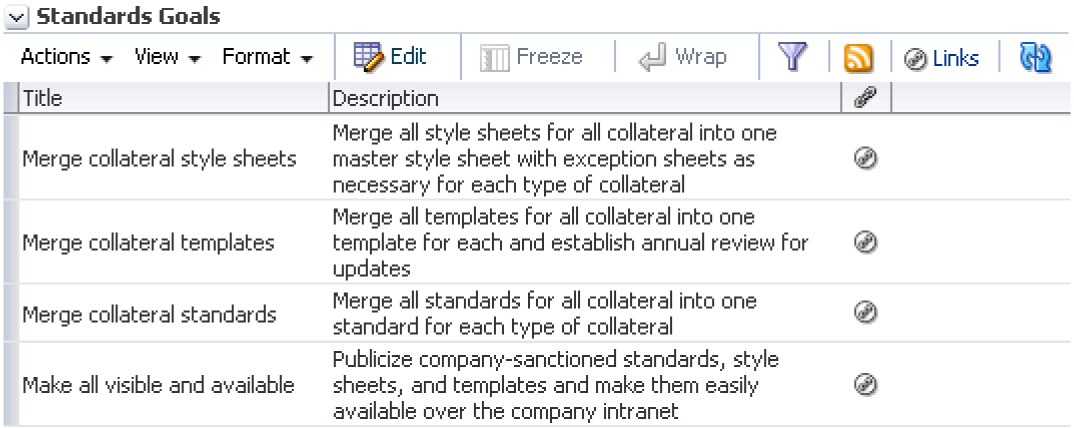
This section explains a basic integration of lists functionality. It includes the following subsections:

- Section 49.2.2.1, "Lists Task Flow"
- Section 49.2.2.2, "How to Add Lists Functionality to a Framework Application"

49.2.2.1 Lists Task Flow

Figure 49–1 shows the Lists task flow.

Figure 49–1 A List Rendered in the Lists Task Flow



Title	Description
Merge collateral style sheets	Merge all style sheets for all collateral into one master style sheet with exception sheets as necessary for each type of collateral
Merge collateral templates	Merge all templates for all collateral into one template for each and establish annual review for updates
Merge collateral standards	Merge all standards for all collateral into one standard for each type of collateral
Make all visible and available	Publicize company-sanctioned standards, style sheets, and templates and make them easily available over the company intranet

For information about the Lists task flow, see Section 49.1.2, "What Happens to Lists at Runtime."

49.2.2.2 How to Add Lists Functionality to a Framework Application

To add the Lists task flow to your Framework application:

1. Follow the steps described in Section 4.2, "Preparing Your Framework Application for Tools and Services" to implement security and create a new customizable page in your portal.
2. Create a JSF page on which to add the Lists task flow.
3. Configure security on the page.

   See Also: For more information, see Chapter 22, "Modifying Default Security Behavior of Composer Components."

4. In the Resource Palette, open **My Catalogs**, then **WebCenter Portal - Services Catalog**, then the **Task Flows** folder.
5. Drag and drop the **Lists** task flow onto your page, and select **Region** from the context menu.
6. Save and run your page to the browser.

49.2.3 Enabling Users to Work with Lists at Runtime

Out of the box, only the application administrator can work with lists. For users to see and work with lists at runtime, they must explicitly be granted, minimally, the permission `ListPermission:view`. At runtime, application administrators can assign this permission through the Role Manager task flow.

For example, to grant view access to lists to all authenticated users, the administrator can create the role `AllUsers` in the Role Manager task flow, add `authenticated-role` as a member, and grant view access on Lists.

If you plan to add lists functionality to your application, then you must also add the Role Manager task flow. If your application is based on a WebCenter Portal - Framework Application template, then the Role Manager task flow is available out of the box on the **Security** tab in **Administration** pages. At runtime, you can navigate to this page using the following URL:

```
http://host:port/appcontxtroot/faces/admin
```

Note: Roles and permissions created and granted through the Role Manager at design time are not packaged in the portal and are not available after deployment. The provisioning steps described in this section must be taken after deployment.

See Also: For information about the Role Manager task flow, see Section 74.4, "Using the Role Manager Task Flow."

49.3 Adding Lists to a Resource Catalog

If properly configured, the Resource Catalog makes populated lists available at runtime, enabling authorized users to add them to pages in edit mode. The procedure for adding components to an existing resource catalog or creating a custom catalog are described in Chapter 14, "Developing Resource Catalogs." This section provides an example of a code snippet to use to add lists to a resource catalog (Example 49–1).

Note: The values in uppercase are message keys for translated strings.

Example 49–1 Code to Add Lists to a Resource Catalog

```
<customFolder id="groupLists" visible="#{true}"
          factoryClass="oracle.webcenter.list.view.rc.ListServiceContextFactory">
     <attributes>
       <attribute value="LISTS_CUSTOM_FOLDER.TITLE" attributeId="Title"
          isKey="true"/>
       <attribute value="LISTS_CUSTOM_FOLDER.DESCRIPTION"
          attributeId="Description" isKey="true"/>
       <attribute value="LISTS_CUSTOM_FOLDER.KEYWORDS"
          attributeId="Subject" isKey="true"/>
       <attribute value="oracle.webcenter.list"
          attributeId="WEBCENTER_SERVICE_ID" isKey="false"/>
       <attribute value="/adf/webcenter/folderlists_qualifier.png"
          attributeId="IconURI"/>
     </attributes>
</customFolder>
```

49.4 Using the Lists REST API

Oracle WebCenter Portal provides a REST API to allow access to Lists functionality through interfaces other than the provided task flows. You can use the Lists REST API to perform the following actions:

- Work with lists in a portal, such as retrieving a list of lists or adding a new list
- Work with one list, such as retrieving or updating list metadata, or deleting the list
- Work with rows in a list
- Work with a list row, such as retrieving, updating, or deleting the row
- Work with list columns, such as adding a column
- Work with a list column, such as retrieving, updating, or deleting the column

This section describes the REST API methods associated with lists. It includes the following subsections:

- Section 49.4.1, "Entry Point for Lists"
- Section 49.4.2, "Lists Resource Type Taxonomy"
- Section 49.4.3, "Lists Security Considerations"
- Section 49.4.4, "Lists Resource Types"

See Also: For an introduction to the REST APIs, see Chapter 53, "Using Oracle WebCenter Portal REST APIs."

49.4.1 Entry Point for Lists

To get to the REST entry point for lists in a portal in WebCenter Portal, you search for the specific portal and retrieve the resource index. The corresponding `href` or `template` element provides the URI entry point, which retrieves the lists in the portal.

1. Navigate to the portal or subportal for which to retrieve the lists.
2. Retrieve the resource index:

```
urn:oracle:webcenter:resourceindex
```

3. Navigate to the returned `href`.
4. Search for the resource type. For example, for all the lists in a portal, search for:

```
urn:oracle:webcenter:space:lists
```

> **See Also:** For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index."
>
> For more information about resource types, see Section 53.5.2.1, "Resource Type."

49.4.2 Lists Resource Type Taxonomy

When the client has identified the entry point, it can then navigate through the resource type taxonomy to perform the required operations. The resource type taxonomy for lists is:

```
urn:oracle:webcenter:space:lists
urn:oracle:webcenter:space:list
     urn:oracle:webcenter:space:list:rows
     urn:oracle:webcenter:space:list:row
     urn:oracle:webcenter:space:list:columns
     urn:oracle:webcenter:space:list:column
```

49.4.3 Lists Security Considerations

You must be logged in to the REST service to access any of the Lists REST API methods. After that, the underlying service handles permission checking.

> **See Also:** For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

49.4.4 Lists Resource Types

This section provides you with all the information you need to know about each resource type. It includes the following subsections:

- Section 49.4.4.1, "urn:oracle:webcenter:space:lists"
- Section 49.4.4.2, "urn:oracle:webcenter:space:list"
- Section 49.4.4.3, "urn:oracle:webcenter:space:list:rows"
- Section 49.4.4.4, "urn:oracle:webcenter:space:list:row"
- Section 49.4.4.5, "urn:oracle:webcenter:space:list:columns"
- Section 49.4.4.6, "urn:oracle:webcenter:space:list:column"

49.4.4.1 urn:oracle:webcenter:space:lists

The `lists` response provides a means of retrieving the lists in a given portal (`GET`) and adding lists to a portal (`POST`). This section includes the following subsections:

- Section 49.4.4.1.1, "Navigation Paths to lists"
- Section 49.4.4.1.2, "Supported Methods for lists"
- Section 49.4.4.1.3, "Resource Types Linked to from lists"

49.4.4.1.1 Navigation Paths to lists This section shows how the client can navigate through the hypermedia to access the `lists` resource:

```
urn:oracle:webcenter:resourceindex
     urn:oracle:webcenter:spaces
          urn:oracle:webcenter:space:resourceindex
               urn:oracle:webcenter:space:lists
```

49.4.4.1.2 Supported Methods for lists The `lists` resource type supports the following methods:

- Method (lists): `GET`
- Method (lists): `POST`

Method (lists): `GET`

This method retrieves the lists in a portal.

- Resource URI, for example:

  ```
  http://host:port/rest/api/spaces/vs1/lists?q=name:equals:ProjectIssues&utoken=F
  Kld8laI3QRdi8TgQkOCGEzxL5x_w**
  ```

- Request body: none
- Request headers: [Accept = `application/xml` | `application/json`]
- Request parameters - `startIndex`, `itemsPerPage`, `q`, `projection`
  - `q` parameter for query, format `'q=attribute:operator:value'`, for example:

    `'q=name:equals:ProjectIssues'`

    - Supported operators for Strings: `equals`, `not.equals`, `contains`, `starts.with`
    - Supported operators for Dates: `equals`, `not.equals`, `greater.than`, `greater.than.or.equals`, `less.than`, `less.than.or.equals`
    - May specify several conditions separated by semicolon (;)
- Searchable attributes (Table 49–1)

Table 49–1 Searchable Attributes for lists GET Method

Element	Type	Description
name	string	Name of list
description	string	Description of list
creator	string	User who created list
created	date	Date the list was created
modifier	string	User who modified list
modified	date	Date the list was last modified

- Response status: `200` [OK]
- Response body: `<lists>`
- Example:

  ```
  <lists resourceType="urn:oracle:webcenter:space:lists">
       <links>
  ```

```
          <link resourceType="urn:oracle:webcenter:list:lists"
               rel="self" href="opaque"/>
          <link template="opaque?startIndex={startIndex}&
               itemsPerPage={itemsPerPage}&q={searchTerms}&
               projection={projection}
               &stoken=FDgsOu7a2NTTM1cLJvnpkDXfihtHx5Q*"
               resourceType="urn:oracle:webcenter:list:lists"/>
     </links>
     <items>
          <list resourceType="urn:oracle:webcenter:space:list">
               <links>
                    <link resourceType="urn:oracle:webcenter:list" rel="self"
                         href="opaque"
                         capabilities="urn:oracle:webcenter:update
                         urn:oracle:webcenter:delete"/>
                    <link resourceType="urn:oracle:webcenter:list:rows"
                         href="opaque"
                         capabilities="urn:oracle:webcenter:create"/>
                    <link template="opaque?
                         startIndex={startIndex}&
                         itemsPerPage={itemsPerPage}&q={searchTerms}&
                         stoken=FDgsOu7a2NTTM1cLJvnpkDXfihtHx5Q*"
                         resourceType="urn:oracle:webcenter:list:rows"/>
                    <link resourceType="urn:oracle:webcenter:list:columns"
                         href="opaque"
                         capabilities="urn:oracle:webcenter:create"/>
               </links>
               <id>/oracle/webcenter/list/scopedMD/
                    se0dea180_e2c1_45ac_b08b_
                    ba2c0b26aa72/lists/ProjectIssues.xml</id>
               <name>Project Issues</name>
               <description/>
          </list>
     </items>
</lists>
```

Method (lists): POST

This method creates a list in a portal.

- Resource URI, for example:

  `http://host:port/rest/api/spaces/vs1/lists?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**`

- Request body: `<list>`
- Writable elements (Table 49–2)

Table 49–2 Create List Writable Elements

Element	Type	Constraints	Description
name[1]	string	—	Name of list
description	string	—	Description of list
columns[1]	`urn:oracle:webcenter:space:list:columns`	1 to 30	List columns

[1] Denotes required element

- Example:

```
<list>
     <name>RestExample</name>
     <description>Created using rest api</description>
     <columns>
          <items>
               <metaColumn>
                    <name>No.</name>
                    <dataType>number</dataType>
               </metaColumn>
               <metaColumn>
                    <name>Description</name>
                    <dataType>string</dataType>
               </metaColumn>
          </items>
     </columns>
</list>
```

- Request headers: `Content-Type = application/xml | application/json`, [Accept = `application/xml | application/json`]
- Response status: `201` [Created]
- Response body: `<list>`
- Retrieved elements (Table 49–3)

Table 49–3 Retrieved Elements from lists

Element	Type	Description
id	string	List ID
name	string	List name
description	string	List description
scope.guid	string	GUID of portal to which the list belongs
scope.name	string	Name of the portal to which the list belongs
creator	string	Name of the user who created the list
created	date	Date the list was created
modifier	string	Name of the user who last modified the list
modified	date	Date the list was last modified
columns	`urn:oracle:webcenter:space:list:columns`	List columns

- Example:

```
<list resourceType="urn:oracle:webcenter:space:list">
     <links>
          <link resourceType="urn:oracle:webcenter:space:list" rel="self"
               href="http://host:port/rest/api/spaces/vs1/
               lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_
               83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
               fb03874979c0.xml)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:update urn:oracle:webcenter:delete"/>
          <link template="http://host:port
               /rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
               s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_
               417b_a35f_fb03874979c0.xml)/rows?
               utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_
               w**&startIndex={startIndex}&itemsPerPage={itemsPerPage}
               &q={searchTerms}&utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               resourceType="urn:oracle:webcenter:space:list:rows"
               href="http://host:port/rest/api/spaces/
               vs1/lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_
               83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
               fb03874979c0.xml)/rows?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:create"/>
          <link resourceType="urn:oracle:webcenter:space:list:columns"
               href="http://host:port/rest/api/spaces/
               vs1/lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_
               83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
               fb03874979c0.xml)/columns?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_
               w**" capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:create"/>
     </links>
     <id>/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_83ad_
          f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_fb03874979c0.xml</id>
     <name>RestExample</name>
     <description>Created using rest api</description>
     <scope>
          <guid>s355923f0_2f04_4fd0_83ad_f7dac2a7ceed</guid>
          <name>vs1</name>
     </scope>
     <creator>weblogic</creator>
     <author>
          <links>
               <link resourceType="urn:oracle:webcenter:people:person"
                    rel="via" href="http://host:port/
                    rest/api/people/E9A35E80F0BC11DFBFBE0FE339E55B21/lists/
                    @self?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="image/png"
                    template="http://host:port/
                    webcenter/profilephoto/45394133354538304630424
                    33131444642464245304645333339453535423231/{size}?
                    _xResourceMethod=wsrp"
                    resourceType="urn:oracle:webcenter:people:person"
                    rel="urn:oracle:webcenter:people:icon"
                    href="http://host:port/webcenter/
                    profilephoto/4539413335453830463042433131444642464245304645
                    333339453535423231/SMALL?_xResourceMethod=wsrp"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="text/html"
                    resourceType="urn:oracle:webcenter:spaces:profile"
                    rel="alternate" href="http://host:port/
                    webcenter/faces/oracle/webcenter/webcenterapp/view/pages/
                    peopleconn/UserProfileGallery.jspx?wc.username=weblogic"
                    capabilities="urn:oracle:webcenter:read"/>
          </links>
          <displayName>weblogic</displayName>
          <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
          <id>weblogic</id>
     </author>
     <created>2010-11-18T06:10:32.250-08:00</created>
     <modifier>weblogic</modifier>
     <modifiedByUser>
          <displayName>weblogic</displayName>
          <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
          <id>weblogic</id>
     </modifiedByUser>
     <modified>2010-11-18T06:10:32.250-08:00</modified>
     <columns resourceType="urn:oracle:webcenter:space:list:columns">
          <links>
               <link resourceType="urn:oracle:webcenter:space:list:columns"
                    rel="self"
                    href="http://host:port/rest/api/spaces
                    /vs1/lists/(/oracle/webcenter/list/scopedMD/
                    s355923f0_2f04_4fd0_83ad_
                    f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
                    fb03874979c0.xml)/columns?utoken=
                    FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                    capabilities="urn:oracle:webcenter:read
                    urn:oracle:webcenter:create"/>
               <link resourceType="urn:oracle:webcenter:space:list"
                    rel="urn:oracle:webcenter:parent"
                    href="http://host:port/
                    rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
                    s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/
                    ls_c9cecbc7_756b_417b_a35f_fb03874979c0.xml)?
                    utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"/>
               </links>
               <items>
                    <metaColumn resourceType=
                         "urn:oracle:webcenter:space:list:column">
                         <links>
                              <link resourceType="urn:oracle:webcenter:space:
                                   list:column" rel="self
                                   "href="http://host:port/
                                   rest/api/spaces/vs1/lists/
                                   (/oracle/webcenter/list/scopedMD/
                                   s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/
                                   lists/ls_c9cecbc7_756b_417b_a35f_
                                   fb03874979c0.xml)/columns/
                                   (lco_9bdd1418_6004_40ba_a052_04e8335b7ee8)?
                                   utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                                   capabilities="urn:oracle:webcenter:read
                                   urn:oracle:webcenter:update
                                   urn:oracle:webcenter:delete"/>
                         </links>
                         <id>lco_9bdd1418_6004_40ba_a052_04e8335b7ee8</id>
                         <name>No.</name>
                         <dataType>number</dataType>
                         <required>false</required>
                         <displayLength>10</displayLength>
                         <format>number</format>
                         <allowLinks>false</allowLinks>
                    </metaColumn>
                    <metaColumn resourceType=
                         "urn:oracle:webcenter:space:list:column">
                         <links>
                              <link resourceType=
                                   "urn:oracle:webcenter:space:list:column"
                                   rel="self"
                                   href="http://host:port/
                                   rest/api/spaces/vs1/lists/(/oracle/
                                   webcenter/list/scopedMD/
                                   s355923f0_2f04_4fd0_83ad_
```

```
                                       f7dac2a7ceed/lists/ls_c9cecbc7_756b_
                                       417b_a35f_fb03874979c0.xml)/columns/
                                       (lco_3a31fd20_24f1_4422_99fd_c00d7bed4b24)?
                                       utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                                       capabilities="urn:oracle:webcenter:read
                                       urn:oracle:webcenter:update
                                       urn:oracle:webcenter:delete"/>
                        </links>
                        <id>lco_3a31fd20_24f1_4422_99fd_c00d7bed4b24</id>
                        <name>Description</name>
                        <dataType>string</dataType>
                        <required>false</required>
                        <maxLength>500</maxLength>
                        <displayLength>20</displayLength>
                        <allowLinks>false</allowLinks>
                        <editLines>1</editLines>
                   </metaColumn>
              </items>
         </columns>
    </list>
```

49.4.4.1.3 Resource Types Linked to from lists Table 49–4 lists the resource types that the client can link to from the `lists` resource.

Table 49–4 Resource Types Linked to from lists

rel	resourceType
self	`urn:oracle:webcenter:space:lists`
	`urn:oracle:webcenter:space:list`

49.4.4.2 urn:oracle:webcenter:space:list

The `list` response provides a means of retrieving, updating, and deleting an individual list. This section includes the following subsections:

- Section 49.4.4.2.1, "Navigation Paths to list"
- Section 49.4.4.2.2, "Supported Methods for list"
- Section 49.4.4.2.3, "Resource Types Linked to from list"

49.4.4.2.1 Navigation Paths to list This section shows how the client can navigate through the hypermedia to access the `list` resource:

```
urn:oracle:webcenter:resourceindex
     urn:oracle:webcenter:spaces
          urn:oracle:webcenter:space:resourceindex
               urn:oracle:webcenter:space:lists
                    urn:oracle:webcenter:space:list
```

49.4.4.2.2 Supported Methods for list The list resource type supports the following methods:

- Method (list): `GET`
- Method (list): `PUT`
- Method (list): `DELETE`

Method (list): GET

Use this method to retrieve a list.

- Resource URI, for example:

```
http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_bb806754_0652_4d49_9354_
5fb62dc3514d.xml)?utoken=FKld81alI3QRdi8TgQkOCGEzxL5x_w**
```

- Request body: none
- Request headers: [Accept = application/xml | application/json]
- Response status: 200 [OK]
- Response body: <list>
- Retrieved elements (Table 49–5)

Table 49–5 Retrieved Elements for list

Element	Type	Description
id	string	ID of the list
name	string	Name of the list
description	string	Description of the list
scope.guid	string	GUID of the portal to which the list belongs
scope.name	string	Name of the portal to which the list belongs
creator	string	User who created the list
created	Date	Date on which the list was created
modifier	string	User who last modified the list
modified	Date	Date on which the list was last modified
columns	urn:oracle:webcenter:space:list:columns	The columns that make up the list

- For example:

```
<list resourceType="urn:oracle:webcenter:space:list">
     <links>
          <link resourceType="urn:oracle:webcenter:space:list" rel="self"
               href="http://host:port/rest/api/spaces/vs1/
               lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_83ad_
               f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
               fb03874979c0.xml)?utoken=FKld81alI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:update
               urn:oracle:webcenter:delete"/>
          <link template="http://host:port
               /rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
               s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_
               417b_a35f_fb03874979c0.xml)/rows?
               utoken=FKld81alI3QRdi8TgQkOCGEzxL5x_w**&
               startIndex={startIndex}&itemsPerPage={itemsPerPage}&q=
               {searchTerms}&utoken=FKld81alI3QRdi8TgQkOCGEzxL5x_w**"
               resourceType="urn:oracle:webcenter:space:list:rows"
               href="http://host:port/rest/api/
               spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/s355923f0_
               2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
               fb03874979c0.xml)/rows?utoken=FKld81alI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:create"/>
          <link resourceType="urn:oracle:webcenter:space:list:columns"
               href="http://host:port/rest/api/spaces/
               vs1/lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_
               83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
               fb03874979c0.xml)/columns?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_
               w**" capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:create"/>
     </links>
     <id>/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_83ad_
          f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_fb03874979c0.xml</id>
     <name>RestExample</name>
     <description>Created using rest api</description>
     <scope>
          <guid>s355923f0_2f04_4fd0_83ad_f7dac2a7ceed</guid>
          <name>vs1</name>
     </scope>
     <creator>weblogic</creator>
     <author>
          <links>
               <link resourceType="urn:oracle:webcenter:people:person"
                    rel="via" href="http://host:port/
                    rest/api/people/E9A35E80F0BC11DFBFBE0FE339E55B21/lists/
                    @self?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="image/png"
                    template="http://host:port/
                    webcenter/profilephoto/45394133354538304630424331314446
                    4246424530464533333945353542323l/{size}?
                    _xResourceMethod=wsrp"
                    resourceType="urn:oracle:webcenter:people:person"
                    rel="urn:oracle:webcenter:people:icon"
                    href="http://host:port/
                    webcenter/profilephoto/45394133354538304630424331314446
                    42464245304645333339453535423231/SMALL?
                    _xResourceMethod=wsrp"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="text/html"
                    resourceType="urn:oracle:webcenter:spaces:profile"
                    rel="alternate" href="http://host:port/
                    webcenter/faces/oracle/webcenter/webcenterapp/view/pages/
                    peopleconn/UserProfileGallery.jspx?wc.username=weblogic"
                    capabilities="urn:oracle:webcenter:read"/>
          </links>
          <displayName>weblogic</displayName>
          <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
          <id>weblogic</id>
     </author>
     <created>2010-11-18T06:10:32.250-08:00</created>
     <modifier>weblogic</modifier>
     <modifiedByUser>
          <displayName>weblogic</displayName>
          <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
          <id>weblogic</id>
     </modifiedByUser>
     <modified>2010-11-18T06:10:32.250-08:00</modified>
     <columns resourceType="urn:oracle:webcenter:space:list:columns">
          <links>
               <link resourceType="urn:oracle:webcenter:space:list:columns"
                    rel="self" href="http://host:port/
                    rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
                    s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_
                    756b_417b_a35f_fb03874979c0.xml)/
                    columns?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                    capabilities="urn:oracle:webcenter:read
                    urn:oracle:webcenter:create"/>
               <link resourceType="urn:oracle:webcenter:space:list"
                    rel="urn:oracle:webcenter:parent"
                    href="http://host:port/rest/api/spaces/
                    vs1/lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_
                    4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
                    fb03874979c0.xml)?utoken=
                    FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"/>
          </links>
          <items>
               <metaColumn resourceType=
                    "urn:oracle:webcenter:space:list:column">
                    <links>
                         <link resourceType=
                              "urn:oracle:webcenter:space:list:column"
                              rel="self"
                               href="http://host:port/
                              rest/api/spaces/vs1/lists/(/oracle/webcenter/
                              list/scopedMD/s355923f0_2f04_4fd0_83ad_
                              f7dac2a7ceed/lists/ls_c9cecbc7_
                              756b_417b_a35f_fb03874979c0.xml)/columns/(lco_
                              9bdd1418_6004_40ba_a052_04e8335b7ee8)?
                              utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                              capabilities="urn:oracle:webcenter:read
                              urn:oracle:webcenter:update
                              urn:oracle:webcenter:delete"/>
                    </links>
                    <id>lco_9bdd1418_6004_40ba_a052_04e8335b7ee8</id>
                    <name>No.</name>
                    <dataType>number</dataType>
                    <required>false</required>
                    <displayLength>10</displayLength>
                    <format>number</format>
                    <allowLinks>false</allowLinks>
               </metaColumn>
               <metaColumn resourceType=
                    "urn:oracle:webcenter:space:list:column">
                    <links>
                         <link resourceType=
                              "urn:oracle:webcenter:space:list:column"
                              rel="self"
                              href="http://host:port
                              /rest/api/spaces/vs1/lists/(/oracle/webcenter/
                              list/scopedMD/s355923f0_2f04_4fd0_83ad_
                              f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
                              fb03874979c0.xml)/columns/(lco_3a31fd20_24f1_
                              4422_99fd_c00d7bed4b24)?
                              utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                              capabilities="urn:oracle:webcenter:read
                              urn:oracle:webcenter:update
                              urn:oracle:webcenter:delete"/>
                    </links>
                    <id>lco_3a31fd20_24f1_4422_99fd_c00d7bed4b24</id>
                    <name>Description</name>
                    <dataType>string</dataType>
                    <required>false</required>
                    <maxLength>500</maxLength>
```

```
                    <displayLength>20</displayLength>
                    <allowLinks>false</allowLinks>
                    <editLines>1</editLines>
               </metaColumn>
          </items>
     </columns>
</list>
```

Method (list): PUT

Use this method to update a list name or description.

- Resource URI, for example:

  ```
  http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
  s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_bb806754_0652_4d49_9354_
  5fb62dc3514d.xml)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
  ```

- Request body: `<list>`
- Writable elements for list (Table 49–6)

Table 49–6 Writable Elements for list

Element	Type	Required	Constraints	Description
name[1]	string	Yes	1 or more characters	Name of this list
description	string	No	none	Description of this list

[1] Denotes required element

- For example:

  ```
  <list>
       <name>RestExampleUpdate</name>
       <description>Updated using rest api</description>
  </list>
  ```

- Request headers: `Content-Type = application/xml | application/json`, [Accept = `application/xml | application/json`]
- Response status: `200` [OK]
- Response body: `<list>`

Method (list): DELETE

Use this method to delete a list.

- Resource URI, for example:

  ```
  http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
  s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_bb806754_0652_4d49_9354_
  5fb62dc3514d.xml)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
  ```

- Request body: none
- Response status: `204` [No Content]
- Response body: none

49.4.4.2.3 Resource Types Linked to from list Table 49–7 lists the resource types that the client can link to from the `list` resource.

Table 49–7 Resource Types Linked to from list

rel	resourceType
self	`urn:oracle:webcenter:space:list`
	`urn:oracle:webcenter:space:list:rows`
	`urn:oracle:webcenter:space:list:columns`

49.4.4.3 urn:oracle:webcenter:space:list:rows

The `rows` response provides a means of retrieving and adding rows to a list. This section includes the following subsections:

- Section 49.4.4.3.1, "Navigation Paths to rows"
- Section 49.4.4.3.2, "Supported Methods for rows"
- Section 49.4.4.3.3, "Resource Types Linked to from rows"

49.4.4.3.1 Navigation Paths to rows This section shows how the client can navigate through the hypermedia to access the `rows` resource:

```
urn:oracle:webcenter:resourceindex
     urn:oracle:webcenter:spaces
          urn:oracle:webcenter:space:resourceindex
               urn:oracle:webcenter:space:lists
                    urn:oracle:webcenter:space:list
                         urn:oracle:webcenter:space:list:rows
```

49.4.4.3.2 Supported Methods for rows The rows resource type supports the following methods:

- Method (rows): `GET`
- Method (rows): `POST`

Method (rows): `GET`

Use this method to retrieve list rows.

- Resource URI, for example:

  ```
  http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
  s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_bb806754_0652_4d49_9354_
  5fb62dc3514d.xml)/rows?q=lco_9bdd1418_6004_40ba_a052_
  04e8335b7ee8:equals:2&utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
  ```

- Request body: none
- Request headers: [Accept = `application/xml` | `application/json`]
- Request parameters - `startIndex`, `itemsPerPage`, `q`, `projection`
  - `q` parameter for query, format `'q=columnId:operator:value'`, for example:

    `'q=lco_9bdd1418_6004_40ba_a052_04e8335b7ee8:equals:2'`

    * Supported operators for `Strings`: `equals`, `not.equals`, `contains`, `starts.with`
    * Supported operators for `Numbers`, `Dates`: `equals`, `not.equals`, `greater.than`, `greater.than.or.equals`, `less.than`, `less.than.or.equals`

        - May specify several conditions separated by semi-colon (;)

- Searchable attributes for rows: Rows are searchable by column values.
- Response status: `200` [OK]
- Response body: `<rows>`
- For example:

```
<rows resourceType="urn:oracle:webcenter:space:list:rows">
     <links>
          <link template="http://host:port/
               rest/api/spaces/vs1/lists/(/oracle/webcenter/list/
               scopedMD/s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_
               c9cecbc7_756b_417b_a35f_fb03874979c0.xml)/rows?
               utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**&
               startIndex={startIndex}&itemsPerPage={itemsPerPage}&
               q={searchTerms}&utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               resourceType="urn:oracle:webcenter:space:list:rows" rel="self"
               href="http://host:port/rest/api/spaces/
               vs1/lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_
               83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
               fb03874979c0.xml)/rows?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:create"/>
          <link resourceType="urn:oracle:webcenter:space:list"
               rel="urn:oracle:webcenter:parent"
               href="http://host:port/rest/api/spaces/
               vs1/lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_
               83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
               fb03874979c0.xml)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"/>
     </links>
     <itemsPerPage>1</itemsPerPage>
     <startIndex>0</startIndex>
     <items>
          <row resourceType="urn:oracle:webcenter:space:list:row">
               <links>
                    <link resourceType="urn:oracle:webcenter:space:list:row"
                         rel="self" href="http://host:port/
                         rest/api/spaces/vs1/lists/(/oracle/webcenter/list/
                         scopedMD/s355923f0_2f04_4fd0_83ad_
                         f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
                         fb03874979c0.xml)/rows/(lr_a14d427f_8515_4c82_956f_
                         a60e6e08668c)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                         capabilities="urn:oracle:webcenter:read
                         urn:oracle:webcenter:update
                         urn:oracle:webcenter:delete"/>
               </links>
               <id>lr_a14d427f_8515_4c82_956f_a60e6e08668c</id>
               <listId>/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_
                    83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
                    fb03874979c0.xml</listId>
               <scope>s355923f0_2f04_4fd0_83ad_f7dac2a7ceed</scope>
               <creator>weblogic</creator>
               <author>
                    <links>
                         <link resourceType=
                              "urn:oracle:webcenter:people:person"
                              rel="via"
                              href="http://host:port/
                              rest/api/people/E9A35E80F0BC11DFBFBE0FE339E55B21/
                              lists/@self?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_
                              w**" capabilities="urn:oracle:webcenter:read"/>
                         <link type="image/png"
                              template="http://host:port/
                              webcenter/profilephoto/45394133354538304630424
                              33131444642464245304645333339453535423231/
                              {size}?_xResourceMethod=wsrp"
                              resourceType="urn:oracle:webcenter:people:person"
                              rel="urn:oracle:webcenter:people:icon"
                              href="http://host:port/
                              webcenter/profilephoto/45394133354538304630424
                              33131444642464245304645333339453535423231/SMALL?
                              _xResourceMethod=wsrp"
                              capabilities="urn:oracle:webcenter:read"/>
                         <link type="text/html"
                              resourceType="urn:oracle:webcenter:spaces:
                              profile" rel="alternate"
                              href="http://host:port/
                              webcenter/faces/oracle/webcenter/webcenterapp/
                              view/pages/peopleconn/UserProfileGallery.jspx?
                              wc.username=weblogic"
                              capabilities="urn:oracle:webcenter:read"/>
                    </links>
                    <displayName>weblogic</displayName>
                    <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
                    <id>weblogic</id>
               </author>
               <created>2010-11-18T07:12:06.599-08:00</created>
               <modifier>weblogic</modifier>
               <modifiedByUser>
                    <links>
                         <link resourceType=
                              "urn:oracle:webcenter:people:person" rel="via"
                              href="http://host:port/rest/
                              api/people/E9A35E80F0BC11DFBFBE0FE339E55B21/lists
                              /@self?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                              capabilities="urn:oracle:webcenter:read"/>
                         <link type="image/png"
                              template="http://host:port/
                              webcenter/profilephoto/45394133354538304630424
                              33131444642464245304645333339453535423231/
                              {size}?_xResourceMethod=wsrp"
                              resourceType="urn:oracle:webcenter:people:person"
                              rel="urn:oracle:webcenter:people:icon"
                              href="http://host:port/
                              webcenter/profilephoto/45394133354538304630424
                              33131444642464245304645333339453535423231/SMALL?
                              _xResourceMethod=wsrp"
                              capabilities="urn:oracle:webcenter:read"/>
                         <link type="text/html"
                              resourceType="urn:oracle:webcenter:spaces:
                              profile" rel="alternate"
                              href="http://host:port/
                              webcenter/faces/oracle/webcenter/webcenterapp/
                              view/pages/peopleconn/UserProfileGallery.jspx?
                              wc.username=weblogic"
                              capabilities="urn:oracle:webcenter:read"/>
                    </links>
                    <displayName>weblogic</displayName>
                    <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
```

```
                    <id>weblogic</id>
               </modifiedByUser>
               <modified>2010-11-18T07:12:06.599-08:00</modified>
               <columns>
                    <column>
                         <id>lco_9bdd1418_6004_40ba_a052_04e8335b7ee8</id>
                         <name>No.</name>
                         <value>1.0</value>
                    </column>
                    <column>
                         <id>lco_3a31fd20_24f1_4422_99fd_c00d7bed4b24</id>
                         <name>Description</name>
                         <value>test</value>
                    </column>
               </columns>
          </row>
     </items>
</rows>
```

Method (rows): POST

Use this method to create a row in a list.

- Resource URI, for example:

  ```
  http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
  s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_bb806754_0652_4d49_9354_
  5fb62dc3514d.xml)/rows?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
  ```

- Request body: `<row>`
- Writable elements (Table 49–8)

Table 49–8 Writable Elements for rows

Element	Type	Constraints	Description
columns.column.id[1]	string	—	Column ID
columns.column.value[1]	string	Valid value for column data type	Column value

[1] Denotes required element

- For example:

  ```
  <row>
       <columns>
            <column>
                 <id>lco_9bdd1418_6004_40ba_a052_04e8335b7ee8</id>
                 <value>1</value>
            </column>
            <column>
                 <id>lco_3a31fd20_24f1_4422_99fd_c00d7bed4b24</id>
                 <value>test</value>
            </column>
       </columns>
  </row>
  ```

- Request headers: `Content-Type = application/xml | application/json`, [Accept = `application/xml | application/json`]
- Response status: `201` [Created]
- Response body: `<row>`

- Retrieved elements (Table 49–9)

Table 49–9 Retrieved Elements for rows

Element	Type	Description
id	string	Row ID
list id	string	List ID
scope	string	GUID of portal to which list belongs
creator	string	Person who created the list
created	date	Date the list was created
modifier	string	Last user to modify the list
modified	date	Date the list was last modified
columns	—	Column values

- For example:

```
<row resourceType="urn:oracle:webcenter:space:list:row">
     <links>
          <link resourceType="urn:oracle:webcenter:space:list:row" rel="self"
               href="http://host:port/rest/api/spaces/vs1/
               lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_83ad_
               f7dac2a7ceed/lists/ls_bb806754_0652_4d49_9354_
               5fb62dc3514d.xml)/rows/(lr_4cc07327_49cb_4cd5_a270_
               182ddcc8db4a)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:update urn:oracle:webcenter:delete"/>
     </links>
     <id>lr_4cc07327_49cb_4cd5_a270_182ddcc8db4a</id>
     <listId>/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_83ad_
          f7dac2a7ceed/lists/ls_bb806754_0652_4d49_9354_
          5fb62dc3514d.xml</listId>
     <scope>s355923f0_2f04_4fd0_83ad_f7dac2a7ceed</scope>
     <creator>weblogic</creator>
     <author>
          <links>
               <link resourceType="urn:oracle:webcenter:people:person"
                    rel="via" href="http://host:port
                    /rest/api/people/E9A35E80F0BC11DFBFBE0FE339E55B21/lists/
                    @self?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="image/png"
                    template="http://host:port/
                    webcenter/profilephoto/45394133354538304630424331331
                    44464246424530464533333945353542323 1/{size}?
                    _xResourceMethod=wsrp"
                    resourceType="urn:oracle:webcenter:people:person"
                    rel="urn:oracle:webcenter:people:icon"
                    href="http://host:port/webcenter/
                    profilephoto/4539413335453830463042433131444642464245 30
                    46453333394535354232 31/SMALL?_xResourceMethod=wsrp"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="text/html"
                    resourceType="urn:oracle:webcenter:spaces:profile"
                    rel="alternate" href="http://host:port/
                    webcenter/faces/oracle/webcenter/webcenterapp/view/pages/
                    peopleconn/UserProfileGallery.jspx?wc.username=weblogic"
                    capabilities="urn:oracle:webcenter:read"/>
          </links>
          <displayName>weblogic</displayName>
          <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
          <id>weblogic</id>
     </author>
     <created>2010-11-17T06:34:25.042-08:00</created>
     <modifier>weblogic</modifier>
     <modifiedByUser>
          <links>
               <link resourceType="urn:oracle:webcenter:people:person"
                    rel="via" href="http://host:port/
                    rest/api/people/E9A35E80F0BC11DFBFBE0FE339E55B21/lists/
                    @self?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="image/png"
                    template="http://host:port/
                    webcenter/profilephoto/4539413335453830463042433131
                    4446424642453046453333394535423231/{size}?
                    _xResourceMethod=wsrp"
                    resourceType="urn:oracle:webcenter:people:person"
                    rel="urn:oracle:webcenter:people:icon"
                    href="http://host:port/webcenter/
                    profilephoto/453941333545383046304243313144464246424530
                    4645333339453535423231/SMALL?_xResourceMethod=wsrp"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="text/html"
                    resourceType="urn:oracle:webcenter:spaces:profile"
                    rel="alternate" href="http://host:port/
                    webcenter/faces/oracle/webcenter/webcenterapp/view/pages/
                    peopleconn/UserProfileGallery.jspx?wc.username=weblogic"
                    capabilities="urn:oracle:webcenter:read"/>
          </links>
          <displayName>weblogic</displayName>
          <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
          <id>weblogic</id>
     </modifiedByUser>
          <modified>2010-11-17T06:34:25.042-08:00</modified>
     <columns>
          <column>
               <id>lco_9bdd1418_6004_40ba_a052_04e8335b7ee8</id>
               <name>No.</name>
               <value>1.0</value>
          </column>
          <column>
               <id>lco_3a31fd20_24f1_4422_99fd_c00d7bed4b24</id>
               <name>Description</name>
               <value>test</value>
          </column>
     </columns>
</row>
```

49.4.4.3.3 Resource Types Linked to from rows Table 49–10 lists the resource types that the client can link to from the rows resource.

Table 49–10 Resource Types Linked to from rows

rel	resourceType
self	`urn:oracle:webcenter:space:list.rows`
parent	`urn:oracle:webcenter:space:list`
	`urn:oracle:webcenter:space:list:row`

49.4.4.4 urn:oracle:webcenter:space:list:row

The `row` response provides a means of retrieving and adding, and deleting an individual list row. This section includes the following subsections:

- Section 49.4.4.4.1, "Navigation Paths to row"
- Section 49.4.4.4.2, "Supported Methods for row"
- Section 49.4.4.4.3, "Resource Types Linked to from row"

49.4.4.4.1 Navigation Paths to row This section shows how the client can navigate through the hypermedia to access the `row` resource:

```
urn:oracle:webcenter:resourceindex
     urn:oracle:webcenter:spaces
          urn:oracle:webcenter:space:resourceindex
               urn:oracle:webcenter:space:lists
                    urn:oracle:webcenter:space:list
                         urn:oracle:webcenter:space:list:rows
                              urn:oracle:webcenter:space:list:row
```

49.4.4.4.2 Supported Methods for row The row resource type supports the following methods:

- Method (row): `GET`
- Method (row): `PUT`
- Method (row): `DELETE`

Method (row): GET

Use this method to retrieve data from a list row.

- Resource URI, for example:

```
http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
fb03874979c0.xml)/rows/(lr_a14d427f_8515_4c82_956f_
a60e6e08668c)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
```

- Request body: none
- Request headers: [Accept = `application/xml | application/json`]
- Response status: `200` [OK]
- Response body: `<row>`
- Retrieved elements (Table 49–11)

Table 49–11 Retrieved Elements for row

Element	Type	Description
id	string	ID of the row
listId	string	ID of the parent list
scope	string	GUID of the portal to which the list belongs
creator	string	User who created the row
created	Date	Date on which the row was created
modifier	string	User who last modified the row
modified	Date	Date on which the row was last modified
columns	urn:oracle:webcenter:space:list:columns	Column values

- For example:

```
<row resourceType="urn:oracle:webcenter:space:list:row">
     <links>
          <link resourceType="urn:oracle:webcenter:space:list:row"
               rel="self" href="http://host:port/
               rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD
               /s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_bb806754_0652_
               4d49_9354_5fb62dc3514d.xml)/rows/(lr_4cc07327_49cb_4cd5_a270_
               182ddcc8db4a)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:update urn:oracle:webcenter:delete"/>
     </links>
     <id>lr_4cc07327_49cb_4cd5_a270_182ddcc8db4a</id>
     <listId>/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_83ad_
          f7dac2a7ceed/lists/ls_bb806754_0652_4d49_9354_
          5fb62dc3514d.xml</listId>
     <scope>s355923f0_2f04_4fd0_83ad_f7dac2a7ceed</scope>
     <creator>weblogic</creator>
     <author>
          <links>
               <link resourceType="urn:oracle:webcenter:people:person"
                    rel="via" href="http://host:port/
                    rest/api/people/E9A35E80F0BC11DFBFBE0FE339E55B21/lists/
                    @self?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="image/png"
                    template="http://host:port/webcenter/
                    profilephoto/4539413335453830463042433131444642464245 30
                    4645333339453535423231/{size}?_xResourceMethod=wsrp"
                    resourceType="urn:oracle:webcenter:people:person"
                    rel="urn:oracle:webcenter:people:icon"
                    href="http://host:port/webcenter/
                    profilephoto/453941333545383046304243313144464246424530
                    4645333339453535423231/SMALL?_xResourceMethod=wsrp"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="text/html"
                    resourceType="urn:oracle:webcenter:spaces:profile"
                    rel="alternate" href="http://host:port/
                    webcenter/faces/oracle/webcenter/webcenterapp/view/pages/
                    peopleconn/UserProfileGallery.jspx?wc.username=weblogic"
                    capabilities="urn:oracle:webcenter:read"/>
          </links>
          <displayName>weblogic</displayName>
          <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
          <id>weblogic</id>
     </author>
     <created>2010-11-17T06:34:25.042-08:00</created>
     <modifier>weblogic</modifier>
     <modifiedByUser>
          <links>
               <link resourceType="urn:oracle:webcenter:people:person"
                    rel="via" href="http://host:port/
                    rest/api/people/E9A35E80F0BC11DFBFBE0FE339E55B21/lists/
                    @self?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="image/png"
                    template="http://host:port/webcenter/
                    profilephoto/4539413335453830463042433131444642464245 30
                    4645333339453535423231/{size}?_xResourceMethod=wsrp"
                    resourceType="urn:oracle:webcenter:people:person"
                    rel="urn:oracle:webcenter:people:icon"
                    href="http://host:port/webcenter/
                    profilephoto/4539413335453830463042433131444642464245 30
                    4645333339453535423231/SMALL?_xResourceMethod=wsrp"
                    capabilities="urn:oracle:webcenter:read"/>
               <link type="text/html"
                    resourceType="urn:oracle:webcenter:spaces:profile"
                    rel="alternate" href="http://host:port/
                    webcenter/faces/oracle/webcenter/webcenterapp/view/pages/
                    peopleconn/UserProfileGallery.jspx?wc.username=weblogic"
                    capabilities="urn:oracle:webcenter:read"/>
          </links>
          <displayName>weblogic</displayName>
          <guid>E9A35E80F0BC11DFBFBE0FE339E55B21</guid>
          <id>weblogic</id>
     </modifiedByUser>
     <modified>2010-11-17T06:34:25.042-08:00</modified>
     <columns>
          <column>
               <id>lco_9bdd1418_6004_40ba_a052_04e8335b7ee8</id>
               <name>No.</name>
               <value>1.0</value>
          </column>
          <column>
               <id>lco_3a31fd20_24f1_4422_99fd_c00d7bed4b24</id>
               <name>Description</name>
               <value>test</value>
          </column>
     </columns>
</row>
```

Method (row): PUT

Use this method to update row data.

- Resource URI, for example:

```
http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
fb03874979c0.xml)/rows/(lr_a14d427f_8515_4c82_956f_
a60e6e08668c)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
```

- Request body: `<row>`
- Writable elements (Table 49–12)

Table 49–12 Writable Elements for row

Element	Type	Constraints	Description
columns.column.id[1]	string	—	Column ID
columns.column.value[1]	string	valid value for column data type	Column value

[1] Denotes required element

- For example:

```
<row>
     <columns>
          <column>
               <id>lco_9bdd1418_6004_40ba_a052_04e8335b7ee8</id>
               <value>1</value>
          </column>
          <column>
               <id>lco_3a31fd20_24f1_4422_99fd_c00d7bed4b24</id>
               <value>test</value>
          </column>
     </columns>
</row>
```

- Request headers: `Content-Type = application/xml | application/json`, [Accept = `application/xml | application/json`]
- Response status: `200` [OK]
- Response body: `<row>`

Method (row): DELETE

Use this method to delete a list row.

- Resource URI, for example:

```
http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
fb03874979c0.xml)/rows/(lr_a14d427f_8515_4c82_956f_
a60e6e08668c)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
```

- Request body: none
- Response status: `204` [No Content]
- Response body: none

49.4.4.4.3 Resource Types Linked to from row Table 49–13 lists the resource types that the client can link to from the `row` resource.

Table 49–13 Resource Types Linked to from row

rel	resourceType
self	`urn:oracle:webcenter:space:list:row`

49.4.4.5 urn:oracle:webcenter:space:list:columns

The `columns` response provides a means of retrieving and adding list columns. This section includes the following subsections:

- Section 49.4.4.5.1, "Navigation Paths to columns"

- Section 49.4.4.5.2, "Supported Methods for columns"
- Section 49.4.4.5.3, "Resource Types Linked to from columns"

49.4.4.5.1 Navigation Paths to columns This section shows how the client can navigate through the hypermedia to access the `columns` resource:

```
urn:oracle:webcenter:resourceindex
     urn:oracle:webcenter:spaces
          urn:oracle:webcenter:space:resourceindex
               urn:oracle:webcenter:space:lists
                    urn:oracle:webcenter:space:list
                         urn:oracle:webcenter:space:list:columns
```

49.4.4.5.2 Supported Methods for columns The `columns` resource type supports the following methods:

- Method (columns): `GET`
- Method (columns): `POST`

Method (columns): GET

Use this method to retrieve columns in a list.

- Resource URI, for example:

```
http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
fb03874979c0.xml)/columns?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
```

- Request body: none
- Request headers: [Accept = `application/xml` | `application/json`]
- Request parameters: none
- Response status: `200` [OK]
- Response body: `<metaColumns>`
- For example:

```
<metaColumns resourceType="urn:oracle:webcenter:space:list:columns">
     <links>
          <link resourceType="urn:oracle:webcenter:space:list:columns"
               rel="self" href="http://host:port/
               rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
               s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_
               417b_a35f_fb03874979c0.xml)/columns?
               utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:create"/>
          <link resourceType="urn:oracle:webcenter:space:list"
               rel="urn:oracle:webcenter:parent"
               href="http://host:port/rest/api/spaces/vs1/
               lists/(/oracle/webcenter/list/scopedMD/s355923f0_2f04_4fd0_83ad_
               f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
               fb03874979c0.xml)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"/>
     </links>
     <items>
          <metaColumn resourceType="urn:oracle:webcenter:space:list:column">
               <links>
                    <link resourceType="urn:oracle:webcenter:space:list:column"
                         rel="self" href="http://host:port/
                         rest/api/spaces/vs1/lists/(/oracle/webcenter/list/
                         scopedMD/s355923f0_2f04_4fd0_83ad_
                         f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
                         fb03874979c0.xml)/columns/(lco_9bdd1418_6004_40ba_
                         a052_04e8335b7ee8)?
                         utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                         capabilities="urn:oracle:webcenter:read
                         urn:oracle:webcenter:update
                         urn:oracle:webcenter:delete"/>
               </links>
               <id>lco_9bdd1418_6004_40ba_a052_04e8335b7ee8</id>
               <name>No.</name>
               <dataType>number</dataType>
               <required>false</required>
               <displayLength>10</displayLength>
               <format>number</format>
               <allowLinks>false</allowLinks>
          </metaColumn>
          <metaColumn resourceType="urn:oracle:webcenter:space:list:column">
               <links>
                    <link resourceType="urn:oracle:webcenter:space:list:column"
                         rel="self" href="http://host:port/
                         rest/api/spaces/vs1/lists/(/oracle/webcenter/list/
                         scopedMD/s355923f0_2f04_4fd0_83ad_
                         f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
                         fb03874979c0.xml)/columns/(lco_3a31fd20_24f1_4422_
                         99fd_c00d7bed4b24)?
                         utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
                         capabilities="urn:oracle:webcenter:read
                         urn:oracle:webcenter:update
                         urn:oracle:webcenter:delete"/>
               </links>
               <id>lco_3a31fd20_24f1_4422_99fd_c00d7bed4b24</id>
               <name>Description</name>
               <dataType>string</dataType>
               <required>false</required>
               <maxLength>500</maxLength>
               <displayLength>20</displayLength>
               <allowLinks>false</allowLinks>
               <editLines>1</editLines>
          </metaColumn>
     </items>
</metaColumns>
```

Method (columns): `POST`

Use this method to create a column in a list.

- Resource URI, for example:

```
http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
fb03874979c0.xml)/columns?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
```

- Request body: `<metaColumn>`
- Writable elements (Table 49–14)

Table 49–14 Writable Elements for columns

Element	Type	Constraints	Description
name[1]	string	—	The name of the column
dataType[1]	string	■ `string` ■ `number` ■ `datetime` ■ `boolean` ■ `person` ■ `image` ■ `richtext`	The data type of the column
required	boolean	■ `true` ■ `false`	Whether a value is required for the column
defaultValue	data type of column	Object must match data type	The default value of the column
maxLength	int	Valid only for `string` data type	The maximum length for a string value
rangeLow	int	Valid only for `number` data type	The low range value for a `number` data type
rangeHigh	int	Valid only for `number` data type	The high range value for a `number` data type
format	string	For `number` data type: ■ number ■ currency ■ percent For `datetime` data type: ■ date ■ time ■ both	The format of the column
allowLinks	boolean	■ `true` ■ `false` Valid only for `string` data type	Whether a hyperlink can be specified for a column value
linkTarget	string	■ `_blank` ■ `_self` Valid only if `allowLinks=true`	`_blank` opens link in a new window, `_self` opens link in the same window
editLines	int	Valid only for `string` data type	The number of lines when editing a column value (default=1)
peopleScope	string	■ GLOBAL ■ SUB_SCOPE Valid only for `person` data type	Whether valid users are all users in directory or members of the portal that contains the list
displayWidth	int	—	Display width of column in pixels
hint	string	—	Hint displayed to help user when entering column value

[1] Denotes required element

- For example:

```
<metaColumn>
```

```
          <name>Notes</name>
          <dataType>richtext</dataType>
     </metaColumn
```

- Request headers: `Content-Type = application/xml | application/json`, [Accept = `application/xml | application/json`]
- Response status: `201` [Created]
- Response body: `<metaColumn>`
- Retrieved elements (Table 49–15)

Table 49–15 Retrieved Elements from columns

Element	Type	Description
id	string	Column ID
name	string	The name of the column
dataType	string	The data type of the column
required	boolean	Whether a value is required for the column
defaultValue	data type of column	The default value of the column
maxLength	int	The maximum length for a string value
rangeLow	int	The low range value for a `number` data type
rangeHigh	int	The high range value for a `number` data type
format	string	The format of the column
allowLinks	boolean	Whether a hyperlink can be specified for a column value
linkTarget	string	`_blank` opens link in a new window, `_self` opens link in the same window
editLines	int	The number of lines when editing a column value (default=1)
peopleScope	string	Whether valid users are all users in directory or members of the portal that contains the list
displayWidth	int	Display width of column in pixels
hint	string	Hint displayed to help user when entering column value

- For example:

```
<metaColumn resourceType="urn:oracle:webcenter:space:list:column">
     <links>
          <link resourceType="urn:oracle:webcenter:space:list:column"
               rel="self" href="http://host:port/
               rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
               s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/
               ls_c9cecbc7_756b_417b_a35f_fb03874979c0.xml)/columns/
               (lco_fe2b9856_32f3_449a_a277_18dc7f6a779e)?
               utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:update urn:oracle:webcenter:delete"/>
     </links>
     <id>lco_fe2b9856_32f3_449a_a277_18dc7f6a779e</id>
     <name>Notes</name>
     <dataType>richtext</dataType>
     <required>false</required>
     <displayLength>20</displayLength>
```

```
        <allowLinks>false</allowLinks>
    </metaColumn>
```

49.4.4.5.3 Resource Types Linked to from columns Table 49–16 lists the resource types that the client can link to from the columns resource.

Table 49–16 Resource Types Linked to from columns

rel	resourceType
self	urn:oracle:webcenter:space:list.columns
parent	urn:oracle:webcenter:space:list
	urn:oracle:webcenter:space:list:column

49.4.4.6 urn:oracle:webcenter:space:list:column

The column response provides a means of retrieving, adding, and deleting an individual list column. This section includes the following subsections:

- Section 49.4.4.6.1, "Navigation Paths to column"
- Section 49.4.4.6.2, "Supported Methods for column"
- Section 49.4.4.6.3, "Resource Types Linked to from column"

49.4.4.6.1 Navigation Paths to column This section shows how the client can navigate through the hypermedia to access the column resource:

```
urn:oracle:webcenter:resourceindex
    urn:oracle:webcenter:spaces
        urn:oracle:webcenter:space:resourceindex
            urn:oracle:webcenter:space:lists
                urn:oracle:webcenter:space:list
                    urn:oracle:webcenter:space:list:columns
                        urn:oracle:webcenter:space:list:column
```

49.4.4.6.2 Supported Methods for column The column resource type supports the following methods:

- Method (column): GET
- Method (column): PUT
- Method (column): DELETE

Method (column): GET

Use this method to retrieve a list column.

- Resource URI. for example:

```
http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
fb03874979c0.xml)/columns/(lco_fe2b9856_32f3_449a_a277_
18dc7f6a779e)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
```

- Request body: none
- Request headers: [Accept = application/xml | application/json]
- Response status: 200 [OK]
- Response body: <metaColumn>

- Retrieved elements (Table 49–17)

Table 49–17 column Retrieved Elements

Element	Type	Description
id	string	Column ID
name	string	The name of the column
dataType	string	The data type of the column
required	boolean	Whether a value is required for the column
defaultValue	data type of column	The default value of the column
maxLength	int	The maximum length for a string value
rangeLow	int	The low range value for a `number` data type
rangeHigh	int	The high range value for a `number` data type
format	string	The format of the column
allowLinks	boolean	Whether a hyperlink can be specified for a column value
linkTarget	string	`_blank` opens link in a new window, `_self` opens link in the same window
editLines	int	The number of lines when editing a column value (default=1)
peopleScope	string	Whether valid users are all users in directory or members of the portal that contains the list
displayWidth	int	Display width of column in pixels
hint	string	Hint displayed to help user when entering column value

- For example:

```
<metaColumn resourceType="urn:oracle:webcenter:space:list:column">
     <links>
          <link resourceType="urn:oracle:webcenter:space:list:column"
               rel="self" href="http://host:port/
               rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
               s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/
               ls_c9cecbc7_756b_417b_a35f_fb03874979c0.xml)/
               columns/(lco_fe2b9856_32f3_449a_a277_18dc7f6a779e)?
               utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**"
               capabilities="urn:oracle:webcenter:read
               urn:oracle:webcenter:update urn:oracle:webcenter:delete"/>
     </links>
     <id>lco_fe2b9856_32f3_449a_a277_18dc7f6a779e</id>
     <name>Notes</name>
     <dataType>richtext</dataType>
     <required>false</required>
     <displayLength>20</displayLength>
     <allowLinks>false</allowLinks>
</metaColumn>
```

Method (column): `PUT`

Use this method to update column data.

- Resource URI, for example:

```
http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
fb03874979c0.xml)/columns/(lco_fe2b9856_32f3_449a_a277_
18dc7f6a779e)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
```

- Request body: `<metacolumn>`
- Writable elements (Table 49–18)

Table 49–18 column Writable Elements

Element	Type	Constraints	Description
name[1]	string	—	The name of the column
dataType[1]	string	■ `string` ■ `number` ■ `datetime` ■ `boolean` ■ `person` ■ `image` ■ `richtext`	The data type of the column
required	boolean	■ `true` ■ `false`	Whether a value is required for the column
defaultValue	data type of column	Object must match data type	The default value of the column
maxLength	int	Valid only for `string` data type	The maximum length for a string value
rangeLow	int	Valid only for `number` data type	The low range value for a `number` data type
rangeHigh	int	Valid only for `number` data type	The high range value for a `number` data type
format	string	For `number` data type: ■ number ■ currency ■ percent For `datetime` data type: ■ date ■ time ■ both	The format of the column
allowLinks	boolean	■ `true` ■ `false` Valid only for `string` data type	Whether a hyperlink can be specified for a column value
linkTarget	string	■ `_blank` ■ `_self` Valid only if `allowLinks=true`	`_blank` opens link in a new window, `_self` opens link in the same window
editLines	int	Valid only for `string` data type	The number of lines when editing a column value (default=1)

Table 49–18 (Cont.) column Writable Elements

Element	Type	Constraints	Description
peopleScope	string	■ `GLOBAL` ■ `SUB_SCOPE` Valid only for `person` data type	Whether valid users are all users in directory or members of the portal that contains the list
displayWidth	int	—	Display width of column in pixels
hint	string	—	Hint displayed to help user when entering column value

[1] Denotes required element

- For example:

```
<metaColumn>
     <name>Comments</name>
     <dataType>richtext</dataType>
</metaColumn>
```

- Request headers: `Content-Type = application/xml | application/json`, [Accept = `application/xml | application/json`]
- Response status: `200` [OK]
- Response body: `<metaColumn>`

Method (column): DELETE

Use this method to delete a list column.

- Resource URI, for example:

```
http://host:port/rest/api/spaces/vs1/lists/(/oracle/webcenter/list/scopedMD/
s355923f0_2f04_4fd0_83ad_f7dac2a7ceed/lists/ls_c9cecbc7_756b_417b_a35f_
fb03874979c0.xml)/columns/(lco_fe2b9856_32f3_449a_a277_
18dc7f6a779e)?utoken=FKld8lalI3QRdi8TgQkOCGEzxL5x_w**
```

- Request body: none
- Response status: `204` [No Content]
- Response body: none

49.4.4.6.3 Resource Types Linked to from column Table 49–19 lists the resource types that the client can link to from the `column` resource.

Table 49–19 Resource Types Linked to from column

rel	resourceType
self	`urn:oracle:webcenter:space:list:column`

49.5 Troubleshooting Lists

Problem

The List task flow shows an error that the WebCenter Portal's repository is not available.

Solution

The database connection is likely not configured. For more information, see Section 4.2.2, "Setting Up a Database Connection."

Problem

A 401 Unauthorized error appears.

Solution

It is likely that security is not set up for the portal. Or it may be that there was insufficient permission to perform the attempted task.

50

Integrating Notifications

This chapter describes how to integrate notifications with a Portal Framework application. Notifications provide a means of subscribing to services and application objects and, when those objects change, receiving notification across selected messaging channels.

This chapter includes the following topics:

- Section 50.1, "Introduction to Notifications"
- Section 50.2, "Basic Configuration for Notifications"
- Section 50.3, "Advanced Information for Notifications"

50.1 Introduction to Notifications

This section provides an overview of Notifications. It includes the following subsections:

- Section 50.1.1, "Understanding Notifications"
- Section 50.1.2, "Requirements for Notifications"
- Section 50.1.3, "What Happens with Notifications at Runtime"

50.1.1 Understanding Notifications

Notifications provides an automated means of triggering notices about subscribed services and objects across different messaging channels. Messages are triggered when the application services and objects to which a user has subscribed change. For example, a user can subscribe to a document and receive notification when another user changes the document.

Messaging channels can include phone text (SMS), mail, or Worklist, depending on what messaging servers are available and how the application administrator configures Notifications. For example, users can receive a mail message when a particular document changes, a text message when someone responds to a particular discussion topic, a Worklist alert when the user receives an invitation to connect. All messages contain links that take the user to the scene of the change.

Participating services and objects include People Connections (Connections, Message Board, and Feedback), Discussions, and Documents (including Wikis and Blogs).

Table 50–1 describes the types of activities that can trigger a notification and indicates the level at which the subscription is made.

Table 50–1 Activities that Can Trigger Notifications

Activity	Level
A user sends you an invitation to connect	Application
A user posts a message to your Message Board	Application
A user likes your Message Board post (messages explicitly set on a Message Board and not those added from Publisher to the Activity Stream)	Application
A user comments on your Message Board post (messages explicitly set on a Message Board and not those added from Publisher to the Activity Stream)	Application
A user posts feedback for you	Application
A user replies to a discussion topic	Object
A user comments on a discussion topic	Object
A user deletes a discussion topic	Object
A user comments on a document	Object
A user likes a document	Object
A user updates a document	Object
A user deletes a document	Object
A user comments on a wiki document	Object
A user likes a wiki document	Object
A user updates a wiki document	Object
A user deletes a wiki document	Object
A user comments on a blog entry	Object
A user likes a blog entry	Object
A user updates a blog entry	Object
A user deletes a blog entry	Object

Notifications leverages message delivery platforms available in WebCenter, such as the User Messaging Service (UMS) or the Mail service, to deliver the messages it generates. The Mail service furnishes the default messaging delivery mechanism, though you can instead use the BPEL connection provided through the Worklist service to widen a user's choice of channels to phone text, mail, and the Worklist.

You can set defaults for application-level subscriptions for all users through an XML configuration file (`notification-service-settings.xml`). You create your own version of this default file, and then use it to supersede the file of the same name that is provided for this purpose out of the box.

50.1.2 Requirements for Notifications

Before your application can work with the Notifications service, you must specify the Notification namespace in the application's `adf-config.xml` file. For more information, see Section 50.2.1, "Adding the Notifications Namespace."

Subscription capability is built into the services that support it and does not require additional configuration.

Notifications messaging capability relies on the presence of a configured Mail or Worklist connection to enable delivery of notifications messages. For Notifications messaging, you must explicitly configure the application to use either the BPEL server that is configured for the Worklist service or the Mail server that is configured for the Mail service. For more information, see Section 50.2.2, "Creating a Notifications Connection to a Mail Server," and Section 50.2.3, "Creating a Notifications Connection to a BPEL Server."

To set application defaults for all users for application-level subscription preferences, you must provide your own version of the default file `notification-service-settings.xml`. For more information, see Section 50.2.4, "Setting Application Defaults for Notifications."

For Notifications to function properly, its task flows must reside on a secured page. This is because the current user must be known through authentication in order to track and report on subscribed actions. If the page or application that contains Notifications is not secured, you will encounter exception errors. For more information, see Section 50.2.6, "Setting Security for Notifications."

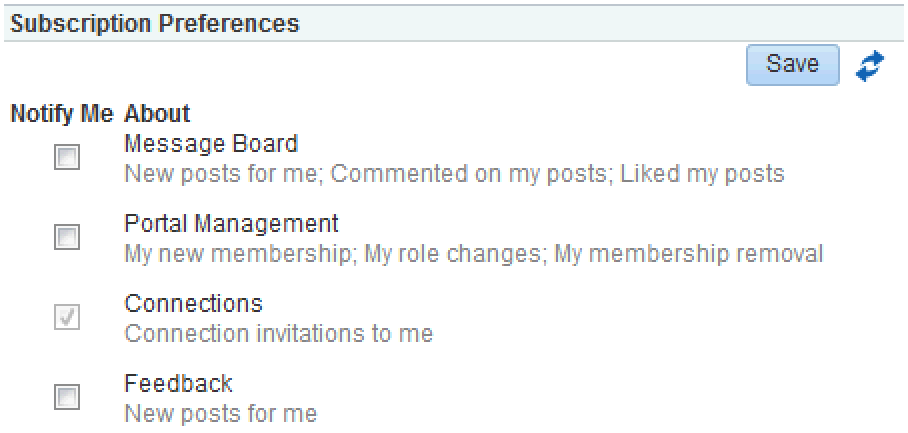
50.1.3 What Happens with Notifications at Runtime

At runtime, users set up their preferred messaging channels through UMS Preferences. For more information, see the "Establishing and Managing Your Messaging Channels and Filters" section in *Using Oracle WebCenter Portal*.

> **Note:** In designing your application, you must provide users with a way to access UMS preferences. For example, you can add a link to them in your UI, or you can point users to the Worklist task flow, which includes a link to them.

Users establish their application-level subscriptions through the Notifications task flow *Subscription Preferences*. The task flow presents slightly different options depending on whether it is located on the Home portal (Figure 50–1) or a portal (Figure 50–2).

Figure 50–1 Subscription Preferences Task Flow - Home Portal



Subscription Preferences

Notify Me About

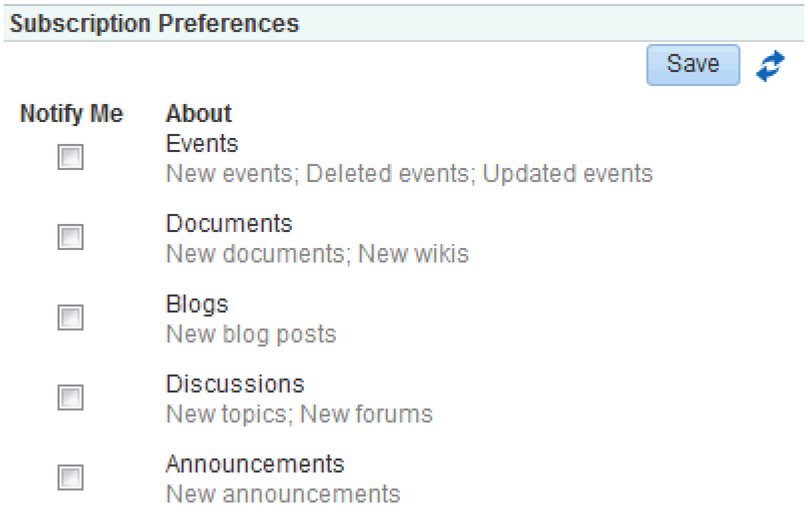
□ Message Board
New posts for me; Commented on my posts; Liked my posts

□ Portal Management
My new membership; My role changes; My membership removal

☑ Connections
Connection invitations to me

□ Feedback
New posts for me

Figure 50–2 Subscription Preferences Task Flow - Portal



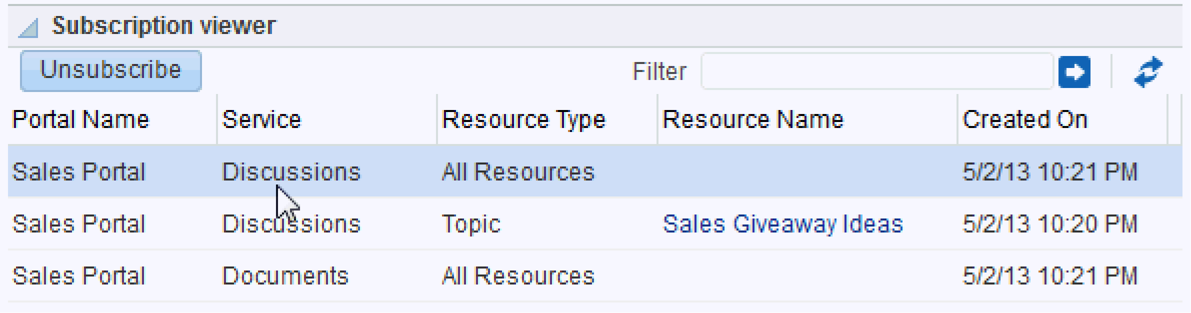
Subscription Preferences

Notify Me	About
□	Events New events; Deleted events; Updated events
□	Documents New documents; New wikis
□	Blogs New blog posts
□	Discussions New topics; New forums
□	Announcements New announcements

Users establish their object-level subscriptions by subscribing to the object directly.

Users manage their application-level subscriptions through the Subscription Preferences task flow and their object-level subscriptions through the Notifications task flow *Subscription Viewer* (Figure 50–3).

Figure 50–3 Subscription Viewer Task Flow



Subscription viewer

Portal Name	Service	Resource Type	Resource Name	Created On
Sales Portal	Discussions	All Resources		5/2/13 10:21 PM
Sales Portal	Discussions	Topic	Sales Giveaway Ideas	5/2/13 10:20 PM
Sales Portal	Documents	All Resources		5/2/13 10:21 PM

> **See Also:** For more information about Notifications task flows, see Section 50.2.5.1, "Notifications Task flows."

50.2 Basic Configuration for Notifications

Notifications leverages your Mail or Worklist service connection to provide messaging channels for user notifications. If you plan to use the Mail server, then a connection to a mail server for the Mail service is required, but no further configuration is necessary for Notifications. If you plan to use the same BPEL connection for Notifications that is used by the Worklist service, you must add this configuration to the `adf-config.xml` file.

This section provides an overview of those connections and configurations and the process of adding Notifications task flows to an application page. It includes the following subsections:

- Section 50.2.1, "Adding the Notifications Namespace"

- Section 50.2.2, "Creating a Notifications Connection to a Mail Server"
- Section 50.2.3, "Creating a Notifications Connection to a BPEL Server"
- Section 50.2.4, "Setting Application Defaults for Notifications"
- Section 50.2.5, "Adding Notifications Task Flows to Your Application"
- Section 50.2.6, "Setting Security for Notifications"

50.2.1 Adding the Notifications Namespace

To establish the Notifications namespace with your application, add the following code to the `adf-config` element at the top of the file (Example 50–1):

> **Tip:** You can find the `adf-config.xml` file in the Application Resources panel, under **Descriptors**, in the **ADF META-INF** folder.

Example 50–1 Configuring the Application to Recognize Notifications Configuration

```
xmlns:notificationC="http://xmlns.oracle.com/webcenter/notification/config"
```

For example (bold) (Figure 50–2):

Example 50–2 Notifications Configuration in the adf-config Element

```
<?xml version="1.0" encoding="US-ASCII" ?>
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
     xmlns:adf="http://xmlns.oracle.com/adf/config/properties"
     xmlns:sec="http://xmlns.oracle.com/adf/security/config"
     xmlns:wpsC="http://xmlns.oracle.com/webcenter/framework/service"
     xmlns:jndiC="http://xmlns.oracle.com/adf/jndi/config"
     xmlns:worklistC="http://xmlns.oracle.com/webcenter/worklist/config"
     xmlns:notificationC="http://xmlns.oracle.com/webcenter/notification/config"
     xmlns:mdsC="http://xmlns.oracle.com/adf/mds/config"
     xmlns:searchC="http://xmlns.oracle.com/webcenter/search/config"
     xmlns:relC="http://xmlns.oracle.com/webcenter/relationship/config"
     …
```

50.2.2 Creating a Notifications Connection to a Mail Server

To enable users to select a mail messaging channel, you must configure a connection to a Mail server (for more information, see Section 35.2.2, "Setting up Connections for Mail"). Once this is established, you add the following entry in the `adf-config.xml` file to associate the Mail server with Notifications (Example 50–3).

Example 50–3 Associating a Mail Server with Notifications in adf-config.xml

```
<notificationC:adf-notification-config
          xmlns="http://xmlns.oracle.com/webcenter/notification/config">
     <ConnectionType>MAIL</ConnectionType>
     <ConnectionName>someMailConnection</ConnectionName>
</notificationC:adf-notification-config>
```

Where `ConnectionName` is the name of a configured Mail server.

Example 50–4 presents a code sample, with the previous code sample in place (bold).

Example 50–4 A Mail Connection for Notifications in adf-config.xml

```
<?xml version="1.0" encoding="US-ASCII" ?>
```

```
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
     xmlns:adf="http://xmlns.oracle.com/adf/config/properties"
     xmlns:sec="http://xmlns.oracle.com/adf/security/config"
     xmlns:wpsC="http://xmlns.oracle.com/webcenter/framework/service"
     xmlns:jndiC="http://xmlns.oracle.com/adf/jndi/config"
     xmlns:worklistC="http://xmlns.oracle.com/webcenter/worklist/config"
     xmlns:notificationC="http://xmlns.oracle.com/webcenter/notification/config"
     xmlns:mdsC="http://xmlns.oracle.com/adf/mds/config"
     xmlns:searchC="http://xmlns.oracle.com/webcenter/search/config"
     xmlns:relC="http://xmlns.oracle.com/webcenter/relationship/config"
     xmlns:collabC="http://xmlns.oracle.com/webcenter/collab/config"
     xmlns:listC="http://xmlns.oracle.com/webcenter/list/config"
     xmlns:rcs="http://xmlns.oracle.com/adf/rcs/adf-config"
     xmlns:rcv="http://xmlns.oracle.com/adf/rcs/viewer/adf-config"xmlns:tagC=
          "http://xmlns.oracle.com/webcenter/tagging/config"
     xmlns:doclibC="http://xmlns.oracle.com/webcenter/doclib/config">
<adf:adf-properties-child xmlns="http://xmlns.oracle.com/adf/config/properties">
     <adf-property name="adfAppUID" value="ps3stage2app-7762"/>
</adf:adf-properties-child>
<sec:adf-security-child xmlns="http://xmlns.oracle.com/adf/security/config">
     <CredentialStoreContext
          credentialStoreClass="oracle.adf.share.security.providers.jps.
          CSFCredentialStore"
          credentialStoreLocation="../../src/META-INF/jps-config.xml"/>
     <sec:JaasSecurityContext
          initialContextFactoryClass="oracle.adf.share.security.
          JAASInitialContextFactory"
          jaasProviderClass="oracle.adf.share.security.providers.jps.
          JpsSecurityContext" authorizationEnforce="true"
          authenticationRequire="true"/>
</sec:adf-security-child>
<wpsC:adf-service-config>
     <wpsC:data-source jndi-name="java:/comp/env/jdbc/WebCenterDSDS"/>
</wpsC:adf-service-config>
<notificationC:adf-notification-config
          xmlns="http://xmlns.oracle.com/webcenter/notification/config">
     <ConnectionType>MAIL</ConnectionType>
     <ConnectionName>someMailConnection</ConnectionName>
</notificationC:adf-notification-config>
<searchC:adf-search-config
          xmlns="http://xmlns.oracle.com/webcenter/search/config">
…
```

50.2.3 Creating a Notifications Connection to a BPEL Server

To furnish users with the option to select mail, phone text, or Worklist messaging channels, you must configure a connection to a BPEL server (for more information, see Section 41.3.1, "Setting up Connections for Worklists"). Notifications leverages the BPEL server that is specified for the Worklist service to provide multiple messaging channels for the notifications it generates. Once a connection to a BPEL server is established, you add the following entry in the `adf-config.xml` file to associate the BPEL server with Notifications (Example 50–5).

Example 50–5 Configuring Notifications to Use the BPEL Server for Messaging

```
<notificationC:adf-notification-config
          xmlns="http://xmlns.oracle.com/webcenter/notification/config">
     <ConnectionType>BPEL</ConnectionType>
     <ConnectionName>worklistConnection</ConnectionName>
     <SenderEmailAddress>example@company.com<SenderEmailAddress>
     <SenderSMSAddress>12345</SenderSMSAddress>
</notificationC:adf-notification-config>
```

Where:

- **ConnectionName** is the name you provided for the BPEL server when you set up that connection for the Worklist service.
- **SenderEMailAddress** is a mail address from which all Notifications messages are sent. The sender mail address must match at least one driver that is configured to send messages from a corresponding domain.
- **SenderSMSAddress** is the four- to six-digit number that is used by the User Messaging Server (UMS) as the driver from which all Notifications messages are sent. The sender SMS address must match at least one driver that is configured to send messages from a corresponding domain.

Example 50–6 presents a code sample, with the previous code sample in place (bold).

Example 50–6 Notifications Entries in the adf-config.xml File

```
<?xml version="1.0" encoding="US-ASCII" ?>
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
     xmlns:adf="http://xmlns.oracle.com/adf/config/properties"
     xmlns:sec="http://xmlns.oracle.com/adf/security/config"
     xmlns:wpsC="http://xmlns.oracle.com/webcenter/framework/service"
     xmlns:jndiC="http://xmlns.oracle.com/adf/jndi/config"
     xmlns:worklistC="http://xmlns.oracle.com/webcenter/worklist/config"
     xmlns:notificationC="http://xmlns.oracle.com/webcenter/notification/config"
     xmlns:mdsC="http://xmlns.oracle.com/adf/mds/config"
     xmlns:searchC="http://xmlns.oracle.com/webcenter/search/config"
     xmlns:relC="http://xmlns.oracle.com/webcenter/relationship/config"
     xmlns:collabC="http://xmlns.oracle.com/webcenter/collab/config"
     xmlns:listC="http://xmlns.oracle.com/webcenter/list/config"
     xmlns:rcs="http://xmlns.oracle.com/adf/rcs/adf-config"
     xmlns:rcv="http://xmlns.oracle.com/adf/rcs/viewer/adf-config"xmlns:tagC=
          "http://xmlns.oracle.com/webcenter/tagging/config"
     xmlns:doclibC="http://xmlns.oracle.com/webcenter/doclib/config">
<adf:adf-properties-child xmlns="http://xmlns.oracle.com/adf/config/properties">
     <adf-property name="adfAppUID" value="ps3stage2app-7762"/>
</adf:adf-properties-child>
<sec:adf-security-child xmlns="http://xmlns.oracle.com/adf/security/config">
     <CredentialStoreContext
          credentialStoreClass="oracle.adf.share.security.providers.jps.
          CSFCredentialStore"
          credentialStoreLocation="../../src/META-INF/jps-config.xml"/>
     <sec:JaasSecurityContext
          initialContextFactoryClass="oracle.adf.share.security.
          JAASInitialContextFactory"
          jaasProviderClass="oracle.adf.share.security.providers.jps.
          JpsSecurityContext" authorizationEnforce="true"
          authenticationRequire="true"/>
</sec:adf-security-child>
<wpsC:adf-service-config>
     <wpsC:data-source jndi-name="java:/comp/env/jdbc/WebCenterDSDS"/>
</wpsC:adf-service-config>
<notificationC:adf-notification-config
          xmlns="http://xmlns.oracle.com/webcenter/notification/config">
     <ConnectionType>BPEL</ConnectionType>
     <ConnectionName>worklistConnection</ConnectionName>
     <SenderEmailAddress>example@company.com<SenderEmailAddress>
     <SenderSMSAddress>12345</SenderSMSAddress>
</notificationC:adf-notification-config>
<searchC:adf-search-config
          xmlns="http://xmlns.oracle.com/webcenter/search/config">
…
```

50.2.4 Setting Application Defaults for Notifications

This section provides information about the XML file you use to set application-level defaults for all users for Notifications. It includes the following subsections:

- Section 50.2.4.1, "About Subscription Defaults"
- Section 50.2.4.2, "Setting Notifications Subscription Defaults"

50.2.4.1 About Subscription Defaults

Administrator-level subscription preferences are set in a custom XML file that you create and then use to supersede the file that is provided in the `notification-repository.jar` for this purpose out of the box (`notification-service-settings.xml`). The settings in the custom XML file are analogous to the application-level subscriptions settings available to users through the Subscription Preferences task flow.

Each setting provides the following attributes:

- `id`—for specifying the service ID:
  - `oracle.webcenter.peopleconnections.connections`, the Connections feature of the People Connections service
  - `oracle.webcenter.peopleconnections.wall`, the Message Board feature of the People Connections service
  - `oracle.webcenter.peopleconnections.kudos`, the Feedback feature of the People Connections service
- `subscription-enabled`—For specifying the default value for the preference option: `true` or `false`

  Tip: Rather than enabling or disabling the entire subscription capability, the `subscription-enabled` attribute merely sets the initial state of the preference option. For example, if `subscription-enabled="true"`, then the associated subscription option is selected by default in the Subscription Preferences task flow. If `subscription-enabled="false"`, then the associated subscription option is not selected by default in the task flow.

- `end-user-configurable`—For enabling users to change the established default or preventing users from doing so: `true` or `false`

These attributes work together to determine the initial state of the Subscription Preferences task flow.

Table 50–2 illustrates the effect of custom administrator-level subscriptions settings on the appearance of the Subscription Preferences task flow.

Table 50–2 Effect of Administrator Defaults on Subscriptions Preferences

subscription-enabled[1]	end-user-configurable	Option in Preferences
True	True	Rendered normally, check box is selected
True	False	Grayed out, check box is selected
False	True	Rendered normally, check box is deselected
False	False	Hidden, check box is hidden

[1] Rather than enabling or disabling the entire subscription capability, the `subscription-enabled` attribute merely sets the initial state of the subscription.

> **Tip:** The most typical scenario for most notifications is `False`, `True`, rendered normally, check box is deselected.

Table 50–3 lists the types of actions that can trigger an application-level notification and associates them with their related service ID.

Table 50–3 Application-Level Activities that Can Trigger Notifications

Activity	Related Service ID
A user sends you an invitation to connect	`oracle.webcenter.peopleconnections.connections`
A user posts a message to your Message Board	`oracle.webcenter.peopleconnections.wall`
A user likes your post on another user's Message Board	`oracle.webcenter.peopleconnections.wall`
A user comments on your post on another user's Message Board	`oracle.webcenter.peopleconnections.wall`
A user posts feedback for you	`oracle.webcenter.peopleconnections.kudos`

50.2.4.2 Setting Notifications Subscription Defaults

To set defaults for application-level Subscription preferences:

1. Navigate to a directory with a path that contains `/oracle/webcenter/notification`, and create the folder `custom`.

   > **Tip:** The directory structure can start or end with any directory or directories, as long as it has `/oracle/webcenter/notification/custom` in the path.

2. In the `custom` folder, or in any subdirectory under `/oracle/webcenter/notification/custom/`, create the file `notification-service-settings.xml`.
3. In the XML file, enter values for all application-level subscription options.

   Example 50–7 provides sample content for an application-wide subscription preferences setting file and an example of each required option.

Example 50–7 Sample Subscriptions Settings XML File

```
<notification-service_settings xmlns="http://xmlns.oracle.com/webcenter/notification">
  <subscription-settings>
    <service id="oracle.webcenter.peopleconnections.connections" subscription-enabled="true"
      end-user-configurable="false"/>
    <service id="oracle.webcenter.peopleconnections.wall" subscription-enabled="false"
```

```
      end-user-configurable="true"/>
    <service id="oracle.webcenter.peopleconnections.kudos" subscription-enabled="false"
      end-user-configurable="true"/>
  </subscription-settings>
</notification-service_settings>
```

> **Note:** If an option is not provided, the default values `false/false` are assigned for the service.

4. Run the WLST command `importMetadata`, and import the directory content into your metadata store.

   > **See Also:** For information about the `importMetadata` command (and other WLST commands), see the "importMetadata" section in *WebLogic Scripting Tool Command Reference*.

   For example:

   ```
   wls: /wc_domain/serverConfig> importMetadata(application='webcenter',
     server='serverName', fromLocation='directoryPath', docs='/**')
   ```

   Where:

   - *`application`* is the name that identifies your application
   - *`serverName`* is the name of the server on which the application is running
   - *`directoryPath`* is the directory path under which `oracle/webcenter/notification/custom/<any_sub_dir_after_this>/notification-service-settings.xml` is located.

     For example, if the directory path to `notification-service-settings.xml` is `/scratch/mydir/oracle/webcenter/notification/custom`, enter `/scratch/mydir` for `directoryPath`.
   - *`docs`* identifies the content to be imported, in this example, the path and files that fall under those specified for `directoryPath`.

Table 50–4 describes the effect of various combinations of settings for the service ID `oracle.webcenter.peopleconnections.connections`.

Table 50–4 Effects of Subscription Configurations for Connections

subscription-enabled	end-user-configurable	Effect
true	true	■ The subscribing user receives a notification message when another user sends him an invitation to connect. ■ The user can change this default.

Table 50–4 (Cont.) Effects of Subscription Configurations for Connections

subscription-enabled	end-user-configurable	Effect
true	false	■ The subscribing user receives a notification message when another user sends him an invitation to connect. ■ The user cannot change this default.[1]
false	true	■ The subscribing user does not receive a notification message when another user sends him an invitation to connect. ■ The user can change this default.
false	false	■ The subscribing user does not receive a notification message when another user sends him an invitation to connect. ■ The option for changing this default is hidden.

[1] This is the out-of-the-box default

Table 50–5 describes the effect of various combinations of settings for the service ID `oracle.webcenter.peopleconnections.wall`.

Table 50–5 Effects of Subscription Configurations for Message Board

subscription-enabled	end-user-configurable	Effect
true	true	■ The subscribing user receives a notification message when another user posts a message on his Message board, likes his Message Board post, or comments on his Message Board post. ■ The user can change this default.
true	false	■ The subscribing user receives a notification message when another user posts a message on his Message board, likes his Message Board post, or comments on his Message Board post. ■ The user cannot change this default.
false	true	■ The subscribing user does not receive a notification message when another user posts a message on his Message board, likes his Message Board post, or comments on his Message Board post. ■ The user can change this default.
false	false	■ The subscribing user does not receive a notification message when another user posts a message on his Message board, likes his Message Board post, or comments on his Message Board post. ■ The option for changing this default is hidden.

Table 50–6 describes the effect of various combinations of settings for the service ID `oracle.webcenter.peopleconnections.kudos`.

Table 50–6 Effect of Subscription Configurations for Feedback

subscription-enabled	end-user-configurable	Effect
true	true	■ The subscribing user receives a notification message when another user leaves feedback for him. ■ The user can change this default.
true	false	■ The subscribing user receives a notification message when another user leaves feedback for him. ■ The user cannot change this default.
false	true	■ The subscribing user does not receive a notification message when another user leaves feedback for him. ■ The user can change this default.
false	false	■ The subscribing user does not receive a notification message when another user leaves feedback for him. ■ The option for changing this default is hidden.

50.2.5 Adding Notifications Task Flows to Your Application

This section provides a brief overview of Notifications task flows and describes how to add them to your application pages. It includes the following subsections:

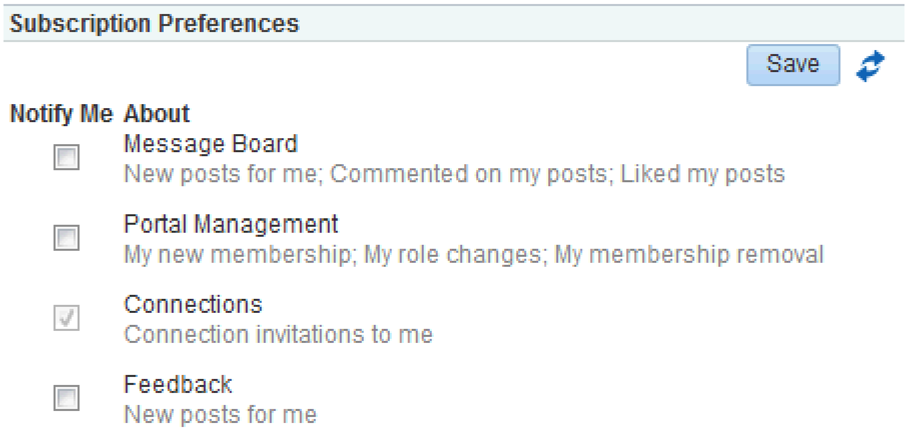
- Section 50.2.5.1, "Notifications Task flows"
- Section 50.2.5.2, "How to Add a Notifications Task Flow to a Page"

50.2.5.1 Notifications Task flows

Notification Services exposes two task flows for managing user subscriptions:

- Subscription Preference provides controls for taking, viewing, and unsubscribing from application-level subscriptions. The task flow presents slightly different options depending on whether it is located on the Home portal (Figure 50–1) or a portal (Figure 50–2)

Figure 50–4 Subscription Preferences Task Flow - Home Portal



Subscription Preferences

Save

Notify Me About

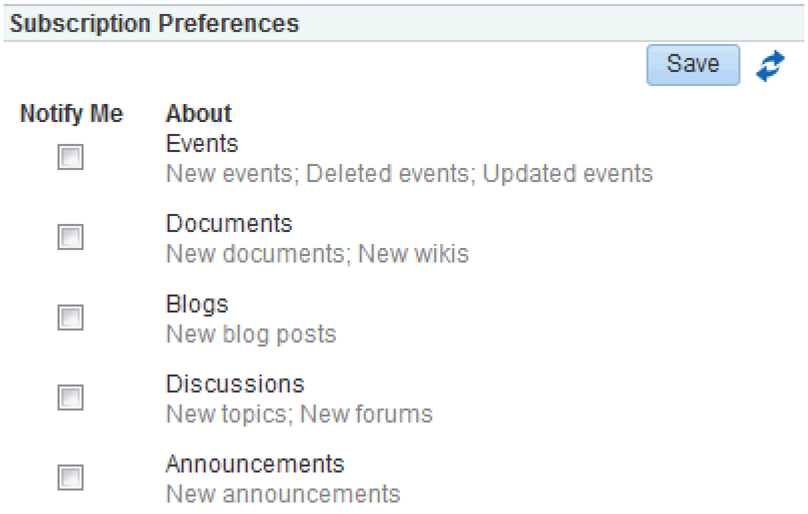
□ Message Board
New posts for me; Commented on my posts; Liked my posts

□ Portal Management
My new membership; My role changes; My membership removal

☑ Connections
Connection invitations to me

□ Feedback
New posts for me

Figure 50–5 Subscription Preferences Task Flow - Portal

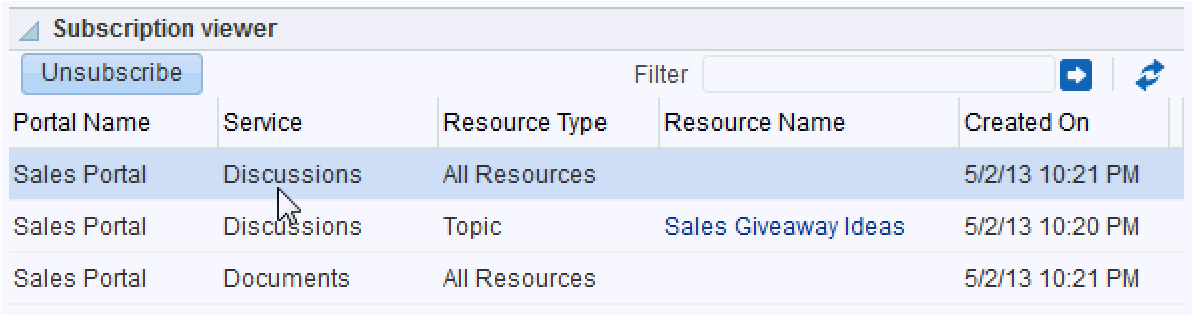


Subscription Preferences

Notify Me	About
□	Events New events; Deleted events; Updated events
□	Documents New documents; New wikis
□	Blogs New blog posts
□	Discussions New topics; New forums
□	Announcements New announcements

- Subscription Viewer provides controls for viewing and unsubscribing from object-level subscriptions (Figure 50–6).

Figure 50–6 Subscription Viewer Task Flow



Subscription viewer

Portal Name	Service	Resource Type	Resource Name	Created On
Sales Portal	Discussions	All Resources		5/2/13 10:21 PM
Sales Portal	Discussions	Topic	Sales Giveaway Ideas	5/2/13 10:20 PM
Sales Portal	Documents	All Resources		5/2/13 10:21 PM

50.2.5.2 How to Add a Notifications Task Flow to a Page

To add a Notifications task flow to a page:

1. Follow the steps in Section 4.2.1, "How to Prepare Your Application to Consume Tools and Services" to implement security and create a customizable page in your application.
2. Open the page on which to add the task flow.
3. In the Resource Palette, in the My Catalogs pane, open the **WebCenter Portal - Services Catalog**, then open the **Task Flows** folder.
4. Drag the task flow onto a page region, then choose **Region** from the pop-up list.
5. In the Confirm Add ADF Library dialog, click **Add Library** to add all required libraries for the component.
6. For Subscription Preferences only, optionally, in the Edit Task Flow Binding dialog, provide a path to your input parameter map and values for the task flow's input parameters, and click **OK**.

> **See Also:** For information about Subscription Preferences task flow input parameters, see Section 50.2.5.3, "Subscription Preferences Task Flow Input Parameters."

The task flow appears on the page. For example, in the Source view, you will see the content depicted in Example 50–8.

Example 50–8 Source View Content of the Subscription Preferences Task Flow

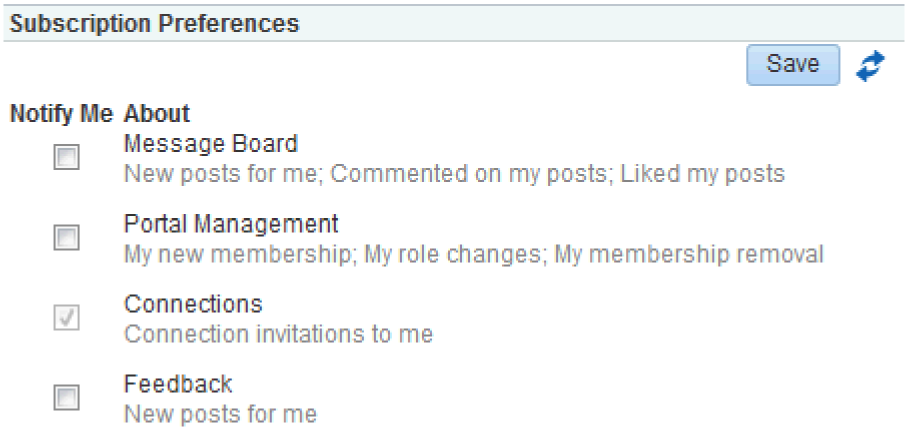
```
<af:region value="#{bindings.SubscriptionPreferences1.regionModel}" id="r1"/>
```

7. In the Confirm Add Form Element dialog, click **No**, to avoid wrapping a form element around the task flow.

8. Save your project, then run your page to a browser.

   The task flow appears in your browser. The options shown in the task flow are slightly different depending on whether you added the task flow to the Home portal (Figure 50–7) or a portal (Figure 50–7).

Figure 50–7 Subscription Preferences Task Flow - Home Portal



Subscription Preferences

Notify Me About

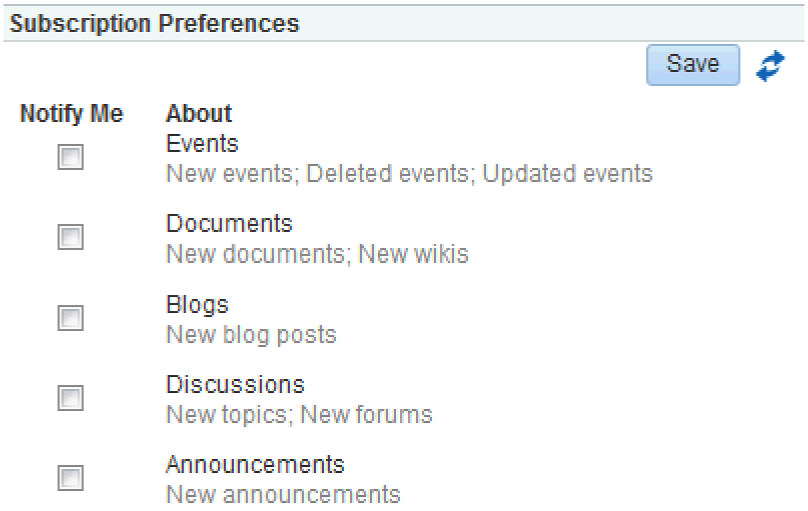
□ Message Board
New posts for me; Commented on my posts; Liked my posts

□ Portal Management
My new membership; My role changes; My membership removal

☑ Connections
Connection invitations to me

□ Feedback
New posts for me

Figure 50–8 Subscription Preferences Task Flow - Portal



Subscription Preferences

Notify Me About

□ Events
New events; Deleted events; Updated events

□ Documents
New documents; New wikis

□ Blogs
New blog posts

□ Discussions
New topics; New forums

□ Announcements
New announcements

50.2.5.3 Subscription Preferences Task Flow Input Parameters

The Subscription Preferences task flow has input parameters that you can use to control the behavior of a given task flow instance. Table 50–7 lists and describes the input parameters associated with this task flow.

Table 50–7 Subscription Preferences Task Flow Input Parameters

Input Parameter	Description
`hideActions`	A control for showing or hiding the **Save** button and **Refresh** icon on the task flow - `${true}` to hide these controls - `${false}` to show them (default)
`scopeName`	The name of the scope for which to set subscription preferences.

50.2.6 Setting Security for Notifications

Notifications must know the identity of a user to preserve the user's Notifications settings and to track the user's activities on subscribed services and objects. To that end, you must at least configure your application to authenticate users such that they have distinct identities for the purposes of personalization and user preferences.

For details on how to implement a basic security solution for your Portal Framework application, see Section 74.3, "Configuring ADF Security." For details on how to implement a complete security solution for your Portal Framework application, see Chapter 74, "Securing Your WebCenter Portal Framework Application."

After you configure ADF security for your application, you can open the `jazn-data.xml` file and modify your sample user's privileges for each task flow. To open the ADF Security Policies Editor, locate the file in the Application Resources panel and double-click its name. You can further configure grants in this view.

Note: To successfully grant user permissions for Notifications, you must configure user permissions after deployment.

50.3 Advanced Information for Notifications

This section provides information about the APIs that are available for use with Notifications. It includes the following subsections:

- Section 50.3.1, "Using Notifications Java APIs"
- Section 50.3.2, "Using Notifications Data Controls"

50.3.1 Using Notifications Java APIs

This section provides an overview of Notifications Java APIs. It includes the following subsections:

- Section 50.3.1.1, "Configuration Settings Required to Use Notifications Java APIs"
- Section 50.3.1.2, "Introduction to Notifications Java APIs"
- Section 50.3.1.3, "How to Set up Your Application to Use Notifications Java APIs"

See Also: For detailed information about the Notifications Java APIs, see the *Java API Reference for Oracle WebCenter Portal*.

50.3.1.1 Configuration Settings Required to Use Notifications Java APIs

To use Notifications Java APIs, you must have the following entries in your `adf-config.xml` file:

```
<namespace path="/oracle/webcenter/page/scopedMD"
     metadata-store-usage="WebCenterFileMetadataStore"/>
<namespace path="/pageDefs" metadata-store-usage="WebCenterFileMetadataStore"/>
```

If these entries are not present in `adf-config.xml`, you can add them using your preferred text editor.

50.3.1.2 Introduction to Notifications Java APIs

Notifications Java APIs are located in the class `oracle.webcenter.notification`. Within the class, `SubscriptionManager` provides the interface for creating and managing user subscriptions using the following Java APIs:

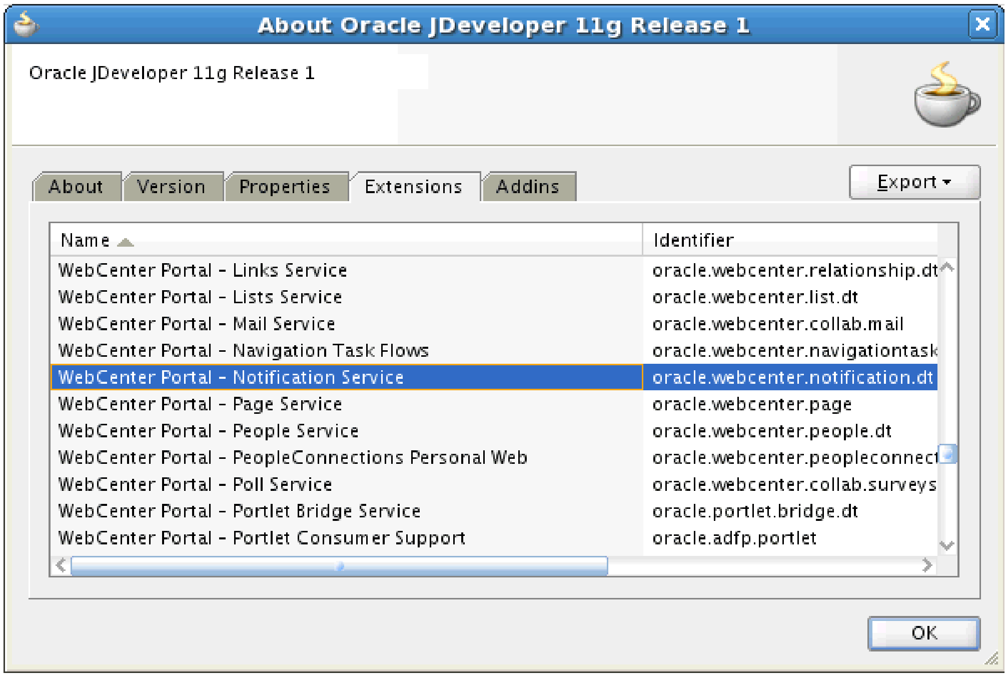
- `FilterOption`—Provides the filter criteria. Use an instance of this class while querying a user's subscriptions.
- `NotificationServiceFactory`—Factory for creating and retrieving instances that correspond to Notifications interfaces. This is the entry point to the Notifications API.
- `SortOption`—Defines the sort attributes for fetching subscriptions. Use an instance of this class in `SubscriptionManager` methods to query a user's subscriptions.
- `Subscription`—Contains information about a user's subscriptions. Subscriptions for a user are created via the method that is exposed by `SubscriptionManager`. Instances of this class are returned by the methods exposed in `SubscriptionManager`.
- `SubscriptionPreference`—Represents application- or scope-level subscriptions as a preference and enables setting and removing subscriptions for the corresponding service.

> **See Also:** For detailed information about the Notifications Java APIs, see the *Java API Reference for Oracle WebCenter Portal*.

50.3.1.3 How to Set up Your Application to Use Notifications Java APIs

To use the Notifications Java APIs, WebCenter Portal extension must be present in your JDeveloper application. In JDeveloper, go to the **Help - About** menu, and click the **Extensions** tab. Look for the WebCenter Portal - Notification Service, as shown in Figure 50–9. For information about adding the WebCenter Portal extension, see Chapter 2, "Setting Up Your Development Environment."

Figure 50–9 JDeveloper Extensions


About Oracle JDeveloper 11g Release 1
Oracle JDeveloper 11g Release 1
About
Version
Properties
Extensions
Addins
Export
OK

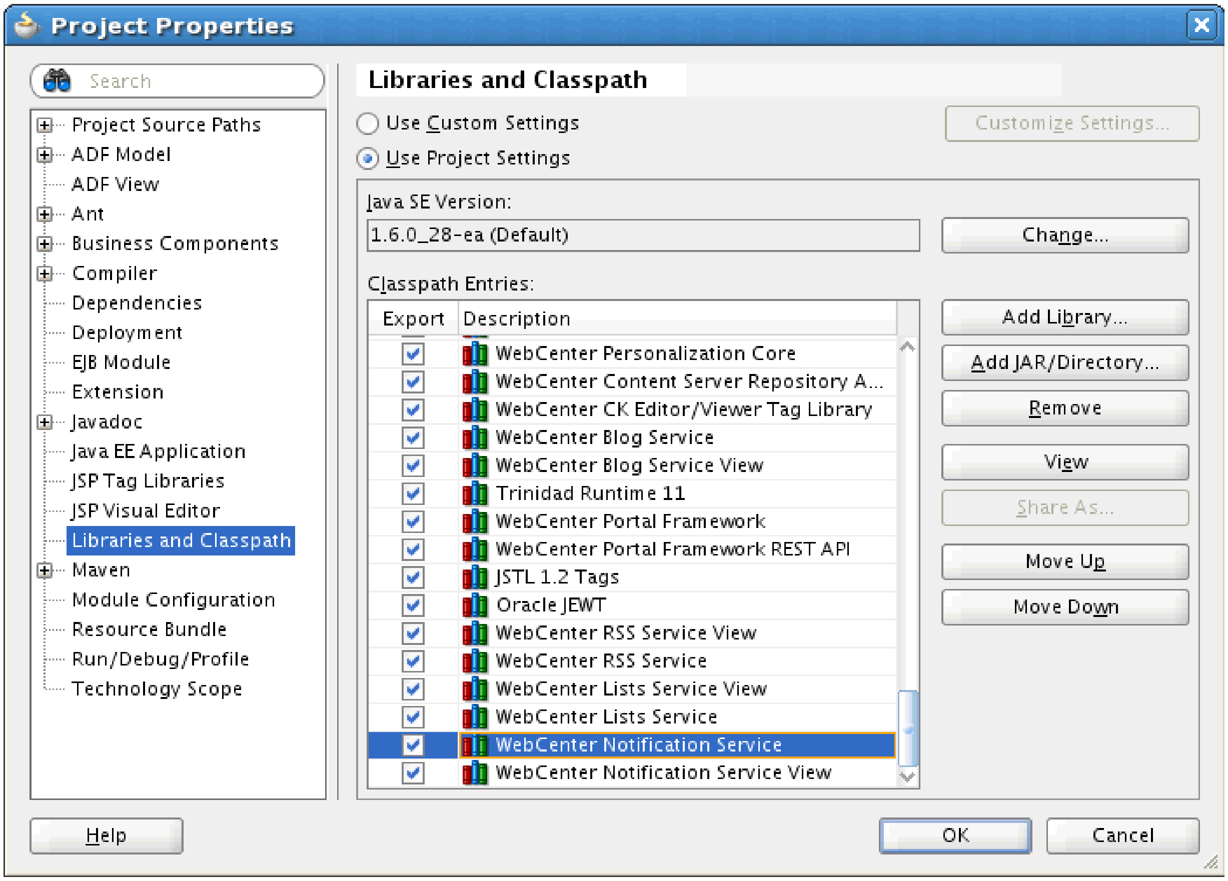
Name	Identifier
WebCenter Portal - Links Service	oracle.webcenter.relationship.dt
WebCenter Portal - Lists Service	oracle.webcenter.list.dt
WebCenter Portal - Mail Service	oracle.webcenter.collab.mail
WebCenter Portal - Navigation Task Flows	oracle.webcenter.navigationtask
WebCenter Portal - Notification Service	oracle.webcenter.notification.dt
WebCenter Portal - Page Service	oracle.webcenter.page
WebCenter Portal - People Service	oracle.webcenter.people.dt
WebCenter Portal - PeopleConnections Personal Web	oracle.webcenter.peopleconnect
WebCenter Portal - Poll Service	oracle.webcenter.collab.surveys
WebCenter Portal - Portlet Bridge Service	oracle.portlet.bridge.dt
WebCenter Portal - Portlet Consumer Support	oracle.adfp.portlet

After confirming that Notifications is included with the WebCenter Portal extension, you must add the Notifications libraries to the project if they are not already present.

To add Notifications libraries to your project:

1. Right-click your project and select **Project Properties** and then **Libraries and Classpath**.
2. Click **Add Library** and select the **WebCenter Notification Service** and **WebCenter Notification Service View** libraries (Figure 50–10).
3. Click **OK**.

Figure 50–10 Libraries and Classpath in Project Properties



Libraries and Classpath

○ Use Custom Settings

● Use Project Settings

Java SE Version: 1.6.0_28-ea (Default)

Classpath Entries:

Export	Description
☑	WebCenter Personalization Core
☑	WebCenter Content Server Repository A...
☑	WebCenter CK Editor/Viewer Tag Library
☑	WebCenter Blog Service
☑	WebCenter Blog Service View
☑	Trinidad Runtime 11
☑	WebCenter Portal Framework
☑	WebCenter Portal Framework REST API
☑	JSTL 1.2 Tags
☑	Oracle JEWT
☑	WebCenter RSS Service View
☑	WebCenter RSS Service
☑	WebCenter Lists Service View
☑	WebCenter Lists Service
☑	WebCenter Notification Service
☑	WebCenter Notification Service View

4. Click **OK**.

50.3.2 Using Notifications Data Controls

Notifications provides a data control that enables you to create your own visualization of the subscription management functionality. This section provides an overview of the data control **Notification Subscription Data Control**, and lists and describes its supported methods, attributes, and classes.

> **See Also:** For information about using data controls in a Portal Framework application, see Section 4.1.3, "Using WebCenter Portal Data Controls."

This section includes the following subsections:

- Section 50.3.2.1, "Adding a Data Control to Your Project"
- Section 50.3.2.2, "Understanding the Notification Subscription Data Control"
- Section 50.3.2.3, "Notification Subscription Data Control Methods and Attributes"
- Section 50.3.2.4, "Notification Subscription Data Control Classes"

50.3.2.1 Adding a Data Control to Your Project

Add a data control to your project by right-clicking it in the Resource Palette and selecting **Add to Project** from the resulting context menu. Once added, you can browse the data control's methods and attributes by expanding it in the Data Controls panel in the Application Navigator.

Add a data control to an application page by dragging it onto the page from the Data Controls panel.

> **See Also:** For information about using data controls in a Portal Framework application, see Section 4.1.3, "Using WebCenter Portal Data Controls."

50.3.2.2 Understanding the Notification Subscription Data Control

The Notification Subscription Data Control enables you to create a custom UI that is equivalent to the Subscription Preferences and Subscription Viewer task flows should these prove insufficient for your requirements.

You can use the data control as a means of adding application-level subscription preferences. For example, if you have developed your own preferences mechanism in your application, you can use the data control to add subscription preferences to that existing mechanism rather than using the Subscription Preferences task flow directly. You can also build a custom subscription viewer UI, where all of the current user's object-level subscriptions are listed.

50.3.2.3 Notification Subscription Data Control Methods and Attributes

This section lists and describes the methods exposed in the Notification Subscription Data Control. It includes the following subsections:

- Section 50.3.2.3.1, "Method: getUserSubscriptionPreferences"
- Section 50.3.2.3.2, "Method: getScopeSubscriptionPreferences"
- Section 50.3.2.3.3, "Method: saveUserSubscriptionPreferences"
- Section 50.3.2.3.4, "Method: saveScopeSubscriptionPreferences"
- Section 50.3.2.3.5, "Method: getSubscriptions"
- Section 50.3.2.3.6, "Method: unsubscribe"

50.3.2.3.1 Method: getUserSubscriptionPreferences This method returns application-level subscription preferences for the current user.

Input Parameters

None

Return Values

Returns a collection of `SubscriptionPreference` objects. The `SubscriptionPreference` object indicates the user's preference for each service.

50.3.2.3.2 Method: getScopeSubscriptionPreferences This method returns the scope level subscription preferences for the current user.

This method is primarily useful in a WebCenter Portal. In a Portal Framework application, it is expected that the scope will always be the default scope, that is, the application. For the default scope, this method returns application-level preferences.

Input Parameters

The input parameter `scopeGuid` takes a value of type `String`. The value specifies the GUID of the scope for which the user's scope-level preferences are returned. In a WebCenter Portal, the scope referenced here is equivalent to a *portal*.

Return Values

Returns a collection of `SubscriptionPreference` objects. Each object indicates the current user's subscription preferences for each service within the specified scope.

50.3.2.3.3 Method: saveUserSubscriptionPreferences This method enables the application to commit and save changes to the user's application-level preferences. For example, if the user subscribes to all available services, then these changes can be committed by binding this method to the appropriate component on the UI (for example, an **Apply** button).

Input Parameters

None

Return Values

None

50.3.2.3.4 Method: saveScopeSubscriptionPreferences This method enables the application to commit and save changes to the user's scope-level preferences. For example, if the user subscribes to all the available services in the given scope, then these changes can be committed and saved by binding this method to the appropriate component on the UI (for example, an **Apply** button).

Input Parameters

The input parameter `scopeGUID` takes a value of type `String`. The value specifies the GUID of the scope for which the modified preferences are to be saved.

Return Values

None

50.3.2.3.5 Method: getSubscriptions The primary method for returning a list of the current user's object-level subscriptions. You can use this method to build a custom Subscription Viewer UI for showing all of a user's object-level subscriptions.

Input Parameters

Table 50–8 lists and describes the input parameters supported by this method.

Table 50–8 Input Parameters Supported by the method getSubscriptions

Input Parameter	Description
`FilterOption`	An object that contains filter conditions for querying a user's subscriptions. `FilterOption` supports filtering based on portal name (WebCenter Portal only) and object name.
`SortOption`	An object that contains the sort or ordering condition for querying subscriptions. It supports sorting by object name, scope name (WebCenter Portal only), or the creation date of subscription.
`offset`	This input parameter takes an integer as a value. The offset for querying subscriptions. This is typically used while fetching the result set with pagination.

Table 50–8 (Cont.) Input Parameters Supported by the method getSubscriptions

Input Parameter	Description
fetchSize	This input parameter takes an integer as a value. The maximum number of rows to be returned in one call.

Return Values

Returns a collection of Subscription objects matching the filter criteria and other input parameters in the order specified by the sort option.

50.3.2.3.6 Method: unsubscribe Used to unsubscribe from, or remove, a specific subscription. This method is typically used to add the unsubscribe action to the Subscription Viewer UI, where object-level subscriptions are exposed.

Unsubscribing from a particular service at the application and portal level, or at either level, can be achieved by setting the appropriate flag in SubscriptionPreference and saving those via the appropriate `save*()` method listed above. The `Unsubscribe` method is useful within Subscription Viewer functionality.

Input Parameters

Table 50–9 lists and describes the input parameters supported by this method.

Table 50–9 Input Parameters Supported by the method Unsubscribe

Input Parameter	Description
scopeGuid	Takes a value of type `String`. The value specifies the GUID of the scope for which the user's scope-level preferences are returned. In a WebCenter Portal, the scope referenced here is equivalent to a *portal*.
serviceId	The ID of the unsubscribed service Valid service IDs include: ■ `oracle.webcenter.collab.forum` ■ `oracle.webcenter.doclib`
objectId	The GUID of the unsubscribed object.

Return Values

None

50.3.2.4 Notification Subscription Data Control Classes

The Notification Subscriptions Data Control exposes two classes as return values:

- SubscriptionPreference
- Subscription

50.3.2.4.1 SubscriptionPreference The class `SubscriptionPreference` represents application- or scope-level subscriptions as a preference and enables setting and removing subscriptions for the corresponding service (this is followed by a save call on the data control).

Table 50–10 lists and describes the properties associated with the `SubscriptionPreference` class.

Table 50–10 Properties Associated with the SubscriptionPreference Class

Property	Description
`hintsText`	A string containing the concatenation of all the applicable activities (description) within the service that generates notifications This is useful to display on the UI to tell the user what he is subscribing to.
`serviceIcon`	An icon for the service
`serviceId`	ID of the corresponding service
`serviceName`	Display name of the service
`subscriptionEnabled`	A flag that indicates whether the subscription is enabled This attribute also has a setter to support the select/deselect operation on the UI.
`userOverrideAllowed`	A flag that indicates whether to allow the user to override the default setting

50.3.2.4.2 Subscription The class `Subscription` is purely read-only and represents portal- (WebCenter Portal only) and object-level subscriptions.

Table 50–11 lists and describes the properties associated with the **Subscription** class.

Table 50–11 Properties Associated with the Subscription Class

Property	Description
`creationDate`	The datetime this subscription was created
`objectId`	The ID of the object, if this represents an object-level subscription, otherwise `null`.
`objectName`	The name of the object, if this represents an object-level subscription, otherwise `null`
`objectType`	The object type (as defined by the corresponding service) when this subscription represents object-level subscriptions, otherwise `null`
`scopeGuid`	The GUID of the scope or portal
`scopeName`	The display name of the scope or portal
`serviceId`	The ID of the service for this subscription object
`serviceName`	The name of the service
`userId`	The ID of the user who created this subscription

51

Integrating Recent Activities

This chapter describes how to integrate recent activities with a Portal Framework application. Recent Activities stream the most recent application actions.

This chapter includes the following topics:

- Section 51.1, "Introduction to Recent Activities"
- Section 51.2, "Basic Configuration for Recent Activities"
- Section 51.3, "Advanced Information for Recent Activities"

> **Note:** For information about using recent activities, see the "Working with Recent Activities" chapter in *Using Oracle WebCenter Portal*.

51.1 Introduction to Recent Activities

Recent activities enable users to view the most recent changes in your application. For example, the documents tool automatically produces the information that recent activities uses to display the most recent changes to the document library. This is useful to your users who want a quick and easy way to view any additions or changes to a particular area of the application.

Recent activities can track creation, modification, and deletion of the following portal objects:

- Documents
- Announcements
- Discussion forums
- Pages
- List definitions

For more information, see Chapter 32, "Integrating Announcements," Chapter 33, "Integrating Discussions," Chapter 28, "Integrating Documents," and Chapter 17, "Enabling Runtime Creation and Management of Pages."

Through APIs, you can control the display of business activities.

> **See Also:** For information about tracking business activities using APIs, see *Java API Reference for Oracle WebCenter Portal*.

This section contains the following subsections:

- Section 51.1.1, "Understanding Recent Activities"

- Section 51.1.2, "What Happens at Runtime"

51.1.1 Understanding Recent Activities

Recent activities provides a summary view of recent changes to a variety of tools and services. You can specify the range of time to consider recent by selecting a time range from a list at the top of the task flow. Recorded activities include additions or revisions of pages, documents, discussion forums, and the like.

By default, recent activities works with documents, announcements, discussions, and pages. You can limit what recent activities are tracked. For more information about this setting, see Section 51.3, "Advanced Information for Recent Activities." You can also learn more about using Oracle WebCenter Portal tools and services in Chapter 4, "Preparing Your Application for WebCenter Portal Tools and Services."

Recent activities functionality is similar to the activity stream functionality (for more information, see Section 37.1.1.1, "Activity Stream"). Both track the application activities of integrated tools and services, though the activity stream tracks a broader range of tools and services. For example, recent activities tracks documents, announcements, discussions, and pages. The activity stream tracks those, as well as people, wikis, and blogs. Recent activities tracks activities no matter who performs the action. The activity stream tracks activities performed by a user's connections and includes information about who performed the activity. Recent activities does not include names.

The basic difference between recent activities and the activity stream can be summarized as follows: recent activities provides an overview of what is happening in an application; the activity stream provides an overview of what is happening with a user's connections.

51.1.2 What Happens at Runtime

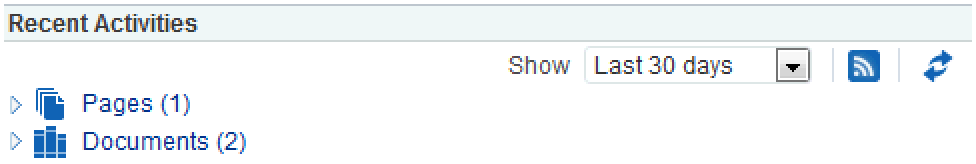
At runtime, the Recent Activities task flow fetches the latest information about the tools and services that are configured and running in your application. Figure 51–1 shows an example of the Recent Activities task flow at runtime and displays the following activities that have occurred in the application since yesterday:

- One document has been uploaded or added using the Documents tool
- Five discussion threads have been modified or added using the Discussions tool
- One announcement has been modified or added using the Announcements tool

The time range choices (Today, Since Yesterday, and so on) display based on the default values set for the Recent Activities Time Range parameter values at design time (see Table 51–1).

Recent activities uses the search capabilities of WebCenter to query activities for specified periods. Search capabilities are implemented across the following WebCenter Portal tools and services: documents, announcements, discussions, and pages. These services, if configured in an application, respond to queries from recent activities and return items pertinent to the search criteria. Responses to queries (search results) are always based on the search predicate, `DCMI_MODIFIED > [start time]`. Here `start time` is one of the time periods that you configured in the Edit Task Flow Binding dialog at design time. Users can select a select a time period in the **Show** list at runtime.

Figure 51–1 Recent Activities at Runtime


Recent Activities

Show Last 30 days

Pages (1)

Documents (2)

51.2 Basic Configuration for Recent Activities

This section describes how to add recent activities functionality to your Portal Framework application.

This section contains the following subsections:

- Section 51.2.1, "Setting up Connections for Recent Activities"
- Section 51.2.2, "Adding Recent Activities at Design Time"
- Section 51.2.3, "Modifying Recent Activities Task Flow Parameters"
- Section 51.2.4, "Setting Security for Recent Activities"

51.2.1 Setting up Connections for Recent Activities

You do not need to set up specific connections for recent activities. You only need to ensure that the WebCenter Portal components you want to track are configured.

51.2.2 Adding Recent Activities at Design Time

To use recent activities, you must add its task flow to your application. Ensure that you have at least one of the components it tracks in your application. There is a single Recent Activities task flow available in the WebCenter Portal - Services Catalog, which you can add to your application.

Recent activities automatically picks up other components in your application and looks for recent activities within these components. Before running your application containing recent activities, however, you may want to ensure your application contains at least one of the components you want to monitor.

To add the Recent Activities task flow to your application:

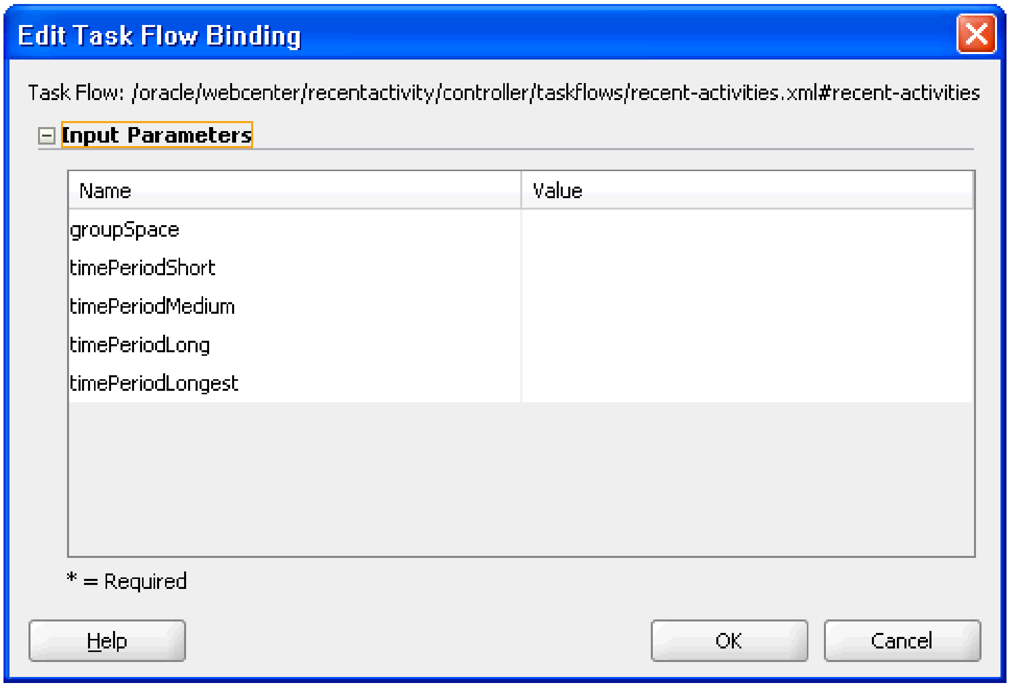
1. Follow the steps in Section 4.2.1, "How to Prepare Your Application to Consume Tools and Services" to implement security and create a customizable page in your Portal Framework application.
2. Open the source of the customizable page.
3. Ensure that your application includes at least one of the components that recent activities tracks.

   > **Note:** If you run an application that does not contain one of these components, then recent activities displays an error saying
   >
   > ```
   > Warning: Unable to obtain recent activity data.
   > ```

4. In the Resource Palette, open the **WebCenter Portal - Services Catalog**, then open the **Task Flows** folder.

5. Click **Recent Activities** and drag it onto your page after the `<af:form>` tag, and select **Region**.

Figure 51–2 Edit Task Flow Binding Dialog



Edit Task Flow Binding

Task Flow: /oracle/webcenter/recentactivity/controller/taskflows/recent-activities.xml#recent-activities

Input Parameters

Name	Value
groupSpace	
timePeriodShort	
timePeriodMedium	
timePeriodLong	
timePeriodLongest	

* = Required

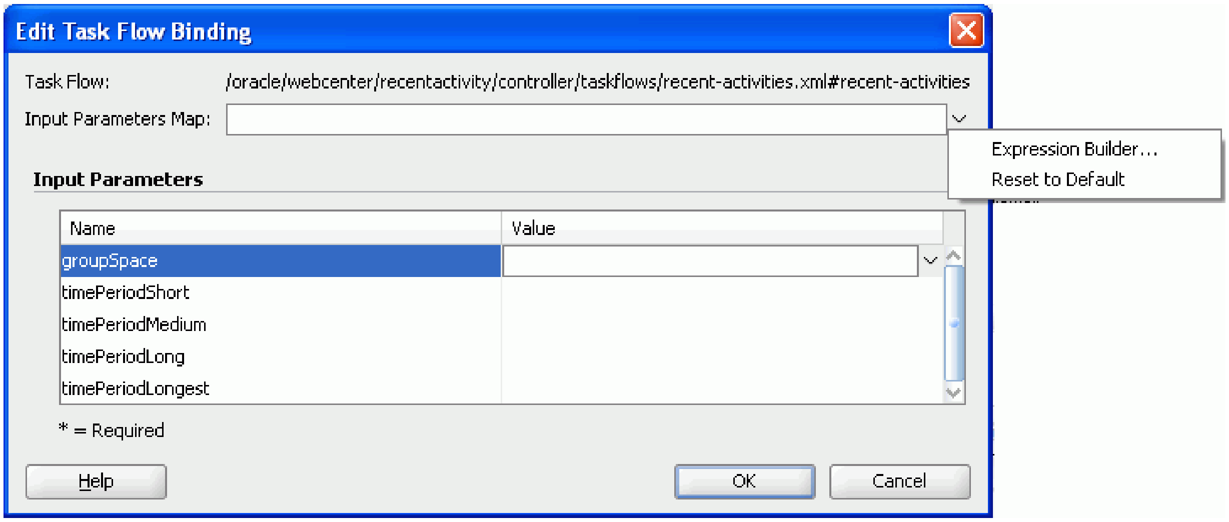
In the Edit Task Flow Binding dialog shown in Figure 51–3, you can set the values for the time range that displays at runtime. This time range controls what activities display, as you will see in the next section. If you leave these parameters empty, then recent activities uses the default values.

Table 51–1 describes the possible values for these parameters. The default values specified in this table come from the `adf-config.xml` file, as described in Section 51.3.1, "Refining the Behavior of Recent Activities."

Table 51–1 Recent Activities Time Range Parameter Values

Parameter	Values
`groupSpace`	Leave the value of this parameter as `null`. **Note:** This parameter is only used within WebCenter Portal and is not relevant in non-scoped applications.
`timePeriodShort`	Default value: `Today` Possible values: `Today`, `Yesterday`, or a time in minutes
`timePeriodMedium`	Default value: `Since Yesterday` Possible values: `Today`, `Yesterday`, or a time in minutes
`timePeriodLong`	Default value: `10080` (10080 minutes is equivalent to 7 days.) Possible values: `Today`, `Yesterday`, or a time in minutes
`timePeriodLongest`	Default value: `43200` (43200 minutes is equivalent to 30 days.) Possible values: `Today`, `Yesterday`, or a time in minutes

Figure 51–3 Example of the Edit Task Flow Binding Dialog for Recent Activities



Edit Task Flow Binding

Task Flow: /oracle/webcenter/recentactivity/controller/taskflows/recent-activities.xml#recent-activities

Input Parameters Map:

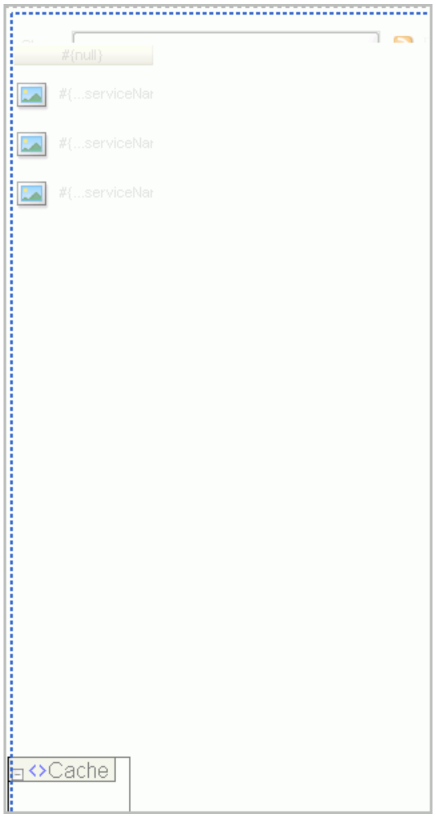
Input Parameters

Name	Value
groupSpace	
timePeriodShort	
timePeriodMedium	
timePeriodLong	
timePeriodLongest	

* = Required

6. Click **OK**. The binding appears on your page, as shown in Figure 51–4.

Figure 51–4 The Recent Activities Task Flow on a Page in the Design View



7. Save your project and run your page to the browser.

Note: When you add the Recent Activities task flow to your page, you will see a task flow parameter called **groupSpace**. The default value of this parameter is `null`, which tells the task flow to search the entire application for recent activities.

51.2.3 Modifying Recent Activities Task Flow Parameters

The Recent Activities task flow has required and optional task flow binding parameters. You can adjust the parameter values when you drop a task flow onto a page or after you have placed a task flow on a page. For information about modifying parameters, see Section 32.2.2.3, "How to Modify Announcement Task Flow Parameters." The procedure for modifying parameters is identical across all task flows.

51.2.4 Setting Security for Recent Activities

Recent activities uses the security applied to the underlying components being analyzed. So, the information returned by the component only contains content for which the current user has at least View privileges. For example, a user who does not have View privileges to view content in a document library will not see recently added documents in the recent activities view. Similarly, a public user only sees activities returned on components exposed to the public that do not require authentication to view.

51.3 Advanced Information for Recent Activities

In addition to the task flow parameters, you can further refine the behavior of recent activities. This section describes how to perform that refinements. It also describes how you can obtain RSS news feed for recent activities.

This section contains the following subsections:

- Section 51.3.1, "Refining the Behavior of Recent Activities"
- Section 51.3.2, "Obtaining RSS News Feed URL for Recent Activities"

51.3.1 Refining the Behavior of Recent Activities

You can change a variety of the recent activities parameters after you have added the task flow to your application. When you add the task flow to your page, you also automatically add the following entry to the `adf-config.xml` file, located in the Application Resources panel, under **Descriptors**, in the **ADF META-INF** folder:

```
  <recentactivityC:adf-recent-activity-config
 xmlns="http://xmlns.oracle.com/webcenter/recentactivity/config">
     <display-properties numServiceRows="25" shortPeriod="TODAY"
                       mediumPeriod="YESTERDAY" longPeriod="10080"
                       longestPeriod="43200"/>
    <services-filter>
      <exclude/>
    </services-filter>
  </recentactivityC:adf-recent-activity-config>
```

In this entry, you can change the settings described in Table 51–2.

Table 51–2 Recent Activities Settings in the adf-config.xml File

Setting	Description
`numServiceRows`	Default value: `25` The maximum number of rows displayed for a single component. If there are more recent activity results than this, the most recent ones up to this number are returned. For example, if there are 32 recently modified documents and this setting is 25 then only the most recent 25 will show up in the results.
`shortPeriod`	Default value: `Today` See Table 51–1. This setting is the same as the `timePeriodShort` task flow parameter, and is used when the task flow parameter is not specified.
`mediumPeriod`	Default value: `Yesterday` See Table 51–1. This setting is the same as the `timePeriodMedium` task flow parameter and is used when the task flow parameter is not specified.
`longPeriod`	Default value: `10080` (Last 7 Days) See Table 51–1. This setting is the same as the `timePeriodLong` task flow parameter and is used when the task flow parameter is not specified.
`longestPeriod`	Default value: `43200` (Last 30 Days) See Table 51–1. This setting is the same as the `timePeriodLongest` task flow parameter and is used when the task flow parameter is not specified.

`services-filter`	Default value: `null`
	Use this tag to filter out components you do not want to track. The following example omits any changes to the Page service from displaying in recent activities:
	`<services-filter>`
	`  <exclude>oracle.webcenter.page</exclude>`
	`</services-filter>`
	By default, no components are omitted.
	To filter out other components use the service ID values listed in Table G–7.

51.3.2 Obtaining RSS News Feed URL for Recent Activities

You can expose WebCenter Portal functionality in a Portal Framework application. Your Portal Framework application users can find out what is happening in a specific portal through RSS news feeds.

Configure RSS news feeds for recent activities to enable users to view recent activities from within a portal. To obtain the portal RSS news feed URL for recent activities, use either of the following WebCenter Portal APIs:

- `getServiceRssFeedURL`
- `GetServiceRssFeedURLbyGUID`

To obtain an RSS feed URL, you must identify the portal (by name or GUID) and specify the component required (by service ID). The service ID for recent activities is `GroupSpaceWSClient.RECENT_ACTIVITY_SERVICE_ID`. For information about how to use these APIs, see Section 56.1.5.3.9, "Retrieving RSS Feed URLs for WebCenter Portal

Tools and Services."

52 Integrating RSS

This chapter describes how to integrate the RSS Viewer at design time, allowing users to add and view RSS 2.0 formatted feeds within a Portal Framework application.

This chapter includes the following sections:

- Section 52.1, "Introduction to RSS"
- Section 52.2, "Basic Configuration for the RSS"

For more information about managing and including RSS feeds, see:

- the "Managing RSS" chapter in *Administering Oracle WebCenter Portal*
- the "Adding RSS Feeds to a Portal" chapter in *Building Portals with Oracle WebCenter Portal*
- the "Monitoring RSS Feeds" chapter in *Using Oracle WebCenter Portal*

52.1 Introduction to RSS

Really Simple Syndication (RSS) provides a means of accessing the content of many different web sites from a single location—a news reader. WebCenter Portal provides the functionality that encompasses the RSS Viewer and the ability to show RSS feeds from various WebCenter Portal components. The RSS Viewer enables you to view external news feeds from different web sites from within your Portal Framework applications.

> **Note:** Although RSS is supported within discussion forums for portals, Portal Framework applications do not support RSS within discussion forums.

This section provides an overview of the features and requirements with RSS. It includes the following subsections:

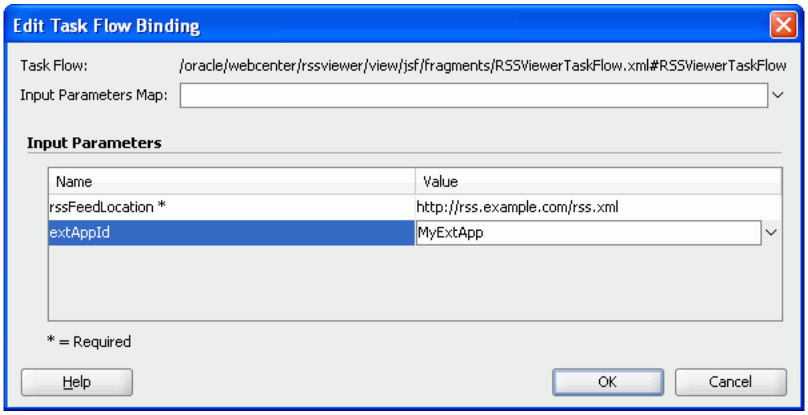
- Section 52.1.1, "Understanding RSS"
- Section 52.1.2, "Requirements for RSS"
- Section 52.1.3, "What Happens at Runtime"

52.1.1 Understanding RSS

To display news feeds from external sources on your application pages, you add the RSS Viewer task flow and specify the URL for the required RSS feed, as shown in Figure 52–1. Your application users can then view the RSS feed at runtime.

For accessing secure application content, the RSS Viewer task flow supports integration with external applications to provide credential mapping services to authenticate with a remote feed. For information about using external applications, see Section 74.13, "Working with External Applications."

Figure 52–1 RSS Details Specified at Design Time



Edit Task Flow Binding

Task Flow: /oracle/webcenter/rssviewer/view/jsf/fragments/RSSViewerTaskFlow.xml#RSSViewerTaskFlow

Input Parameters Map:

Input Parameters

Name	Value
rssFeedLocation *	http://rss.example.com/rss.xml
extAppId	MyExtApp

* = Required

52.1.2 Requirements for RSS

The RSS functionality does not require any back-end server. You do not need to set up a connection to use this. However, you can set up a proxy server for RSS, if required.

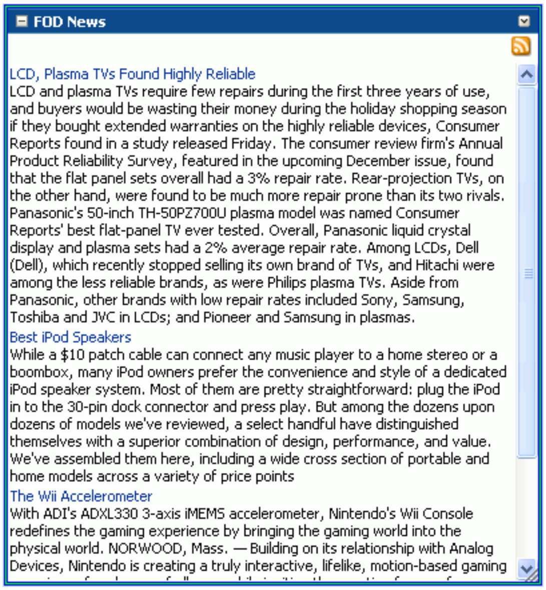
52.1.3 What Happens at Runtime

At runtime, RSS news feeds are displayed from the RSS feed location specified at design time. Users can click the RSS icon on the top-right corner of the application page to open the URL specified as the RSS feed location.

Any user who has permissions to modify the application page can access the RSS Viewer parameters and change the URL of the RSS feed that is rendered.

For information about RSS at runtime, see the "Monitoring RSS Feeds" chapter in *Using Oracle WebCenter Portal*.

Figure 52–2 RSS Feed at Runtime



LCD, Plasma TVs Found Highly Reliable

LCD and plasma TVs require few repairs during the first three years of use, and buyers would be wasting their money during the holiday shopping season if they bought extended warranties on the highly reliable devices, Consumer Reports found in a study released Friday. The consumer review firm's Annual Product Reliability Survey, featured in the upcoming December issue, found that the flat panel sets overall had a 3% repair rate. Rear-projection TVs, on the other hand, were found to be much more repair prone than its two rivals. Panasonic's 50-inch TH-50PZ700U plasma model was named Consumer Reports' best flat-panel TV ever tested. Overall, Panasonic liquid crystal display and plasma sets had a 2% average repair rate. Among LCDs, Dell (Dell), which recently stopped selling its own brand of TVs, and Hitachi were among the less reliable brands, as were Philips plasma TVs. Aside from Panasonic, other brands with low repair rates included Sony, Samsung, Toshiba and JVC in LCDs; and Pioneer and Samsung in plasmas.

Best iPod Speakers

While a $10 patch cable can connect any music player to a home stereo or a boombox, many iPod owners prefer the convenience and style of a dedicated iPod speaker system. Most of them are pretty straightforward: plug the iPod in to the 30-pin dock connector and press play. But among the dozens upon dozens of models we've reviewed, a select handful have distinguished themselves with a superior combination of design, performance, and value. We've assembled them here, including a wide cross section of portable and home models across a variety of price points

The Wii Accelerometer

With ADI's ADXL330 3-axis iMEMS accelerometer, Nintendo's Wii Console redefines the gaming experience by bringing the gaming world into the physical world. NORWOOD, Mass. — Building on its relationship with Analog Devices, Nintendo is creating a truly interactive, lifelike, motion-based gaming

52.2 Basic Configuration for the RSS

This section describes how to set up the proxy server for RSS and add the RSS Viewer task flow to your application.

This section includes the following subsections:

- Section 52.2.1, "Setting Up a Proxy Server for RSS"
- Section 52.2.2, "Adding RSS Functionality at Design Time"
- Section 52.2.3, "Setting Security for the RSS Viewer"

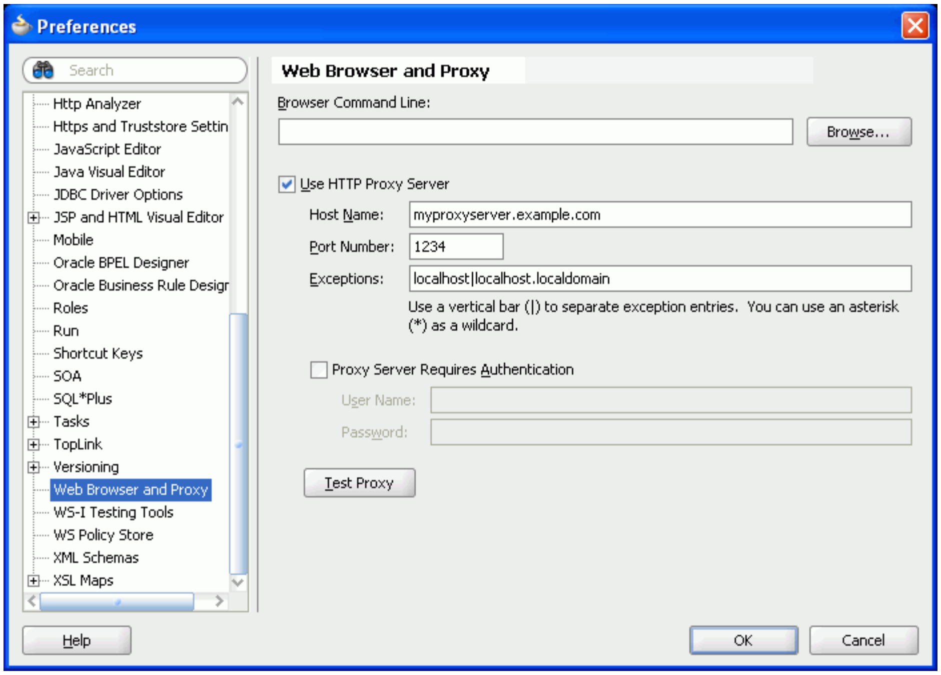
52.2.1 Setting Up a Proxy Server for RSS

The RSS functionality does not require any connections. You can simply point to the URL of the RSS feed. However, if you want to point to an RSS feed that is external to your intranet and application, you may need to set up a proxy server for your application.

To set up a proxy server for RSS:

1. In Oracle JDeveloper, from the **Tools** menu, choose **Preferences**.
2. In the Preferences dialog, scroll down the list on the left side and select **Web Browser and Proxy**.
3. In the right pane, under Web Browser and Proxy, select **Use HTTP Proxy Server** and enter the host name and port number of your proxy server, and note any exceptions (Figure 52–3).
4. Click **OK**.

Figure 52–3 Setting Up a Proxy Server



Web Browser and Proxy

Browser Command Line:

☑ Use HTTP Proxy Server

Host Name: myproxyserver.example.com

Port Number: 1234

Exceptions: localhost|localhost.localdomain

Use a vertical bar (|) to separate exception entries. You can use an asterisk (*) as a wildcard.

☐ Proxy Server Requires Authentication

User Name:

Password:

52.2.2 Adding RSS Functionality at Design Time

This section describes the RSS Viewer task flow and how to add it to your application.

This section contains the following subsections:

- Section 52.2.2.1, "About RSS Viewer Task Flow"
- Section 52.2.2.2, "How to Add the RSS Viewer Task Flow to Your Application"
- Section 52.2.2.3, "How to Modify RSS Viewer Task Flow Parameters"

52.2.2.1 About RSS Viewer Task Flow

WebCenter Portal includes the RSS Viewer task flow, which you can add to your application to enable your users to access an RSS feed. You can add multiple instances of the task flow to your application and use the Edit Task Flow Binding dialog to point to multiple RSS feed locations.

52.2.2.2 How to Add the RSS Viewer Task Flow to Your Application

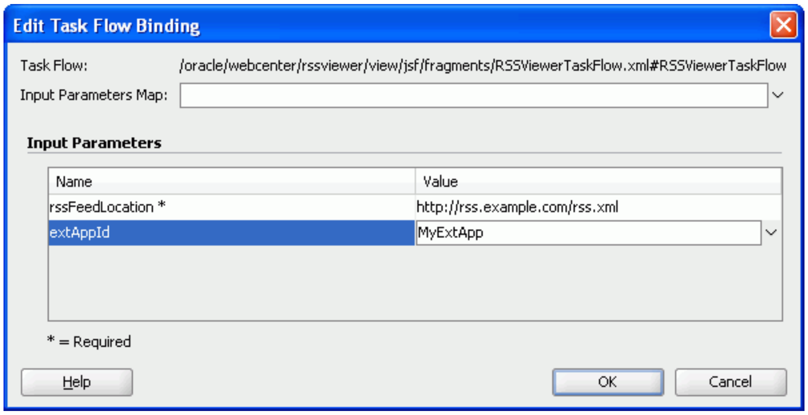
To add the RSS Viewer task flow to your application:

1. Follow the steps in Section 4.2.1, "How to Prepare Your Application to Consume Tools and Services" to implement security, and create a customizable page in your application, if necessary.
2. Open the customizable page on which you want to add the RSS Viewer task flow.
3. If the RSS feed you want to use requires authentication, create an external application. If it does not require authentication, proceed to Step 4.

Note: For more information about external applications, refer to Section 74.13, "Working with External Applications."

4. In the Resource Palette, open the **WebCenter Portal - Services Catalog**, then expand the **Task Flows** folder.
5. Click **RSSViewer**, drag it to your page in the Design view, and choose **Region**.
6. In the Edit Task Flow Binding dialog, specify the URL of the RSS feed. If an external application is used for authenticating the RSS feed, specify its name (the application name, not the application display name), as shown in Figure 52–4.

Figure 52–4 Example of the Edit Task Flow Binding Dialog for RSS



Task Flow: /oracle/webcenter/rssviewer/view/jsf/fragments/RSSViewerTaskFlow.xml#RSSViewerTaskFlow
Input Parameters Map:

Input Parameters

Name	Value
rssFeedLocation *	http://rss.example.com/rss.xml
extAppId	MyExtApp

* = Required

Table 52–1 describes the possible values for the RSS Viewer task flow binding parameters.

Table 52–1 RSS Viewer Task Flow Binding Parameters

Parameter	Value
`rssFeedLocation`	Enter the location of the RSS feed. For example, to use the Oracle Press Releases RSS feed, enter: `${'http://www.oracle.com/rss/rss_ocom_pr.xml'}`
`extAppId`	Enter the name of the external application you want to use to authenticate the Portal Framework application with the RSS feed. If the RSS feed does not require authentication, then you do not need to set up and identify an external application for this.

7. Click **OK** and save your page. The binding displays on your page.

   If you look at the Source tab of your page, you can see the RSS Viewer task flow in the page source, as shown in Example 52–1.

Example 52–1 RSS Viewer Task Flow in the Page Source

```
<af:form id="f1">
     <af:region value="#{bindings.RSSViewerTaskFlow1.regionModel}" id="r1"/>
     <af:region value="#{bindings.RSSViewerTaskFlow2.regionModel}" id="r2"/>
</af:form>
```

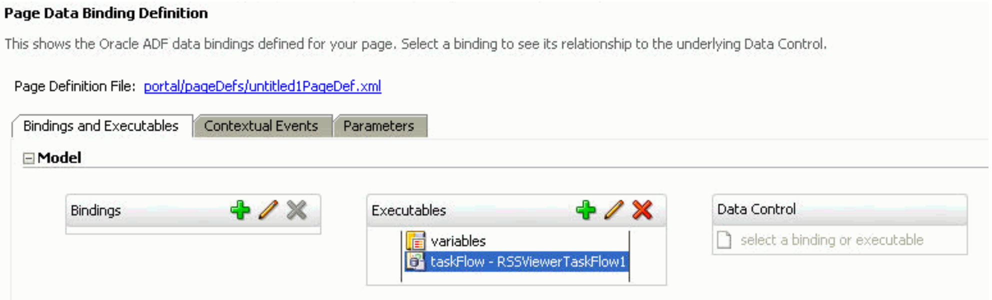
52.2.2.3 How to Modify RSS Viewer Task Flow Parameters

The RSS Viewer task flow has required and optional task flow binding parameters.

You can adjust the parameter values when you drop the task flow onto a page or after you have placed a task flow on a page:

1. Click the **Bindings** tab at the bottom of the page (next to the **Source** tab).
2. Under **Executables**, the RSS Viewer task flow you added is listed (Figure 52–5).

Figure 52–5 Page Data Binding Definition



Page Data Binding Definition

This shows the Oracle ADF data bindings defined for your page. Select a binding to see its relationship to the underlying Data Control.

Page Definition File: portal/pageDefs/untitled1PageDef.xml

3. Select the task flow, and next to the Executables heading, click the **Edit selected element** (pencil) icon.
4. In the Edit Task Flow Binding dialog, revise the binding parameter values as required.
5. When you are finished, click **OK.**
6. Save and run your page to see the results.

52.2.3 Setting Security for the RSS Viewer

To use RSS with a public RSS feed, you do not need to set security. To use RSS with an RSS feed that requires authentication, you can set up an external application for your application that sets up either user credentials or public credentials for accessing the RSS feed.

Note: For secure application content, your news reader must support BASIC authentication.

For more information about using external applications, see Section 74.13, "Working with External Applications."

Only authenticated users can view secure RSS feeds. If a user is not authenticated and the RSS feed is secured, the user will not see any content in the RSS Viewer unless the external application specifies public credentials.

Note: When you add the RSS Viewer task flow to your Portal Framework application, the View grant is automatically added to the `authenticated-role`.

Part IX

Extending WebCenter Portal and Portal Framework Applications

Part IX contains the following chapters:

53

Using Oracle WebCenter Portal REST APIs

This chapter describes the WebCenter Portal REST APIs, with which you can retrieve, adding, modify, and delete server data.

This chapter includes the following topics:

This chapter includes some examples that demonstrate how to use WebCenter Portal REST APIs. For more examples, see the Oracle WebCenter Portal Demonstrations and Samples page on the Oracle Technology Network (OTN) at:

`http://www.oracle.com/technetwork/middleware/webcenter/ps3-samples-176806.html`

53.1 Introduction to REST

REST (REpresentational State Transfer) is an architectural style for making distributed resources available through a uniform interface that includes uniform resource identifiers (URIs), well-defined operations, hypermedia links, and a constrained set of media types. Typically, these operations include reading, writing, editing, and removing, and media types include JSON and XML/ATOM.

REST commands use standard HTTP methods as requests to point to the resource being used. Every request returns a response, indicating the status of the operation. If the request results in an object being retrieved, created, or updated, the response includes a standard representation of that object.

REST supports multiple clients, both from client machines and other servers, and it can be used from just about any client or development technology, including Java, JavaScript, Ruby on Rails, PHP, .Net, and so on.

> **Tip:** For a good general introduction to REST, see the Wikipedia article Representational State Transfer at `http://en.wikipedia.org/wiki/Representational_State_Transfer`.

REST is typically used with Rich Internet Applications (RIA) that are client-side scripted and require the ability to interact with data from a server-side application. For example, the WebCenter iPhone App uses WebCenter Portal REST APIs to interact with a WebCenter Portal application. The native iPhone client is written in Objective-C, and the REST APIs enable the client to send and retrieve application data.

53.2 Understanding the Username-Based Security Token Encryption

To provide additional security, every URI, for both `href` and `template` attributes, includes a security token parameter that is based on the authenticated username (a utoken).

The security generation algorithm uses a randomly generated "salt" along with the username. The salt ensures that if any of the parameters used to perform encryption become compromised, existing tokens can be invalidated and new ones generated. Most importantly, because the username is used as part of the user token generation algorithm, the salt prevents having to change all user names in the event of a compromise.

The salt is stored in the Credential Store Framework (CSF) in the map `o.webcenter.jf.csf.map` against key `user.token.salt`. You can change the value of this key (and other keys used for token encryption) by accessing CSF in Oracle Enterprise Manager.

> **Caution:** If you change the encryption key values, all existing username based security tokens will immediately become invalid. Only change these values under extraordinary circumstances, like an algorithm parameter compromise.

53.3 Benefits of Using REST

Many excellent articles have been published about REST and the benefits of the RESTful style of software architecture. Some of these benefits include:

- Using "Hypermedia As The Engine Of Application State" (HATEOAS) links to access the REST API helps promote API robustness. Since the clients only use URIs returned from the server, if the server changes the URI format, the client will continue to function properly. See also Section 53.5, "Understanding the Link Model."
- Using the standard HTTP protocol allows network infrastructure to cache REST requests where appropriate, reducing load on both the client and server. See also Section 53.11, "Managing Caches."
- Stateless REST requests allow each request to be served by any number of different servers, helping with scalability.
- Using the standard HTTP protocol allows a wide variety of clients to interact with the REST APIs without requiring specialized libraries.

53.4 Introduction to WebCenter Portal's REST APIs

In addition to enabling mobile access, WebCenter Portal REST APIs allow you to take advantage of Web 2.0 technologies like Ajax, JavaScript, and JSON to create rich, interactive browser-based user interfaces and to access and modify Oracle WebCenter Portal Framework and WebCenter Portal data. In general, the WebCenter REST commands provide a more natural and easy-to-use alternative to a SOAP-style Web services approach.

Table 53–1 describes the Oracle WebCenter Portal REST APIs provided for WebCenter Portal tools and services features.

> **Note:** Portal Framework applications only support the REST API for Navigation. All other REST APIs are supported only by the WebCenter Portal application.

Table 53–1 Summary of WebCenter Tools and Services Features Supported by REST APIs

REST API	Description	Chapter
Discussions	Enable a client to post, read, update, and delete discussion forums, topics, and messages.	Section 33.3.8, "Using the Discussions REST API."
Lists	Enables a client to browse all the lists associated with a named portal; search list columns given a search term; create new lists; add, update, and remove list rows; and similar sorts of list-related tasks	Section 49.4, "Using the Lists REST API."
People Connections	Enable a client to view profile data; manage connection lists, feedback, and messages; create new activities and view activities for users, lists, and portals.	Chapter 42, "Using the People Connections REST APIs."
WebCenter Portal	Enable a client to retrieve portal metadata and view, create, update, and delete portal lists and list items. You can also retrieve portal membership information.	Section 56.2, "Using the WebCenter Portal REST API."
Content Management	Uses the CMIS (Content Management Interoperability Services) RESTful server binding to provide access to the CM VCR (Content Management Virtual Content Repository).	Chapter 31, "Content Management REST API."
Activity Graph	Enables you to retrieve recommendations for connections, portals, and items using the underlying Activity Graph engine.	Section 46.3.2, "Using the Activity Graph REST APIs."
Events	Lets you access calendar events associated with a named portal.	Section 48.3, "Using the Events REST API."
Feedback	Enables a client to create, read, and delete feedback in a social networking application.	Chapter 42.3, "Feedback REST API."
Search	Lets you post, read, update, and delete searches. You can specify keywords and the scope of the search; for example, the iPhone could search for "smith" in all portals, documents and wiki pages.	Section 45.3.4, "Using the Search REST APIs."
Tags	Enables a client to read, post, update, and delete tags and tagged items.	Section 44.3.2, "Using the Tags REST APIs."

Table 53–1 (Cont.) Summary of WebCenter Tools and Services Features Supported by REST APIs

REST API	Description	Chapter
Navigation	Use the navigation REST APIs to create your own interface for displaying navigations. **Note:** The navigation REST APIs do not share the resource index described in this chapter.	Section 10.11.2, "Using the Navigation REST APIs."
Personalization	Enables you to access the Personalization Conductor.	Chapter 72, "Conductor API Reference."
Pagelets	Allows remote Web services to retrieve information about resources and pagelets. Inject pagelets into non-proxied pages, allowing the Pagelet Producer to act as a portlet provider for Oracle WebCenter Interaction, Oracle WebLogic Portal, or other third-party portals.	Section 62.7.2.2, "Accessing Pagelets Using REST."

Note: XSD files for the following URNs:

```
urn:oracle:webcenter:activities:stream -> activitystream.xsd
urn:oracle:webcenter:messageBoard -> wall.xsd
urn:oracle:webcenter:people -> people.xsd
urn:oracle:webcenter:people:invitations -> people.xsd
urn:oracle:webcenter:people:person -> people.xsd
urn:oracle:webcenter:search:results -> search.xsd
urn:oracle:webcenter:spaces -> spaces.xsd
```

can be found in your `<WCP_ORACLE_HOME>/webcenter/schemas/` directory.

53.5 Understanding the Link Model

Hypermedia is at the core of two of the most successful Web-based formats: HTML and ATOM. HTML and ATOM allow consumers to navigate to other hypermedia documents through links–for example, clicking on a link to go to a news article.

Hypermedia drives the RESTful application state (known as HATEOAS: Hypermedia As The Engine Of Application State).

Note: HATEOAS analogy to define application state:

Suppose you are completing your taxes in your favorite browser. You finish entering your W-2 data and move on to deductions when the browser crashes. The state you lost—the fact that you were on deductions and still needed to enter data—is the application state; not the W-2 data entered (that is, change states from the current state).

HATEOAS dictates that *this* state—the application state—be captured wholly in hypermedia. Application state is where you are in the application, not what data you've entered into the application. One of the benefits of this approach is that it simplifies the client and server, because they do not need to be aware of the state they are in. The link contains all the state information necessary to process the request, so, when the browser restarts and returns to the link, the user will be at the same place in the tax process.

Given a set of top-level URI entry points to a RESTful service, all interactions beyond those entry points are driven by hypermedia links returned in response representations. This link-centered approach helps keep the client from becoming too tightly coupled to the server URLs. The client is using URLs given to it by the server, therefore the client code does not break if the server URLs change format.

Understanding this link model helps you understand how to use the data the service returns to navigate the REST APIs.

This section describes the hypermedia link model used by WebCenter's RESTful services. It includes the following subsections:

- Section 53.5.1, "Using the Resource Index"
- Section 53.5.2, "Anatomy of a Link"

53.5.1 Using the Resource Index

In WebCenter, the *Resource Index* is your starting point for all authenticated access. The Resource Index provides access to the set of top-level URI entry points. It provides the way in to all the available WebCenter RESTful services. The Resource Index URI is the only URI that you need to know.

> **Tip:** A REST client is helpful for generating custom REST requests. For example, a Firefox RESTClient add-on is available at:
>
> `http://restclient.net/`
>
> Other similar REST clients can also be easily obtained.

The WebCenter Resource Index URI is:

```
http://host:port/rest/api/resourceIndex
```

> **Note:** Access to the Resource Index always requires authentication; however, you can (optionally) access the CMIS resource entry point anonymously using the following URI:
>
> `http://host:port/rest/api/cmis/repository`
>
> See also Section 53.9, "Security Considerations for CMIS REST APIs," and Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

The first step in using the WebCenter Portal REST APIs is to send a `GET` request to the Resource Index. The response varies depending on the services available and the media type of the request. Example 53–1 shows how the response might look if you made an Ajax request using JavaScript (and possibly a client-side scripting library, such as Dojo) to retrieve the JSON data for the Resource Index. Note that this is an abridged sample response and does not include all of the links actually present in a real response.

Example 53–1 Response to a GET on the Resource Index

```
{
  "resourceType": "urn:oracle:webcenter:resourceindex",
  "links": [
    {
      "template": "opaque-template-uri",
      "resourceType": "urn:oracle:webcenter:messageBoard",
      "href": "opaque-uri",
      "capabilities": "urn:oracle:webcenter:read"
    },
    {
      "resourceType": "urn:oracle:webCenter:cmis",
      "href": "opaque-uri",
      "capabilities": "urn:oracle:webcenter:read"
    },
    {
      "template": "opaque-template-uri",
      "resourceType": "urn:oracle:webcenter:discussions:forums",
      "href": "opaque-uri",
      "capabilities": "urn:oracle:webcenter:read"
    },
    {
      "resourceType": "urn:oracle:webcenter:resourceindex",
      "rel": "self",
      "href": "http://host:port/rest/api/resourceIndex",
      "capabilities": "urn:oracle:webcenter:read"
    },
    {
      "template": "opaque-template-uri",
      "resourceType": "urn:oracle:webcenter:activities:stream",
      "href": "opaque-uri",
      "capabilities": "urn:oracle:webcenter:read"
    },
    {
      "template": "opaque-template-uri",
      "resourceType": "urn:oracle:webcenter:people:person",
      "capabilities": "urn:oracle:webcenter:read"
    },
    {
      "template": "opaque-template-uri",
      "resourceType": "urn:oracle:webcenter:feedback",
      "href": "opaque-uri",
      "capabilities": "urn:oracle:webcenter:read"
    },
    {
      "template": "opaque-template-uri",
      "resourceType": "urn:oracle:webcenter:spaces",
      "href": "opaque-uri",
      "capabilities": "urn:oracle:webcenter:read"
    },
    {
      "template": "opaque-template-uri",
      "resourceType": "urn:oracle:webcenter:people",
      "href": "opaque-uri",
      "capabilities": "urn:oracle:webcenter:read"
    }
  ]
}
```

By interpreting the links returned in the Resource Index data, you can retrieve the URI entry point for an individual service by locating the URI for the resource type you want to use. You can then continue navigating through the hypermedia until you can perform the required operation. Example 53–2 shows a method that locates a URI given the Resource Index JSON data.

Example 53–2 Locating the URI for a Particular Service in the Resource Index

```
/* Parse the resourceIndex to find the specified URL and
 * return it.
 *
 * @Param jsonData the JSON data retrieved from calling
 *        the /rest/api/resourceIndex URL.
 * @Param strResourceType the resource type of the URL
 *        you want to retrieve from the resourceIndex data.
 *        E.g., 'urn:oracle:webcenter:activities:stream'
 */
function getResourceURL(jsonData, strResourceType)
{
  // Using the HATEOAS model, we browse the returned links
  // looking for the one with the correct resource type.
  for (var i = 0; i < data.links.length; i++) {
    if (data.links[i].resourceType == strResourceType) {
      return data.links[i].href;
    }
  }
}
```

53.5.2 Anatomy of a Link

The `resourceType`, `rel`, and `capabilities` attributes of the hypermedia link provide metadata that enable clients to determine which URI (`href` or `template`) to use, without having to parse the URIs directly. The URIs are opaque—the metadata determines which link is useful in a given circumstance.

Example 53–3 and Example 53–4 show the anatomy of a hypermedia link as XML and in JSON document fragments, respectively.

Example 53–3 Link in an XML Document Fragment

```
<links>
  <link href="opaque-URI"
        template="opaque-template-URI (optional)"
        rel="rel-name"
        title="human-readable-title (optional)"
        type="media-type (optional)"
        resourceType="resource-type"
        capabilities="operation"/>
  ...repeat as needed...
</links>
```

Example 53–4 Link in a JSON Document Fragment

```
"links": [
  {
    "href":"opaque-URI",
    "template":"opaque-template-URI (optional)",
    "rel":"rel-name",
    "title":"human-readable-title (optional)",
    "type":"media-type (optional)",
    "resourceType":"resource-type",
    "capabilities":"operation"
  },
  ...repeat as needed...
]
```

Multiword field, element, and attribute names are formatted in camel case, unless the representation is attempting to conform to a specification not under the service author's direct control. Acronyms are treated as normal words with their case adjusted accordingly (for example, `fooXml` or `xmlFoo`) as shown in Example 53–5 and Example 53–6.

Example 53–5 XML Naming Convention

```
<myElement>text</myElement>
```

Example 53–6 JSON Naming Convention

```
{"myElement": "text"}
```

This section includes the following subsections that describe the different attributes of the hypermedia link:

- Section 53.5.2.1, "Resource Type"
- Section 53.5.2.2, "Relationship"
- Section 53.5.2.3, "Capabilities"
- Section 53.5.2.4, "Media Type"
- Section 53.5.2.5, "Templates"

53.5.2.1 Resource Type

The `resourceType` link attribute indicates the type of resource to which the link points. Clients should use the `resourceType` to determine the expected response bodies for `GET` and `POST` and allowable request bodies for `POST` and `PUT`.

For more information, see Section 53.7, "Navigating Hypermedia Using HTTP."

53.5.2.2 Relationship

The `rel` link attribute indicates the relationship of the linked object to the current object (that is, the object that contains the list of links). The value of this attribute is a space-separated list of the following currently supported values:

- `self` - The linked object is the current object
- `related` - The linked object is related to the current object
- `via` - The linked object is the source of the information for the current object
- `alternate` - The linked object is a substitute for the current object (typically, the same object in another format, such as an HTML page that displays the current object)
- `urn:oracle:webcenter:parent` - The linked object is the parent of the current object. That is, the linked object owns the current object

Note: Some REST APIs for some WebCenter features may contain additional `rel` link attributes. See the REST API documentation for each specific feature for more information.

53.5.2.3 Capabilities

The `capabilities` link attribute indicates which methods are supported by the linked resource.

Links are returned only if a client is allowed to access that resource. User authorization can affect the capabilities a client has with the links returned in a response representation. In general, services only return the capabilities that the current authorized user has permission to execute and that the resource supports.

If there is no link, then the client cannot access the resource. If a link has no capabilities, then it is not returned to the client, meaning that the client does not have permission to do anything with that link (even read it).

Capability-based expression of hypermedia links communicates the range of operations that the client can expect to succeed, which allows the client to dynamically configure any associated UI to provide the best overall user experience.

The value of this attribute is a space-separated list of the following values:

- `urn:oracle:webcenter:create` - This maps to the HTTP verb `POST`
- `urn:oracle:webcenter:read` - This maps to the HTTP verb `GET`
- `urn:oracle:webcenter:update` - This maps to the HTTP verb `PUT`
- `urn:oracle:webcenter:delete` - This maps to the HTTP verb `DELETE`

Note: The top-level `resourceIndex` links only returns the `read` capability, even if the user is authorized with additional capabilities.

Note: Querying a resource for the allowed HTTP verbs using `OPTIONS` returns the verbs that the resource can support in general, and does not take a user's access into account. The capabilities attribute in a link describes exactly what the current user can do with the current resource. `OPTIONS` may return more HTTP verbs than the current user is allowed.

53.5.2.4 Media Type

The `type` link attribute indicates the media types supported by the linked object.

All REST services, except for CMIS, support both XML (`application/xml`) and JSON (`application/json`) media type. CMIS currently supports only ATOM. For more information about the CMIS REST API, see Chapter 31, "Content Management REST API."

53.5.2.5 Templates

The `template` link attribute indicates that the client can use a URI template, instead of the `href` URI, to provide parameterized values for the linked object. Links must include at least an `href` or a `template` URI, but can include both.

Some hypermedia links support request query parameters that allow the client to configure the link in different ways. Rather than force the client to know the URI format and manually build the URI, URI templates are used. These templates allow client code to easily insert data into a URI without having to understand exactly how the URI works. This maintains the opacity of hypermedia URIs and protects the client from changes to the URI format.

Example 53–7 shows a URI template including several request query parameters.

Example 53–7 URI Template

```
http://host:port/.../lists?startIndex={startIndex}&itemsPerPage={itemsPerPage}&q={
searchTerms}&projection={projection}
```

WebCenter Portal REST APIs use a simple slot replacement syntax that follows many industry URI template schemes.

For example, using the template in Example 53–7, to see 10 list items (default) on the first page, the client would provide a value of `1` for the `startIndex` parameter and a value of `10` for the `itemsPerPage` parameter, as shown in Example 53–8.

Example 53–8 URI Template with Parameter Values

```
http://host:port.../lists?startIndex=1&itemsPerPage=10
```

> **Note:** All unused parameters must be removed from a template before it can be used. Clients may not submit unprocessed templates to the service that produced it; doing so results in undefined behavior, generally returning a status code of 500.
>
> Clients must process templates into valid URI form before submitting to the server. Clients must replace slots with appropriate values, taking care to properly URI encode any value replacing the slot token. If a client does not have a suitable value for one or more of the slots in the template, then it must replace the slot token with an empty string.

You must URL-encode special or reserved character in parameter values. For example, to search lists for a person named Günter, you must URL-encode the ü as shown in Example 53–9.

Example 53–9 Encoding Special Characters in URI Templates

```
http://host:port.../lists?q=G%FCnter
```

Common Request Query Parameters

Many resources support a common set of request query parameters. For example, when retrieving a collection of entities, it is common to change the shape of the results set by limiting the quantity or details of the results. The REST framework uses the following request parameters to scope results and provide security:

- `startIndex` - Specifies the index of the first matching result that should be included in the result set (0-*n* ... zero based). This is used for pagination.
- `itemsPerPage` - Specifies the maximum number of results to return in the response (1-*n*). This is used for pagination.
- `q` - Specifies implementation-specific searching. Searches may be specified using the following format (square brackets [] denote optional values):

  ```
  [[field1:[operand]][:]value1[;field2:operand:value2]]
  ```

  For example:

  ```
  &q=login:equals:monty
  &q=title:contains:issues
  &q=creator:equals:monty;description:contains:Urgent
  ```

While each resource uses the same format for the q parameter, the way search is implemented is different depending on the resource being searched. For more information about how each resource implements search, see the chapter for the specific service.

- projection - Reserved for implementation-specific projection of model representations, such as variable recursion depth, field or attribute filtering. Valid values are summary or details.

  For example, requesting a projection of summary for a collection of lists, returns only the title, description, and hypermedia links. Requesting a projection of details results in the server sending back a collection of lists that includes all the column metadata for each list. This may require additional processing time or database queries on the server.

  The following example request results in the response entity containing a deeper object graph.

  ```
  http://host:port/...lists&projection=details
  ```

- data - This parameter accepts a comma separated list of data sets and items. This parameter lets clients specify what data they would like to receive. For example, a mobile device application might use this parameter to limit the amount of XML data returned. If both the projection and data query string parameters are present, the data parameter will be used to determine which data to return. If you specify the constant 'data' as the data parameter, all the standard information will be returned for the resource.

For information about how these parameters are supported by specific resources, see the chapter for the appropriate service.

53.6 Understanding Items Hypermedia

A collection of items makes up the actual content of responses. This is at the same level as the links section described previously. Each item (including the top-level tag in each response) has one common attribute (resourceType) in addition to resource-specific content and format. For details beyond the resourceType, see the chapter for the specific service.

See Example 53–13 for an example that describes a collection of entities/items. Example 53–15 describes a single entity/item.

53.7 Navigating Hypermedia Using HTTP

You can navigate REST service hypermedia in a similar way to that used to browse and interact with HTML or an ATOM feed. Interactions are performed on the resources identified by links using HTTP methods. The REST services return response codes and response bodies to the client, and the client uses the hypermedia in the response to drive further interactions.

Table 53–2 describes the general pattern followed when constructing opaque resource URIs. The resourceType differentiates whether the HTTP method operates on a collection of resources or an individual resource.

Table 53–2 HTTP Methods

HTTP Method	Response for a Collection of Resources	Response for an Individual Resource
`GET`	Returns resource collection container (200 HTTP response code)	Returns resource (200 HTTP response code)
`PUT`	Cannot update a collection of resources (405 HTTP response code)	Updates and returns resource (200 HTTP response code)
`POST`	Creates and returns a new resource within the collection. **Note:** Can return a 201 or 204 HTTP response code. The returned code depends on whether the newly created object is directly addressable or not. For instance, activities cannot be addressed individually, so they return a 204 no-content response code.	Cannot create a resource within an individual resource (405 HTTP response code)
`DELETE`	Cannot delete a collection of resources (405 HTTP response code)	Deletes resource (204 HTTP response code)

Collection resources generally support reading a collection (GET) and creating a subordinate to that collection (POST). Individual resources generally support reading a resource (GET), updating a resource (PUT), and deleting a resource (DELETE).

HTTP Response Status Codes

Table 53–3 describes the potential response status codes.

Table 53–3 HTTP Response Status Codes

HTTP Response Status Code	Description
200	OK. Upon successful completion of a `GET` or `PUT`. This is accompanied by a resource representation as a response body.
201	Created. Upon successful completion of a `POST`. This has a location header to the newly-created resource.
204	No content, or any request that does not return content. For example, creating an object that cannot be linked. Upon successful completion of a `DELETE`.
400	Bad Request. The URI was malformed or could not be processed; for example, the IDs were not formatted correctly, or the ID was supplied in the URI on a `POST`.
401	Unauthorized. Client may retry by submitting credentials. This may be accompanied with a fault response body to help diagnose the issue.
403	Forbidden. Client does not have permission to perform a particular action, such as creating or deleting a resource. Re-authenticating as the same user does not help. This may be accompanied with a fault response body to help diagnose the issue.
404	Not Found. Referencing a specific resource with an ID, but that resource does not exist.
405	Method Not Allowed. This includes a list of valid methods for the requested resource.
406	Not Acceptable. The Accept header media type(s) sent by the client are not supported for the requested operation.This may be accompanied with a fault response body to help diagnose the issue.

Table 53–3 (Cont.) HTTP Response Status Codes

HTTP Response Status Code	Description
409	Conflict. Possibly the resource ID is in use, or an entity has been modified by another process during an update.This may be accompanied with a fault response body to help diagnose the issue.
422	Bad entity body, the data in the body, although syntactically correct, was not valid, or could not be processed; for example, invalid data when updating a row.
500	Internal server error. The server encountered an unexpected condition that prevented it from fulfilling the request.
501	Not Implemented. The server does not support the functionality required to fulfill the request. This is the appropriate response when the server does not recognize the request method and is not capable of supporting it for any resource.

53.8 Security Considerations for WebCenter Portal REST APIs

All of the WebCenter REST URIs reference protected resources (similar to protected web pages) and require authentication for access.

Note: The one exception to the authenticated access rule is access to the CMIS resources. CMIS resources can be accessed anonymously through the CMIS URI entry point:

```
http://host/port/rest/api/cmis/repository
```

See also Section 53.9, "Security Considerations for CMIS REST APIs."

You can pass this authentication in with the request using basic authentication, or you can configure the client and the WebCenter REST service to use single sign-on. For more information about single sign-on, see the "Configuring SSL" chapter in *Administering Oracle WebCenter Portal*.

Basic authentication sends the user's password in plain text. If you use this type of authentication, you should consider securing the connection using SSL. For more information, see the "Configuring SSL" chapter in *Administering Oracle WebCenter Portal*.

To provide additional security, every URI, for both `href` and `template` attributes, includes a security token parameter. The security token is user-scoped. This means that it is based on and scoped to an authenticated user and can be bookmarked or cached across that user's sessions. These security tokens help prevent Cross-Site Request Forgery (CSRF) attacks.

For example:

```
<link
  template="opaque-template-uri/@me?startIndex={startIndex}&itemsPerPage={itemsPerPage}
     &token=generated-token" resourceType="urn:oracle:webcenter:messageBoard"
     href="opaque-uri/@me?token=generated-token" capabilities="urn:oracle:webcenter:read"
/>
```

> **Note:** The security token is not used for authentication or identity propagation.

WebCenter Portal REST APIs operate under the identity of the authenticated user. For example, the portal REST APIs only return information for, and allow changes to, portals to which the user has access.

53.9 Security Considerations for CMIS REST APIs

The CMIS REST APIs do not use the same authentication scheme as the other WebCenter Portal REST APIs. Whereas other WebCenter Portal REST APIs do not allow unauthenticated access and prompt the user for authentication before allowing access, the CMIS REST APIs do allow unauthenticated access.

If a document requires authentication information and does not receive that information (because it is being accessed by an unauthenticated user), a 404 error is returned. This does not necessarily mean that the document cannot be found, rather that the (unauthenticated) user does not have the appropriate permissions to access the document. For the request to succeed, it should include basic authentication headers to identify the current user.

CMIS stands for Content Management Interoperability Services, a standard REST interface for Enterprise Content Management Systems. For more information, see Chapter 31, "Content Management REST API."

53.10 Understanding Common Types

This section describes the common types that are shared by multiple WebCenter Portal REST APIs.

- Section 53.10.1, "Common Types"
- Section 53.10.2, "Portable Contact Types"

53.10.1 Common Types

Common types provide a consistent way to reference objects used in the WebCenter Portal REST APIs.

This section includes the following subsections:

- Section 53.10.1.1, "personReference"
- Section 53.10.1.2, "groupSpaceReference"

53.10.1.1 personReference

This is a generic data type that represents a user in the system. It is used by several APIs, for example to identify the author of a message board or feedback message, or a user's manager or direct reports. It is made up of the following elements:

- `guid` - The GUID of the user
- `id` - The login ID of the user
- `displayName` - The display name of the user

The `personReference` also includes a link to the user's profile icon. You can control the size of the icon by providing values: `small`, `medium`, or `large`.

Depending on where the personReference type is included, it can also return links to the associated REST APIs of the generating response. For example, if the personReference type is included as the author in a message board response, it includes links to message board services.

53.10.1.2 groupSpaceReference

This is a generic data type that represents a portal. It is used by several APIs, for example in the activity stream, to identify a portal in which a particular activity occurred. It is made up on the following elements:

- guid - The GUID of the portal
- name - The name of the portal
- displayName - The display name of the portal

The groupSpaceReference also includes an html link, rest link, and icon link.

53.10.2 Portable Contact Types

Portable Contact types provide users with a standard way to access their address books and friends lists over the Web. Portable Contact types are used by the Profile component of the People Connections service.

> **Note:** These types are based on the Portal Contact Types in WebCenter. They may include additional data.

This section includes the following subsections:

- Section 53.10.2.1, "name Portable Contact Type"
- Section 53.10.2.2, "address Portable Contact Type"
- Section 53.10.2.3, "organization Portable Contact Type"
- Section 53.10.2.4, "value Portable Contact Type"

53.10.2.1 name Portable Contact Type

This is a portable contact type that provides information about the user's name. It is made up of the following elements:

- formatted - The formatted version of the full name of the user, for example, Michael David Jones Ph.D.
- familyName - The family name, or last name, of the user, for example Jones
- givenName - The given name, or first name, of the user, for example Michael
- honorificSuffix - The honorific suffix of the user, for example, Esq. or Ph.D.
- initials - The first initials of the user, for example, M. D.
- maidenName - The maiden name of the user

Some of the elements may not be present depending on the user repository configuration and data.

53.10.2.2 address Portable Contact Type

This is a portable contact type that provides information about the user's address. It is made up of the following elements:

- `formatted` - The formatted version of the full address
- `type` - The type of the address, for example, Home, Work
- `streetAddress` - The street address
- `poBox` - The post office box number
- `locality` - The city or locality
- `region` - The state or region
- `postalCode` - The zip code or postal code
- `country` - The country

Some of the elements may not be present depending on the user repository configuration and data.

53.10.2.3 organization Portable Contact Type

This is a portable contact type that provides information about the user's organizational affiliation. It is made up of:

- `name` - The name of the organization
- `employeeNumber` - The employee number of the user
- `employeeType` - The employee type of the user.
- `department` - The department within the organization to which the user belongs
- `defaultGroup` - The default group to which the user belongs
- `title` - The job title of the user within the organization
- `description` - A textual description of the user's role within the organization
- `expertise` - The expertise of the user within the organization
- `startDate` - The date when the user joined the organization

Some of the elements may not be present depending on the user repository configuration and data.

53.10.2.4 value Portable Contact Type

This is a generic object that contains data for a wide variety of contact information. It is made up of the following elements:

- `primary` - A boolean value that identifies whether this is the primary piece of information of this type for this person. The primary element may not be present and is only relevant if there are multiple values for the same type of data.
- `value` - The value for this type
- `type` - The type of information. Valid types are:
  - `standard`: with valid values of `work`, `home`, `other`
  - `phoneNumber`: with valid values of `work`, `home`, `fax`, `pager`, `mobile`
  - `photos`: with a valid value of `thumbnail`

53.11 Managing Caches

Client-side developers need to know how to handle HTTP cache headers in both requests and responses. Individual resources that have a "last modified" date are also return entity tags. The entity tags can be used to make retrieval of a specific entity more efficient. To learn more about the use of entity tags in caching, refer to the Hypertext Transfer Protocol specification:

http://www.w3.org/Protocols/

53.12 Configuring a Proxy Server

This section explains how to set up a simple, response-rewriting reverse HTTP proxy on an Apache server. A proxy server is typically employed to avoid cross-domain request problems associated with making XMLHttpRequest (XHR) calls from a browser client. These calls are typically associated with the Ajax development technique for creating rich, interactive client-side interfaces. REST APIs are typically used within this kind of client-side development scenario.

> **Note:** This section illustrates a simple example of setting up a proxy server on Apache. For more detailed information, refer to the Apache Server documentation available at http://httpd.apache.org/docs. You can also use Oracle HTTP Server (OHS) for your proxy server. For more information, see *Administrator's Guide for Oracle HTTP Server*.

The basic steps for setting up a proxy server on Apache are:

1. Obtain access to an Apache server. Oracle recommends Apache 2.2.7 or a later version.
2. Make sure the server has the `mod_substitute` and `mod_proxy` modules installed. Note that Apache versions 2.2.7 and later include `mod_substitute` by default. It is also possible to use `mod_sed` or `mod_line_edit`, however these configurations are not supported by Oracle.
3. Open the `httpd.conf` or the virtual host configuration file, and add the following lines, substituting your server name/information where appropriate:

```
ProxyRequests          Off
LoadModule             substitute_module      modules/mod_substitute.so
SetOutputFilter        SUBSTITUTE

ProxyPass              /rest/api/             http://myhost:8888/rest/api/
ProxyPassReverse       /rest/api/             http://myhost:8888/rest/api/
Substitute             s|myhost|yourhost|n

ProxyPass              /pathname/rest/api/       http://myhost:8888/rest/api/
ProxyPassReverse       /pathname/rest/api/       http://myhost:8888/rest/api/
Substitute             s|myhost:8888/rest/api|yourhost/pathname/rest/api|n
```

> **Note:** Two servers are being proxied in this example scenario. Note that the following two calls are actually talking to these two different servers, but they appear to clients to be the same server host:
>
> http://*myhost*/rest/api/resourceIndex
>
> http://*myhost*/*pathname*/rest/api/resourceIndex

4. Restart the Apache server. For example, on Linux, you could do this:

```
sudo /etc/init.d/httpd restart
```

Note that on some configurations of Linux, proxying with Apache in this fashion requires you tell selinux to allow outbound connections from httpd. You can accomplish this by enabling the `httpd_can_network_connect flag` in selinux's GUI or through the command line.

> **Developer Tip:** Set the `UserDir` permissions in `httpd.conf` to allow users to drop these files in their own `public_html` directory. For example, you might hit `http://host/~yourname/sample.html` to access your sample application, and then have the sample application make XHR calls to `http://host/rest/api/resourceIndex`.

53.13 WebCenter Portal's REST API Examples

This section includes some examples illustrating how to use the WebCenter Portal REST APIs. It includes the following subsections:

- Section 53.13.1, "Navigating the Message Board Hypermedia"
- Section 53.13.2, "Displaying Activity Stream Data"
- Section 53.13.3, "Updating User Status"

53.13.1 Navigating the Message Board Hypermedia

This section includes examples to illustrate how to navigate the REST service hypermedia. The examples show how to read messages on a message board, post messages to another user's message board, delete unwanted messages, and filter message board messages.

This section includes the following subsections:

- Section 53.13.1.1, "Accessing the Resource Index"
- Section 53.13.1.2, "Reading Messages"
- Section 53.13.1.3, "Creating a New Message"
- Section 53.13.1.4, "Updating a Message"
- Section 53.13.1.5, "Deleting a Message"
- Section 53.13.1.6, "Filtering Messages"

53.13.1.1 Accessing the Resource Index

The first step is always to access the Resource Index (Example 53–10).

Example 53–10 Accessing the Resource Index

```
GET /resourceIndex
```

This request returns a list of the top-level URI entry points to the RESTful services, including the entry point for the message board (Example 53–11).

Example 53–11 Response to Accessing the Resource Index

```
200 OK
Accept: application/json;charset=UTF-8

{
  "resourceType": "urn:oracle:webcenter:resourceindex",
  "links": [
    {
      "resourceType": "urn:oracle:webcenter:resourceindex",
      "capabilities": "urn:oracle:webcenter:read",
      "rel": "self",
      "href": "http://host:port/rest/api/resourceIndex"
    },
    {
      "resourceType": "urn:oracle:webcenter:messageBoard",
      "capabilities": "urn:oracle:webcenter:read",
      "href": "opaque-messageBoard-URI"
    },
  ...repeating for other services...
}
```

You can examine this list to find the URI that you require to access your message board. You should look for the link with a `resourceType` of `urn:oracle:webcenter:messageBoard`. The `href` for this link is the one that you require to access your message board.

For other resources `rel`, `type`, and `template` also help find the correct link.

53.13.1.2 Reading Messages

Once you have determined the correct URI for your message board, you can send a GET request to that URI to read your messages (Example 53–12).

To read messages on a message board, you must be logged in.

Example 53–12 Retrieving Messages from Your Message Board (GET)

```
GET /opaque-messageBoard-URI
```

The response provides information about all the messages on your message board (Example 53–13).

Example 53–13 Response to Retrieving Messages from Your Message Board

```
200 OK
Accept: application/json;charset=UTF-8

{
  "resourceType": "urn:oracle:webcenter:messageBoard",
  "links": [
    {
      "resourceType": "urn:oracle:webcenter:messageBoard",
      "capabilities": "urn:oracle:webcenter:read urn:oracle:webcenter:create",
      "rel": "self",
      "href": "opaque-messageBoard-URI"
    }
  ]
  "items": [
    {
      "resourceType": "urn:oracle:webcenter:messageBoard:message",
      "links": [
        {
          "resourceType": "urn:oracle:webcenter:messageBoard:message",
          "capabilities": "urn:oracle:webcenter:read urn:oracle:webcenter:delete",
          "rel": "self",
          "href": "opaque-message-URI"
        }
      ]
      "id": "89add57c-7a35-4d35-b24f-ea9259612eb8",
      "body": "What's up?  It's been a while.  Some of us are going to Conner
O'Neal's after work.  Want to go?",
      "created": "2009-09-10T11:18:46.696-0700",
      "author": {
        "id": "carl",
        "displayName": "carl",
        "guid": "649A27F09D5C11DEBFAA799CBD41D9B8",
        "links": [
          {
            "resourceType": "urn:oracle:webcenter:people:person",
            "capabilities": "urn:oracle:webcenter:read",
            "rel": "via",
            "href": "opaque-person-URI"
          },
          {
            "resourceType": "urn:oracle:webcenter:messageBoard",
            "capabilities": "urn:oracle:webcenter:read
urn:oracle:webcenter:create",
            "href": "opaque-messageBoard-URI-for-Carl"
          },
          {
            "type": "text/html",
            "resourceType": "urn:oracle:webcenter:spaces:profile",
            "capabilities": "urn:oracle:webcenter:read",
            "rel": "alternate",
            "href": "opaque-profile-URI"
          }
        ]
      },
    }
  ],
  "startIndex": 0,
  "itemsPerPage": 1,
}
```

From the response you can see that you have `read` and `create` capabilities on your message board. So you can read its contents and post new messages.

In addition, the response also includes a collection of items (in this case the collection consists of just a single item). These items, with a `resourceType` of `urn:oracle:webcenter:messageBoard:message`, are the messages on your message board. The `capabilities` attribute for the message indicates that, for this particular message, you can read it or delete it from your message board.

For each message, the response provides the following information:

- `id` - the identifier of the message
- `body` - the text of the message
- `author` - the author of the message. The author element is also made up of several other elements:
  - `id` - the identifier, or user name, of the author of the message
  - `displayName` - the name of the author, formatted for display
  - `guid` - the globally unique identifier of the author

Within the `author` element there is also a collection of three links. The `resourceType` of these links are:

- `urn:oracle:webcenter:people:person` - enables you to view information about the author of the message
- `urn:oracle:webcenter:messageBoard` - enables you to read or create a message on the author's message board
- `urn:oracle:webcenter:spaces:profile` - enables you to read a `text/html` document of the author's profile

53.13.1.3 Creating a New Message

Now that you have read the message on your message board, you probably want to reply to Carl on his message board. To do this you should send a `POST` request to the URI for Carl's message board.

To find the correct URI, use the `href` from the `author` link with `resourceType` of `urn:oracle:webcenter:messageBoard`.

A `POST` request creates a subordinate resource of the resource to which you post it. In this case, we are posting to the `messageBoard`, so we should post its subordinate resource: `message` (Example 53–14).

Example 53–14 Creating a Message on Another User's Message Board (POST)

```
POST opaque-messageBoard-URI-for-Carl
Accept: application/json;charset=UTF-8
Content-Type: application/json;charset=UTF-8

{
    "body": "sure; see you guys at 6."
}
```

The response shows that your message was successfully created on Carl's message board (Example 53–15).

Example 53–15 Response to Creating a Message on Another User's Message Board

```
201 Created
Content-Type: application/json;charset=UTF-8

{
  "id": "36b8464f-afda-44b5-90ad-8ecedcb040a3",
  "body": "sure; see you guys at 6.",
  "created": "2009-09-10T12:21:09.785-0700",
  "resourceType": "urn:oracle:webcenter:messageBoard:message",
  "links": [
    {
      "resourceType": "urn:oracle:webcenter:messageBoard:message",
      "capabilities": "urn:oracle:webcenter:read urn:oracle:webcenter:update
urn:oracle:webcenter:delete",
      "rel": "self",
      "href": "opaque-message-URI"
    },
  "author": {
    "id": "mike",
    "displayName": "mike",
    "guid": "649657609D5C11DEBFAA799CBD41D9B8",
    "links": [
      {
        "resourceType": "urn:oracle:webcenter:people:person",
        "capabilities": "urn:oracle:webcenter:read",
        "rel": "self",
        "href": "opaque-person-URI"
      },
      {
        "resourceType": "urn:oracle:webcenter:messageBoard",
        "capabilities": "urn:oracle:webcenter:read urn:oracle:webcenter:create",
        "href": "opaque-messageBoard-URI"
      },
      {
        "type": "text/html",
        "resourceType": "urn:oracle:webcenter:spaces:profile",
        "capabilities": "urn:oracle:webcenter:read",
        "rel": "alternate",
        "href": "opaque:profile:URI"
      }
    ]
  }
  ]
}
```

53.13.1.4 Updating a Message

A PUT request is very similar to a POST request, except that it is performed on the resource being edited, instead of on the parent resource.

From the response to your earlier POST request, when you created your message on Carl's message board, you can see that you have read, update, and delete capabilities on the message. You can also see that the href provides the URI for your message. Something came up at work and you must stay a bit later. Using the URI for your message, you can now send a PUT request to update the message and let Carl know that you are going to be late (Example 53–16).

Example 53–16 Updating a Message (PUT)

```
PUT opaque:message:URI
Accept: application/json;charset=UTF-8
Content-Type: application/json;charset=UTF-8

{
    "body": "working late; see you guys at 7."
}
```

The response is nearly identical to that of POST, except that the body contains your updated message (Example 53–17).

Example 53–17 Updating a Message

```
200 OK
Content-Type: application/json;charset=UTF-8

{
  "id": "36b8464f-afda-44b5-90ad-8ecedcb040a3",
  "body": "working late; see you guys at 7.",

...deleted for brevity...

}
```

53.13.1.5 Deleting a Message

Performing a `DELETE` request on a resource deletes it, if you have the `delete` capability on the resource. The link to your message on Carl's message board supports `delete`.

You decide to delete the message that you left on Carl's message board (Example 53–18).

Example 53–18 Deleting a Message (DELETE)

```
DELETE opaque:message:URI
```

The response is simply a status code of 204 (Example 53–19).

Example 53–19 Response to Deleting a Message

```
204 NO CONTENT
```

Note: `DELETE` is idempotent, meaning that it can be sent multiple times with the same result. Therefore if you try to delete the same object twice, you still receive the same 204 response even though it has previously been deleted.

53.13.1.6 Filtering Messages

Messages can be filtered (using the HTTP verbs GET, POST, and PUT) based on visibility criteria. Messages posted on message boards falls into the following visibility categories:

- Public
- Private
- Hidden
- Public and hidden
- Private and hidden

Public vs Private Messages

The owner of a message board can mark any message as private. When a message is marked as private, that message is not visible to anyone other than the owner of the message. By default, all messages are public.

Messages can also be sent as private messages. If Mike, for example, is viewing Carl's message board, only public messages (including those sent or received as private) will be visible to user Mike.

Hidden vs Non-hidden Messages

The owner of a message board can mark any message as hidden. When a message is marked as hidden, that message will not be visible to the message board's owner, but will remain visible to anyone else viewing that person's message board.

The following examples show how to retrieve,

Example 53–20 Retrieving Filtered Messages (GET)

- me

```
all
  rest/api/messageBoards/person/@me
```

```
private
  rest/api/messageBoards/person/@me/private
public
  rest/api/messageBoards/person/@me/public
hidden and public
  rest/api/messageBoards/person/@me/hidden
private and hidden
  rest/api/messageBoards/person/@me/private_hidden
```

- person

  ```
  rest/api/messageBoards/person/<GUID>
  ```

  Note that the GUID of the logged in user for whom to retrieve messages is required.

- space-guid

  ```
  rest/api/messageBoards/space/<GUID>
  ```

  Note that visibility-based filtering is not available for `space-guid`.

Example 53–21 Using Filtering for New Messages (POST)

- me

  ```
  all
    rest/api/messageBoards/person/@me
  private
    {"body" : "<BODY_CONTENT>","visibilityType" : "private"}
  public
    {"body" : "<BODY_CONTENT>","visibilityType" : "public"}
  hidden and public
   {"body" : "<BODY_CONTENT>","visibilityType" : "hidden"}
  private and hidden
    {"body" : "<BODY_CONTENT>","visibilityType" : "private_hidden"}
  ```

- person

  ```
  rest/api/messageBoards/person/<GUID>
  ```

  For a GUID other than that of "me":

  ```
  public
    {"body" : "<BODY_CONTENT>","visibilityType" : "public"}
  private
    {"body" : "<BODY_CONTENT>","visibilityType" : "private"}
  ```

- space-guid

  ```
  rest/api/messageBoards/space/<GUID>
  ```

  Note that visibility-based filtering is not available for `space-guid`.

Example 53–22 Using Filtering for Modified Messages (PUT)

- me

  ```
  all
    rest/api/messageBoards/person/@me/messages/<msg guid>
  private
    {"body" : "<BODY_CONTENT>","visibilityType" : "private"}
  public
  ```

```
  {"body" : "<BODY_CONTENT>","visibilityType" : "public"}
hidden and public
 {"body" : "<BODY_CONTENT>","visibilityType" : "hidden"}
private and hidden
  {"body" : "<BODY_CONTENT>","visibilityType" : "private_hidden"}
```

- person

  ```
  rest/api/messageBoards/person/<GUID>/messages/<msg guid>
  ```

  For a GUID other than that of "me":

  ```
  public
    {"body" : "<BODY_CONTENT>","visibilityType" : "public"}
  private
    {"body" : "<BODY_CONTENT>","visibilityType" : "private"}
  ```

- space-guid

  ```
  rest/api/messageBoards/space/<GUID>/messages/<msg guid>
  ```

  Note that visibility-based filtering is not available for `space-guid`.

53.13.2 Displaying Activity Stream Data

To properly display Activity Stream data, you must:

- Retrieve the Activity Stream URI entry point
- Retrieve the Activity Stream data
- Process the Activity Stream data for display

More On OTN

This sample is available on the Oracle WebCenter Portal Demonstrations and Samples page on the Oracle Technology Network (OTN) at:

`http://www.oracle.com/technetwork/middleware/webcenter/ps3-samples-176806.html`

In Example 53–23:

- The `getResourceURL` method shows you how to retrieve the URI entry point for the Activity Stream service by retrieving the JSON data for the main Resource Index (`/rest/api/resourceIndex`) and locating the URI for the Activity Stream resource in that data.
- The `formatMessage` method processes the Activity Stream data into a displayable format. This involves locating an individual message and replacing any template parameters in the message with the name of the object or user that corresponds to that parameter. The parameters also include links to display the object or user. They may contain links to REST services for those objects or users, if available.

> **Note:** To get the Resource Index and Activity Stream JSON data, make Ajax requests using Javascript (and possibly a client-side scripting library like Dojo) and pass the resulting data into the appropriate methods.

Example 53–23 Displaying Activity Stream Data

```
/* Parse the resourceIndex to find the specified URL and
 * return it.
 *
```

```
 * @Param jsonData the JSON data retrieved from calling
 *        the /rest/api/resourceIndex URL.
 * @Param strResourceType the resource type of the URL
 *        you want to retrieve from the resourceIndex data.
 *        E.g., 'urn:oracle:webcenter:activities:stream'
 */
function getResourceURL(jsonData, strResourceType)
{
  // Using the HATEOAS model, we browse the returned links
  // looking for the one with the correct resource type.

  for (var i = 0; i < data.links.length; i++) {
    if (data.links[i].resourceType == strResourceType) {
      return data.links[i].href;
    }
  }
}


/* Parse the resourceIndex to find the activity stream URL and
 * then load it.
 *
 * @Param jsonData the JSON data retrieved from calling
 *        the /rest/api/resourceIndex URL.
 */
function getActivitiesURL(jsonData)
{
  // Parse the JSON data to get the activities URI entry point.

  var strHref = getResourceURL(jsonData,
    'urn:oracle:webcenter:activities:stream');

  // INSERT CODE HERE: Implement getting the JSON data from the
  // strHref URL with the Accept header set to "application/json",
  // and use the formatMessage(index, jsonData) function to get
  // the displayable activity message for each activity.

}


/* Replace activity message parameters.
 *
 * @Param index the index of the activity to process
 * @Param jsonData the JSON data retrieved from calling
 *        the /rest/api/resourceIndex URL.
 */
function formatMessage(index, jsonData)
{
  var activity = jsonData.items[index];
  var strMessage = activity.message;

  // Look for activity parameters and replace them in the message.

  if (activity.templateParams && activity.templateParams.items) {
    for (var i = 0; i < activity.templateParams.items.length; i++) {
      var param = activity.templateParams.items[i];

      // Each parameter also has a set of links which at least
      // includes an HTML link and possibly a REST API link.
      strMessage = strMessage.replace(param.key, param.displayName);
    }
  }
  if (activity.detail) {
    strMessage = strMessage + "<br><font size='1'>" +
      activity.detail + "</font>";
  }
  return strMessage;
}
```

53.13.3 Updating User Status

The following example shows how to use REST APIs to update a user's WebCenter Portal profile status.

> **Note:** You must host the sample on a web server (for example, Apache or Oracle HTTP Server) or an application server. To avoid cross site scripting errors, you should proxy URL access to the REST service. On Apache or OHS, the conf commands would look like (change *myspaceshost* and *port* accordingly):
>
> ```
> ProxyPass /webcenter/ http://myspaceshost:port/webcenter/
> ProxyPassReverse /webcenter/ http://myspaceshost:port/webcenter/
> ProxyPass /rest/ http://myspaceshost:port/rest/
> ProxyPassReverse /rest/ http://myspaceshost:port/rest/
> ProxyPreserveHost on
> ```

More On OTN

This sample is available on the Oracle WebCenter Portal Demonstrations and Samples page on the Oracle Technology Network (OTN) at:

http://www.oracle.com/technetwork/middleware/webcenter/ps3-samples-176806.html

Updating user status involves making a sequence of asynchronous AJAX calls to get the URL for the status object:

```
urn:oracle:webcenter:resourceindex
   urn:oracle:webcenter:people
      urn:oracle:webcenter:people:person:status
```

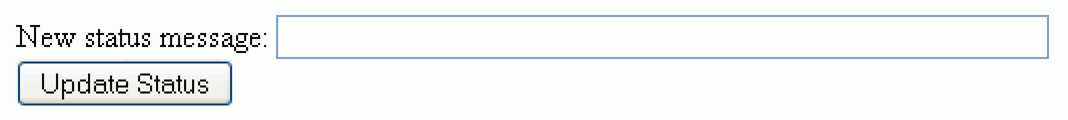
The HTML page for updating user status (Example 53–24) includes an input field where users can enter the new status message (`statusMessage`). Clicking the **Update Status** button (or pressing Enter) calls the `updateStatus` method to make the initial call to the Resource Index.

Example 53–24 HTML Body

```
<body>
<div>New status message:&nbsp;<input id="statusMessage" type="text"
   onkeyup="{if (event.keyCode==13) updateStatus();}" maxlength="250"
   size="60" /></div>
<div>
<button id="button1" onclick="updateStatus();">Update Status</button>
</div>
<div id="statusResults"></div>
</body>
```

Figure 53–1 shows the HTML page.

Figure 53–1 New Status Message HTML Page



The code in Example 53–25 retrieves the Resource Index (`resourceIndexURL` variable set to `/rest/api/resourceIndex`). The Resource Index is returned as an AJAX request object (`resourceIndexRequest`).

Example 53–25 Retrieving the Resource Index

```
function updateStatus() {
   // Set the UI to busy state. This is cleared in the success and error callbacks
   setUIBusy("Updating status...");
   //get the Resource Index
   resourceIndexRequest.get(
      resourceIndexURL,
      resourceIndexCallback,
      clearUIBusy);
}
```

The `getResourceURL` method shown in Example 53–26 traverses the links in the data returned by a REST call to find a specified string (URN) that identifies the required resource type.

Example 53–26 Traversing the Links

```
function getResourceURL(data, strResourceType) {
   for (var i = 0; i < data.links.length; i++) {
      if (data.links[i].resourceType == strResourceType) {
         return data.links[i].href;
      }
   }
   return null;
}
```

Example 53–27 uses `getResourceURL` to parse the Resource Index to find the user profile URL. The data is returned as an AJAX request object (`profileRequest`).

Example 53–27 Retrieving the User Profile

```
function resourceIndexCallback(data) {
   //get my user profile
   profileRequest.get(
      getResourceURL(data, 'urn:oracle:webcenter:people'),
      profileCallback,
      clearUIBusy);
}
```

Example 53–28 takes the new status message provided by the user in the HTML page (`statusMessage`) and uses `request.put` to update the status object (retrieved by again calling `getResourceURL`).

Example 53–28 Retrieving the Status Object

```
function profileCallback(data) {
   profile = data;
   // get the URL for the status object
   var url = getResourceURL(data, 'urn:oracle:webcenter:people:person:status');
   // get the new status and escape double quotes
   var newStatus = document.getElementById
      ('statusMessage').value.replace(/\"/g. "\\\"");
   //send a JSON string representing the new status object
   var statusMessage = '{"note": "' + newStatus + '"}';
   statusRequest.put(
      getResourceURL(data, 'urn:oracle:webcenter:people:person:status'),
         statusMessage, renderStatusPutResults, clearUIBusy);
}
```

The `renderStatusPutResults` method, shown in Example 53–29, renders the new status object.

Example 53–29 Rendering the New Status Object

```
function renderStatusPutResults(data) {
   var name = profile.displayName;
   // get the URL for my profile HTML page in WebCenter Portal
   var profileURL = getResourceURL(profile,
      'urn:oracle:webcenter:spaces:profile');
   var html = 'Status for <a href="' + profileURL + '" target="_blank">'
      + name + '</a> is: ' + data.note;
   // clear the UI busy state and print the new status message
   clearUIBusy(html);
}
```

Example 53–30 shows the code for disabling and reenabling the UI.

Example 53–30 Disabling the UI

```
function setUIBusy(message) {
   document.getElementById('statusResults').innerHTML = message;
   document.getElementById('button1').disabled = true;
   document.getElementById('statusMessage').disabled = true;
}

function clearUIBusy(message) {
   document.getElementById('statusResults').innerHTML = message;
   document.getElementById('button1').disabled = false;
   document.getElementById('statusMessage').disabled = false;
}
```

Example 53–31 shows the library that assists in AJAX calls. Most of this is not WebCenter specific and works for any XHR requests to a service that returns JSON.

The library includes a reusable XHR object. This object supports HTTP GET, POST, PUT, and DELETE. All functions are asynchronous and take a URL and two callback functions, one for success, and one for failure. Success calls are made with a JavaScript object containing the return data. Failure calls are made with an error string. POST and PUT also take a data argument which must be a JSON string.

Example 53–31 AJAX Library

```
function AjaxRequest() {
   // constructor to create an object oriented AJAX request
   var xhr = null;

   // get XHR object. Should work for IE 6+, Safari, and Mozilla based browsers
   if (window.XMLHttpRequest) {
```

```
   xhr = new window.XMLHTTPRequest;
} else {
   try {
      xhr = new ActiveXObject('MSXML2.XMLHTTP.3.0');
   } catch (ex) {
      xhr = null;
   }
}
if (xhr == null) {
   alert("Your browser does not support AJAX");
}

this.get = function(url, callback, errorCallback) {
   xhr.open('GET', url, true);
   // the REST APIs return XML by default. Please return JSON
   xhr.setRequestHeader('Accept', 'application/json; charset=utf-8');
   sendRequest(null, callback, errorCallback);
};

this.post = function(url, data, callback, errorCallback) {
   xhr.open('POST', url, true);
   // set headers to send and receive JSON
   xhr.setRequestHeader('Accept', 'application/json; charset=utf-8');
   xhr.setRequestHeader('Content-Type', 'application/json; charset=utf-8');
   sendRequest(data, callback, errorCallback);
};

this.put = function(url, data, callback, errorCallback) {
   xhr.open('PUT', url, true);
   // set headesr to send and receive JSON
   xhr.setRequestHeader('Accept', 'application/json; charset=utf-8');
   xhr.setRequestHeader('Content-Type', 'application/json; charset=utf-8');
   sendRequest(data, callback, errorCallback);
};

this.deleteResource = function(url, callback, errorCallback) {
   xhr.open('DELETE', url, true);
   sendRequest(null, callback, errorCallback);
};

// set the callbacks and send the request with data, if any
function sendRequest(data, callback, errorCallback) {
   xhr.onreadystatechange = function () {
      processResponse(xhr, callback, errorCallback);
   };
   xhr.send(data);
}

function processResponse(xhr, callback, errorCallback) {
   var data = null;
   // can get called here many times. 4 means really done
   if (xhr.readyState == 4) {
      // let's call any HTTP codes in the 200s success
      if (xhr.status >= 200 && xhr.status <300) {
         // convert response text into a JSON object. This is insecure.
         // data should not be blindly evaluated from the server return.
         // consider using json2.js http://www.JSON.org/js.html
         data = eval('(' + xhr.responseText + ')');
         callback(data);
      } else {
```

```
                // we got an error. Format an error string
                data = 'Error: ' + xhr.status + ' ' + xhr.statusText + '<br />'
                   + xhr.responseText;
                errorCallback(data);
             }
          }
       }
    }
```

54

Integrating Other Oracle Applications

This chapter describes how you can integrate other Oracle applications with your WebCenter Portal or Portal Framework application.

This chapter contains the following topics:

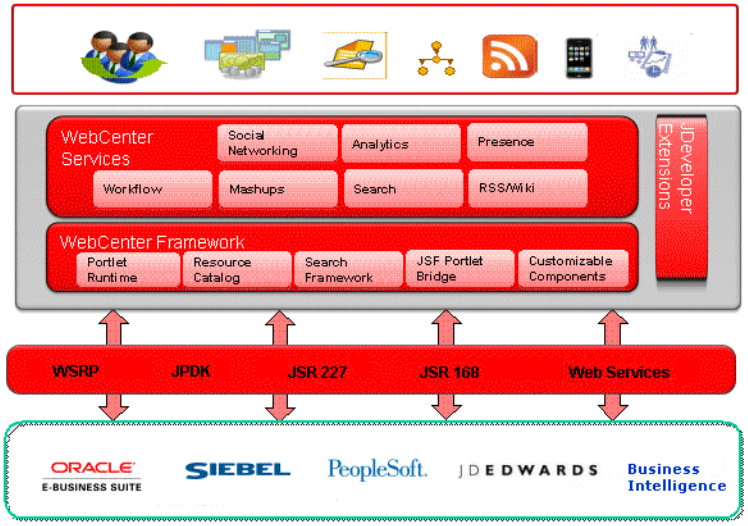
- Section 54.1, "Integrating Other Oracle Applications in WebCenter Portal"
- Section 54.2, "Integrating Siebel Applications"
- Section 54.3, "Integrating E-Business Suite Applications"
- Section 54.4, "Integrating JD Edwards Applications"
- Section 54.5, "Integrating PeopleSoft Applications"
- Section 54.6, "Integrating Oracle Business Intelligence Presentation Services"

54.1 Integrating Other Oracle Applications in WebCenter Portal

Oracle WebCenter Portal is an integrated suite of technology designed to deliver a unified, context-aware user experience. WebCenter Portal integrates structured and unstructured content, business intelligence, business processes, communication, and collaboration services, and removes the boundaries between enterprise applications. By integrating other applications available within the enterprise with WebCenter Portal, you can create context-centric, composite applications that leverage the capabilities of these applications, extending WebCenter Portal and changing the way people work.

WebCenter Portal uses industry-standard technologies to integrate (primarily as WSRP and JPDK portlets) other application components. Figure 54–1 shows the technologies involved in WebCenter Portal integration with other Oracle applications.

Figure 54–1 WebCenter Portal Integration



Although not all applications support the same integration mechanisms, the integration process is generally quite simple, consisting of exposing the application object to be integrated as a portlet, registering the portlet with WebCenter Portal, adding the portlet to a page, and then running and testing the results.

In Figure 54–1 we show the applications that can be integrated as Siebel, E-Business Suite, JD Edwards, PeopleSoft, and Oracle Business Intelligence. These Oracle applications are fully supported and documented within this chapter. However, you can integrate virtually any application that can expose objects as WSRP or JPDK portlets. The process for integrating them is the same as for the Oracle applications documented here: expose the object as a portlet, register the portlet in WebCenter Portal, and add the portlet to a page. Refer to the documentation for one of the supported Oracle applications for a description of how to consume an exposed portlet in WebCenter Portal.

54.2 Integrating Siebel Applications

This section describes how to integrate a Siebel Web service in a Portal Framework application. It also describes how to integrate Siebel objects using the Siebel Web Engine (SWE). Siebel and WebCenter can work together to include Siebel's CRM capabilities as portlets within your Portal Framework application. You can integrate Siebel applications as Web services, or using the Siebel Web Engine (SWE) as described in the following subsections:

- Section 54.2.1, "Integrating Siebel Applications as Web Services"
- Section 54.2.2, "Integrating Siebel Applications Using the Siebel Web Engine"

54.2.1 Integrating Siebel Applications as Web Services

This section describes how to integrate Siebel applications as Web services in a portal or Portal Framework application.

This section contains the following subsections:

- Section 54.2.1.1, "Preparing the Siebel Application"
- Section 54.2.1.2, "Consuming a Siebel Web Service in a Framework Application"
- Section 54.2.1.3, "Consuming a Siebel Web Service Data Control in a Portal"

54.2.1.1 Preparing the Siebel Application

This section describes how to create an inbound Web service, set up operations for the inbound service, and generate a WSDL that you will later use to create a data control to your portal or Framework application.

This section contains the following subsections:

- Section 54.2.1.1.1, "Creating an Inbound Web Service"
- Section 54.2.1.1.2, "Creating Operations for the Inbound Web Service"

54.2.1.1.1 Creating an Inbound Web Service

To create an inbound Web service:

1. Log into the Siebel application as an administrator.
2. Navigate to the Administration - Web Services page.
3. Click **Inbound Web Services**.

   The Inbound Web Services page shows the out-of-the-box Web services and any other Web services that are currently exposed.
4. Click **Menu** and select `New Record` from the drop-down list.
5. Enter the values for **Namespace**, **Name**, **Status** and **Comment** as appropriate for the Web service you want to set up. For example:

Field Name	Value
Namespace	`http://xmlns.oracle.com`
Name	`Siebel Customer Account`
Status	`Active`
Comment	`For Fusion Middleware`

6. Scroll to the Service Ports pane and select **New Record** from the **Menu** drop-down list.
7. Enter `CustAccount` as the **Name** and click **Type**.
8. In the **Inbound Web Service Port Type** pick applet, open the New tab.
9. Select `Business Service` as the **Implementation Type**.
10. From the **Service Name** list, select `Siebel Account`.
11. In the **Inbound Web Service Port Type** pick applet, click **OK** to create the inbound Web service.
12. From the Service Ports dialog's **Transport** drop-down list, select `HTTP`.
13. In the **Address** field, set the URL to your Siebel instance. For example:

```
http://xmlns.oracle.com/eai_
enu/start.swe?SWEExtSource=WebService&SWEExtCmd=Execute&UserName=SADMIN&Passwor
```

```
d=SADMIN
```

14. From the **Menu** drop-down list, select `Save Record`.

54.2.1.1.2 Creating Operations for the Inbound Web Service

After creating the inbound Web service (see Section 54.2.1.1.1, "Creating an Inbound Web Service"), continue by adding operations to the inbound Web service and then create a WSDL file, follow these steps:

1. Scroll to the Operations section and select `New` from the **Menu** drop-down list.
2. In the **Operation Name** field, enter `AccountInsert`.
3. Click **Method Display Name** to open the Business Service Method dialog.
4. Select `Insert` as the **Method**, and click **OK**.
5. From the **Authentication Type** drop-down list, select an appropriate authentication type:

Authentication Type	Session Type	Description
None	None	A single request is sent with an anonymous user login, and the session is closed after the response is sent out. In order for the anonymous session to be identified by the SWSE Plug-in, UsernameToken and PasswordText must be excluded in the SOAP headers.
Username and password	None	A single request is sent with the username and password used to log in, and the session is closed after the response is sent out.
Username and password	Stateless	The initial request to log in establishes a session that is to remain open and available for subsequent requests. Username/password are used to log in and a session token is returned in a SOAP header included in the outbound response. The session remains open.
Session token (stateless)	Stateless	Request to reconnect to an established session, using the information contained in the session token. If the session has been closed, automatic re-login occurs. The Siebel servers include the session token in the SOAP header of the response. The session remains open.
Session token (stateless)	None	When a SOAP header carries a session token and has the session type set to None, then the Session Manager on the SWSE closes (logs out) of this session, and invalidates the session token. The session token is not used after the session is invalidated.

6. Click **New** to create a new operation.
7. In the **Operation Name** field, enter a name for the new operation (for example, `AccountQueryByExample`).
8. Click **Method Display Name** for the new operation.
9. In the Business Service Method dialog, select the query method (for example, **Query By Example**) and click **OK**.
10. Continue by adding any additional operations you may need as described in steps 6 to 9 above.
11. In the Service Ports pane, select `Save Record` from the **Menu** drop-down list.

12. In the Inbound Web Services pane, select `Save Record` from the **Menu** drop-down list.
13. Select `Clear Cache` from the **Menu** drop-down list.
14. Click the **Generate WSDL**.
15. On the File Download dialog, click **Open**.
16. Select **File --> Save As...**
17. Locate the directory where you want to save the WSDL file, enter a name for the file and click **Save**.

54.2.1.2 Consuming a Siebel Web Service in a Framework Application

This section describes how to consume Siebel applications that have been set up as Web services in a Portal Framework application, including how to set up a WSDL-based data control and, how to use JDeveloper's JSF Navigation Modeler to diagrammatically create your application's pages and the navigation between them.

This section contains the following subsections:

- Section 54.2.1.2.1, "Creating a Data Control Based on a Siebel Web Service"
- Section 54.2.1.2.2, "Creating a Page Flow Diagram"
- Section 54.2.1.2.3, "Adding Pages and Navigation to the Page Flow Diagram"
- Section 54.2.1.2.4, "Creating the Query Page"
- Section 54.2.1.2.5, "Creating the Results Page"
- Section 54.2.1.2.6, "Testing the Application"

54.2.1.2.1 Creating a Data Control Based on a Siebel Web Service

This section describes how to create a WSDL-based data control based on a Web service created from a Siebel application.

To create a WSDL-based data control:

1. Open your Portal Framework application or create a new Portal Framework application in JDeveloper.
2. In the Applications Navigator, right-click the `Model` node and select **New** from the context menu.
3. In the New Gallery, select `All Technologies` from the **Filter By** drop-down list.
4. Select `Business Tier | Web Services` as the category, select the `Web Service Data Control` item, and click **OK**.
5. In the Create Web Service Data Control wizard, click **Next** to leave the Welcome page.
6. In Step 1, enter the Web service name in the **Name** field.
7. Click **Browse** for the **URL** field, locate the directory where you downloaded the WSDL file, select the file and click **Open**.

   In the wizard, note the URL generated in the **Service** field.
8. Click **Next**.

   Step 2 shows all the operations available from the selected Web service.

9. Using the **Add** button, shuttle the operations you want to the Selected pane, and then click **Next**.

   When you expand the `Model` node in the Applications Navigator, you should see nodes for the entries that you have created.

10. Click the **Save All** icon to save your changes.

54.2.1.2.2 Creating a Page Flow Diagram

This section describes how to create the page flow diagram to which you can your add source and query pages.

To create a page flow diagram:

1. In the Applications Navigator, right-click the `ViewController` node and select **New** from the context menu.
2. In the New Gallery, expand the `Web Tier` node and select **JSF**.
3. In the Items pane, select **JSF Page Flow & Configuration (faces-config.xml)** and click **OK**.
4. In the Create JSF Configuration File dialog, click **OK** to accept default values.

   An empty page flow diagram opens with a Component Palette and Data Control Palette to the right of the diagram editor. You use this to create components for the JSF Navigation Model.

5. Click the **Save All** icon to save your changes.

54.2.1.2.3 Adding Pages and Navigation to the Page Flow Diagram

This section describes how to add pages and navigation to the page flow diagram.

To add pages to the page flow diagram:

1. In the JSF Navigation Diagram Component Palette, create a source page by selecting **JSF Page**, clicking the diagram and naming the page appropriately (for example, `QueryByID`). Typically, you will have at least a source and query page.
2. To create the query page, click and drag another JSF Page from the Component Palette and drop it next to the previous one, renaming it appropriately (for example, `ShowResult`).
3. Select **JSF Navigation Case** in the JSF Navigation Diagram Component Palette. Click the icon for the source JSF page, and then click the icon for the destination JSF page for the navigation case.
4. Modify the default label (`success`) by clicking it and entering an appropriate name (for example, `toResult`).
5. Open the Overview tab and click **Navigation Rules**.

   The rule you just created in the diagram should be listed in the table.

   JDeveloper gives you three views of the `faces-config.xml` file: The same information that is presented in the diagram is also accessible through a declarative dialog and directly from the source. If you open the source view (by clicking the Source tab) the `<from-view-id>` tag identifies the source page, and the `<to-view-id>` tag identifies the destination page.

6. From the diagram view, select **JSF Navigation Case** in the Component Palette. Click the icon for the source JSF page, and then click the icon for the destination JSF page for the navigation case.

7. Modify the default label by clicking it and entering an appropriate name (for example, `toQuery`).
8. Click the **Save All** icon to save the diagram.

54.2.1.2.4 Creating the Query Page

This section describes how to create and set up navigation for the query page.

To create the query page:

1. On the Page Flow diagram, double-click the source page icon (`QueryById`) to launch the Create JSF JSP Wizard.
2. Click **Next** to leave the Welcome page.
3. In Step 1 of the wizard, select **JSP Document (*.jspx)** and click **Next**.
4. In Step 2, make sure **Do Not Automatically Expose UI Components in a Managed Bean** is selected and click **Next**.
5. In Step 3, make sure the following libraries are selected:

   ```
   ADF Faces Components 10_1_3_2_0
   ADF Faces HTML 10_1_3_2_0
   JSF Core 1.0
   Cusomizable Components Core 10_1_3_2_0
   ```

6. Click **Finish** to create the page.

   An empty JSF page opens in the Design tab of the editor.

7. In the Customizable Components Core component palette, click **ShowDetailFrame**.

   The ShowDetailFrame appears in the page.

   > **Note:** WebCenter Portal provides two customizable components: `PanelCustomizable` and `ShowDetailFrame`. These two components make it very easy to organize the content of your Web application, treating different panels as if they are almost stand-alone, portlet-like objects that can be minimized, rearranged, have their own drop-down menus, and so on.

8. With the ShowDetailFrame selected, modify the Text property in the Properties Inspector to Query By ID. Press **[Enter]** to update the page in the Visual Editor.
9. Open the Data Control palette and expand the Siebel Web services node. Drag and drop the `AccountQueryById(String)` node onto the ShowDetailFrame on the page.
10. In the popup menu, select **Create | Parameters | ADF Parameter Form**.
11. In the Edit Form Fields, click **OK**.
12. Select the AccountQueryById button generated in the page and in the Property Inspector pane, change the following properties:

    ```
    Text   Submit
    Action toResult
    ```

13. Select the input field corresponding to the input value, and in the Property Inspector, change the **Label** property to `Account ID:`
14. Click the **Save All** icon to save your work.

54.2.1.2.5 Creating the Results Page

This section describes how to create and add navigation for the results page.

To create the results page:

1. Click the faces-config.xml tab to return to the Page Flow diagram and double-click the **ShowResult** icon to launch the page wizard.
2. Click **Next** to skip the Welcome page.
3. In Step 1 of the wizard, select J**SP Document (*.jspx)** and click **Next**.
4. In Step 2, make sure **Do Not Automatically Expose UI Components in a Managed Bean** is selected and click **Next**.
5. In Step 3, make sure the following libraries are selected:

   ```
   ADF Faces Components 10_1_3_2_0
   ADF Faces HTML 10_1_3_2_0
   JSF Core 1.0
   ```

6. Click **Finish** to create the page.

   An empty JSF page opens in the Design tab of the editor.
7. In the Customizable Components Core component palette, click **ShowDetailFrame**.

   The ShowDetailFrame appears in the page.
8. With the ShowDetailFrame selected, modify the Text property in the Properties Inspector to Query Results. Press **[Enter]** to update the page in the Visual Editor.
9. In the Data Control palette, expand **AccountQueryById | Return | SiebelMessage | ListofAccountInterface**, select the Account node and drop it on the page on the ShowDetailFrame.
10. In the popup menu, select **Create | Forms | ADF Read-only Form**.
11. In the Edit Form Fields, delete all fields except for the following:

    ```
    AccountID
    AccountStatus
    NumberOfEmployees
    CurrencyCode
    Location
    MainPhoneNumber
    Name
    Type
    ```

12. Check the **Include Submit Button** checkbox and click **OK**.
13. In the Action Binding Editor, click **OK**.
14. Click **Submit** and in the Property Inspector change the title to `Back to Query`, and in the **Action** field select `toQuery` from the list.
15. Click the **Save All** icon to save your work.

54.2.1.2.6 Testing the Application

This section describes how to test the application's JSF pages in JDeveloper. Before you can query a Siebel Account using an ID, you need to determine the IDs that are available in your Siebel instance. To perform the following steps you must have access to Siebel Call Center.

To determine the IDS and test your JSF pages:

1. Log into Siebel Call Center, providing the appropriate user ID and password.
2. Navigate to the Accounts List using Site Map.
3. Click **Accounts**, then **Accounts List**.
4. From the returned list, highlight the account you want to query.
5. From the Help menu, select **About Record**.
6. Find the ID value in the **Row #** field and make a note of it.
7. Return to the page flow diagram and right-click the QueryById page icon and select **Run** from the context menu.

   The page is loaded in your default browser.
8. In the ID field, enter the value you previously noted in the the **Row #** field and click **Submit**.

   The Details page displays the detail information for the corresponding account.

54.2.1.3 Consuming a Siebel Web Service Data Control in a Portal

This section describes how you can create a Web Service data control and add it to a portal page. The steps in this section assume that you have prepared the application and generated a WSDL as described in Section 54.2.1.1, "Preparing the Siebel Application."

Note: Before you can add a data control or task flow containing a data control to a portal page you must first have configured WS-Security for WebCenter Portal. For more information about configuring WS-Security, see the "Configuring WS-Security" chapter in *Administering Oracle WebCenter Portal*.

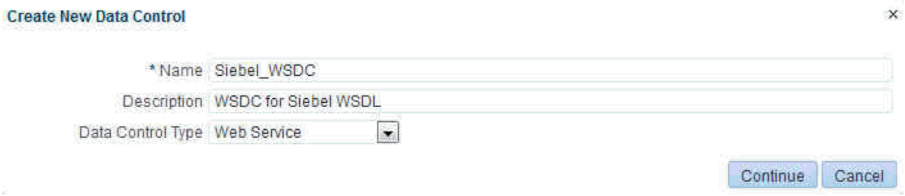
For more information about creating a Web service data control, see the "Creating a Web Service Data Control" section in Building Portals with Oracle WebCenter Portal. For information about Web service data controls, see also the "Web Service Data Controls" section in *Building Portals with Oracle WebCenter Portal*.

To create a Web service data control:

1. In WebCenter Portal or the portal in which you want to create the data control, go to either the **Shared Assets** or **Assets** page.
2. Select **Data Controls** and click **Create**.

   The Create New Data Control dialog displays (see Figure 54–33).

Figure 54–2 Create New Data Control Dialog



Create New Data Control

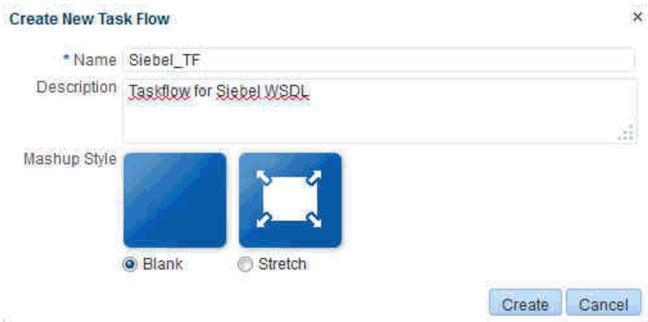
* Name: Siebel_WSDC

Description: WSDC for Siebel WSDL

Data Control Type: Web Service

3. In the Create New Data Control dialog, enter a **Name** and **Description** for the data control, select `Web Service` as the **Data Control Type,** and then click **Continue**.
4. Enter the WSDL URL that you generated in Section 54.3.4.1, "Generating the WSDL" and other details for the data control and click **Continue**.
5. Click **Show Methods**.
6. Select the method(s) to make available and click **Next**.
7. Enter the parameter default values, if any, and click **Create**.
8. To make the data control available, from the Shared Assets or Assets page, select **Task Flows**. The Create New Task Flow dialog displays (see Figure 54–35).

Figure 54–3 Create New Task Flow Dialog



Create New Task Flow

* Name: Siebel_TF

Description: Taskflow for Siebel WSDL

Mashup Style: ● Blank ○ Stretch

9. Enter the task flow **Name** and **Description**, select the **Mashup Style** to use click **Create** to create the task flow.
10. Select the task flow and click the **Edit** icon.
11. Add the data control (with parameter form) as a table onto the task flow and verify the data.
12. To make the task flow available, navigate to **Administration > Business Role Pages**.
13. Select **Business Role Page** and click the **Create** icon.
14. Edit the page and save the changes.
15. Drop the task flow onto the page and verify the data.

54.2.2 Integrating Siebel Applications Using the Siebel Web Engine

As well as integrating Siebel applications using Web services, you can also integrate Siebel applications in a Portal Framework application using the Siebel Web Engine (SWE).

Siebel Web Engine (SWE) is responsible for rendering the Siebel User Interface. Siebel Web Templates provide this HTML layout information (markup information) to the Siebel Web Engine when rendering Siebel objects in the repository definition of the application. The markup that SWE returns can also be XML for rendering within XML-aware applications or WML (wireless markup language) for rendering on wireless devices. This lets you request the SWE to return a Siebel View as XML, parse the data elements, and display the result in a Portal Framework application.

For instructions on how to use SWE within a Portal Framework application, follow the tutorial *Using the Siebel Web Engine (SWE) to View Data in a WebCenter Application*.

To complete the tutorial, you will need the following:

- Have access to or have installed Oracle JDeveloper Studio Edition
- Have access to or have installed Oracle's Siebel eBusiness Applications.
- Have access to a supported version of Windows Internet Explorer (IE) (see the *System Requirements and Supported Platforms Guide* for Siebel that is available on OTN).

Also refer to the Siebel Bookshelf Guides: *Siebel Portal Framework Guide* (specifically, the section on delivering content to external Web applications), and *Configuring Siebel Business Applications Guide* for details on SWE and Web Templates.

54.3 Integrating E-Business Suite Applications

This section describes how to integrate E-Business Suite applications in WebCenter Portal applications.

This section contains the following subsections:

- Section 54.3.1, "Introduction to Integrating EBS Applications"
- Section 54.3.2, "Required Configurations for Integrating EBS"
- Section 54.3.3, "Integrating EBS Applications as WSRP Portlets"
- Section 54.3.4, "Integrating EBS Applications as Data Controls in WebCenter Portal"

54.3.1 Introduction to Integrating EBS Applications

This section describes the integration points and requirements integrating Oracle E-Business Suite portlets in portals and Framework applications.

This section includes the following subsections:

- Section 54.3.1.1, "Understanding EBS Integration"
- Section 54.3.1.2, "Requirements for Integrating EBS Applications"

54.3.1.1 Understanding EBS Integration

Out-of-the-box, Oracle E-Business Suite OA Framework-based portlets, such as Applications Navigator, Favorites, and Worklist are WSRP and JSR 168-compliant. That means that you can access these Oracle E-Business Suite portlets from WSRP-compliant portal servers such as portals or Framework applications, by simply adding the portlet onto an application page. Follow the instructions in Section 54.3.3.2.3, "Creating a JSF Page to Consume the Remote Producer" to add them to a Framework application page, or Section 54.3.3.3.3, "Adding the EBS Portlet to a Portal Page" to add them to a portal page.

You can also create new E-Business Suite portlets that are WSRP and JSR 168-compliant that can similarly be added to a Portal Framework application. Creating and consuming WSRP and JSR 168 compliant portals in WebCenter Portal is described in Section 54.3.3.2, "Integrating EBS Applications in a Framework Application" and Section 54.3.3.3, "Integrating EBS Applications in a Portal."

54.3.1.2 Requirements for Integrating EBS Applications

The following requirements apply for integrating Oracle E-Business Suite portals into Oracle WebCenter Portal applications:

- Regions to be exposed as portlets must be created using Oracle E-Business Suite OA Framework Release 12 as previous versions are not WSRP/JSR 168-compliant.
- Oracle E-Business Suite can be configured to use Oracle Internet Directory (OID) and one of following single sign-on solutions:

  Caution: Both WebCenter and Oracle E-Business Suite must share the same OID instance and user IDs.

  - Oracle Single Sign-On (OSSO)
  - Oracle Access Manager (OAM)

  If you are using OSSO, follow the steps in My Oracle Support document 376811.1 to integrate E-Business Suite Release 12 with OID and OSSO.

  If you are using OAM, follow the steps in My Oracle Support document 975182.1 to integrate E-Business Suite Release 12 with OAM.

  E-Business Suite can also be configured to OID without OAM or OSSO. For more information, see Section 54.3.2.1, "Preparing OID for Use Without Single Sign-On."

  Note: Although Oracle E-Business Suite can be configured to use Oracle Internet Directory (OID) without single sign-on, this is not a recommended approach as users will be prompted for credentials each time they move to or from the integrated portal or data control.

- You must have granted the portal or Framework application access to the E-Business Suite Portlet Producer and added and configured the appropriate users.

  Note: To complete some steps, you may need system administrator permissions.

54.3.2 Required Configurations for Integrating EBS

This section contains configurations that should be undertaken prior to attempting to integrate portal or data controls into your portal or Framework application.

This section contains the following subsections:

- Section 54.3.2.1, "Preparing OID for Use Without Single Sign-On"
- Section 54.3.2.2, "Creating a User in EBS and Assigning a Responsibility"
- Section 54.3.2.3, "Configuring the EBS Applications Profile Options"
- Section 54.3.2.4, "Adding the WebCenter Host as a Trusted Portal Using AutoConfig"

54.3.2.1 Preparing OID for Use Without Single Sign-On

This section describes the steps to configure OID as an optional standalone environment without using either OAM or OSSO. Note that this is not a recommended approach as users will be prompted for credentials each time they move to or from an integrated portal or data control. If you have installed an SSO solution, continue with Section 54.3.2.2, "Creating a User in EBS and Assigning a Responsibility."

> **Caution:** Both WebCenter and Oracle E-Business Suite must share the same OID instance and the same user IDs.

1. Register the OID instance on the host server by following the steps below:

   a. Run the following command:

   ```
   $FND_TOP/bin/txkrun.pl -script=SetSSOReg -registerinstance=yes
   ```

   b. Supply the required information at the following prompts:

   ```
   Enter the host name where the Oracle iAS Infrastructure database is
   installed ?   <Enter the OID Host>
   Enter the LDAP Port of the Oracle Internet Directory server ? <Enter the
   LDAP Port>
   Enter SSL LDAP Port of the Oracle Internet Directory server ? <Enter the
   LDAP SSL Port>
   Enter the Oracle Internet Directory Administrator (orcladmin) Bind password
   ? <Password>
   Enter Oracle E-Business apps database user password ? <Password>
   ```

   c. Restart all the services. To do this, navigate to `$ADMIN_SCRIPTS_HOME` and run the following script to stop all services:

   ```
   ./adstpall.sh apps/apps
   ```

   and then run the following script to start all services:

   ```
   ./adstrtal.sh apps/apps
   ```

2. Register OID by following the steps below:

   a. Run the following command:

   ```
   $FND_TOP/bin/txkrun.pl -script=SetSSOReg -registeroid=yes
   ```

   b. Supply the required information at the following prompts:

   ```
   Enter LDAP Host name ? <Enter the OID Host>
   Enter the LDAP Port on Oracle Internet Directory server ? <Enter the LDAP
   Port>
   Enter the Oracle Internet Directory Administrator (orcladmin) Bind password
   ? <Password>
   Enter the instance password that you would like to register this
   application instance with ? <Password>
   Enter Oracle E-Business apps database user password ? <Password>
   ```

   c. Restart all the services. To do this, navigate to `$ADMIN_SCRIPTS_HOME` and run the following script to stop all services:

   ```
   ./adstpall.sh apps/apps
   ```

   and then run the following script to start all services:

   ```
   ./adstrtal.sh apps/apps
   ```

3. Continue by configuring EBS profile options as shown in Section 54.3.2.3, "Configuring the EBS Applications Profile Options."

54.3.2.2 Creating a User in EBS and Assigning a Responsibility

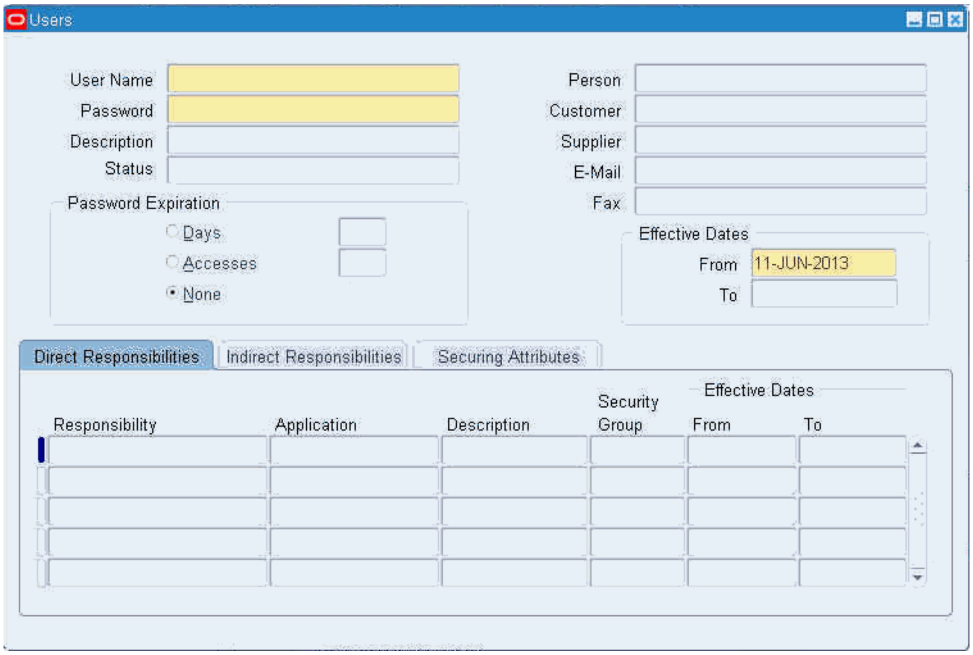
For integration with EBS to work, WebCenter and EBS must have a common OID identity store. With a common OID, you can either create a new user in EBS, or use an existing user in OID, and then assign a responsibility to that user. This will ensure that the user has access to the portlets in WebCenter. Else the register producer will not have any portlets if we do not assign a responsibility.

To create a new user and assign a responsibility:

1. Log into EBS as a system administrator if not already logged in.
2. In the Navigation pane, expand the System Administrator node, expand Security, expand User, and then click **Define**.

   The Users window displays (Figure 54–4).

Figure 54–4 Users Window

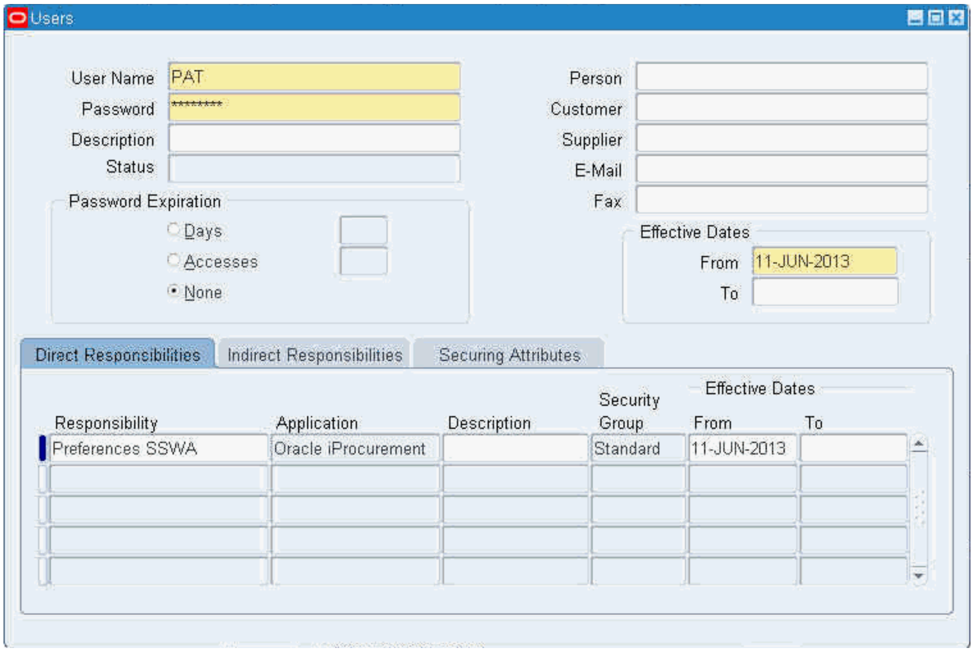


○ Days ○ Accesses ● None

From 11-JUN-2013

3. Enter the **User Name**, and **Password**. The Password Expiration options should be set to **None**.
4. Open the Direct Responsibilities tab, and search for the **Responsibility** to add and assign the **Application** to associate with it (for example, search for `Preferences SSWA` and assign `Oracle iProcurement` to it), and then click **Save** (see Figure 54–5).

Figure 54–5 Users Window Showing the Direct Responsibilities Tab



User Name: PAT

Password: ********

Description:

Status:

Password Expiration

○ Days

○ Accesses

● None

Person:

Customer:

Supplier:

E-Mail:

Fax:

Effective Dates

From: 11-JUN-2013

To:

				Effective Dates	
Responsibility	Application	Description	Security Group	From	To
Preferences SSWA	Oracle iProcurement		Standard	11-JUN-2013	

5. To confirm, log in with the newly created user and check that the application associated with the Responsibility is listed.

6. Continue by configuring the EBS Application Profile Options as described in Section 54.3.2.3, "Configuring the EBS Applications Profile Options."

54.3.2.3 Configuring the EBS Applications Profile Options

This section describes how to configure EBS Applications Profile Options and is a requirement for both SSO and non-SSO configurations.

To configure the EBS profile options:

1. Log into EBS as a system administrator.

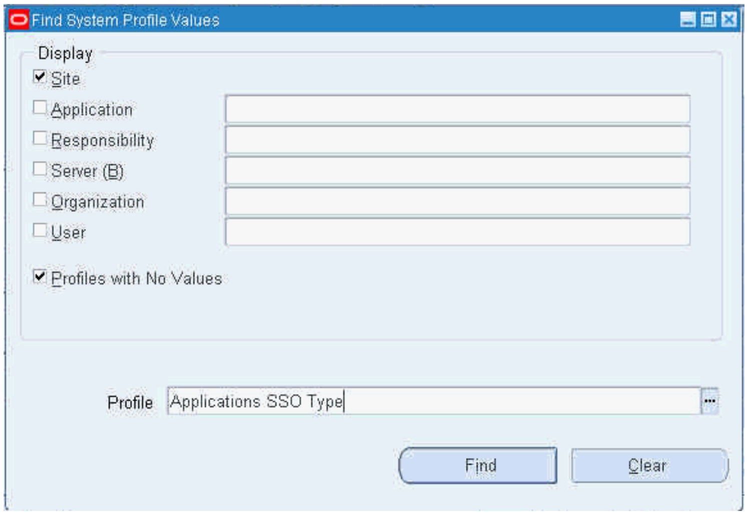
2. In the Navigation pane, expand the System Administrator node, and then click **Define Profile Options**.

3. Close the Profiles window.

4. In the Navigator, select **Profile System Values** and click **Open**.

   The Find System Profile Values window displays (see Figure 54–6)

Figure 54–6 Find System Profile Values Window



☑ Site

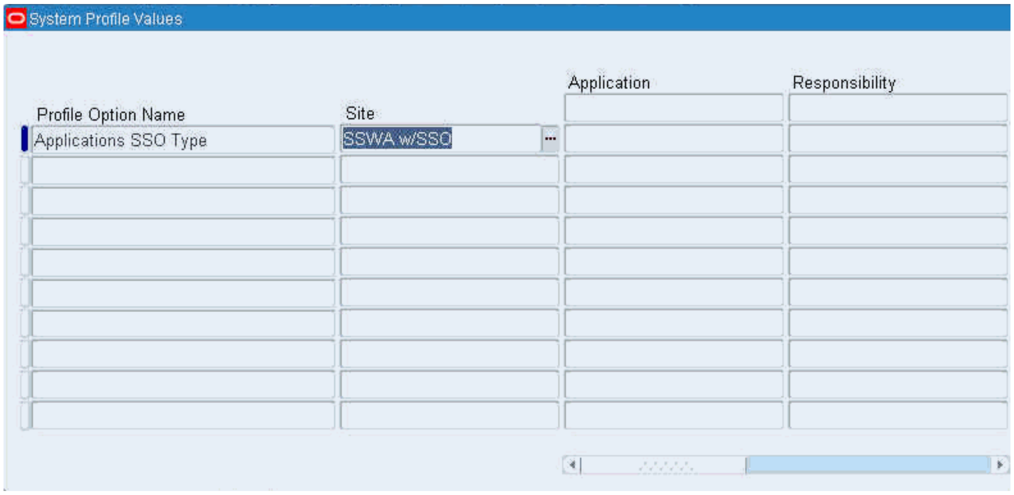
☑ Profiles with No Values

Profile: Applications SSO Type

5. Enter the **Profile** name to update and click **Find**.

   The System Profile Values window displays (see Figure 54–7).

Figure 54–7 System Profile Values Window



Profile Option Name	Site
Applications SSO Type	SSWA w/SSO

   Update the values for the following profiles, saving your entries after each update:

   `Applications SSO Enable OID Identity Add Event` = **`Enabled`**

   Applications SSO Login Types = **`Both`**

   Application SSO LDAP Synchronization = Enabled

   Applications SSO Type = **`SSWA w/ SSO`**

   Link Applications user with OID user with same username = Enabled

6. Restart all the services. To do this, navigate to `$ADMIN_SCRIPTS_HOME` and run the following script to stop all services:

```
./adstpall.sh apps/apps
```

   and then run the following script to start all services:

```
./adstrtal.sh apps/apps
```

7. Continue by adding the WebCenter host as a trusted host as described in Section 54.3.2.4, "Adding the WebCenter Host as a Trusted Portal Using AutoConfig."

54.3.2.4 Adding the WebCenter Host as a Trusted Portal Using AutoConfig

The EBS WSDL is protected and before you can access it you must first add an entry for the consuming WebCenter instance's host using the EBS AutoConfig tool. Note that without this configuration step you will get a "403 Forbidden" error if you try to access the WSDL.

To add the WebCenter host as a trusted portal:

1. Log into EBS as a system administrator if you are not already logged in.
2. In the Navigation pane, expand the System Administrator node, expand Oracle Applications Manager, and then click **Workflow**.
3. Open the Sitemap tab and click **AutoConfig**.
4. In the Edit Parameter column, click the **Edit** icon in the Applications Tier row.
5. Open the System tab and expand the `oa_web_server` node.
6. In the list of nodes, look for any that have access to Portlet Producer URLs, add the WebCenter Host and click **Save**. If you need to add multiple host name, add them separated by space.
7. Run the autoconfig script entering `apps` as the password when prompted:

   ```
   cd $ADMIN_SCRIPTS_HOME
    ./adautocfg.sh
   ```

8. Restart all the services. To do this, navigate to `$ADMIN_SCRIPTS_HOME` and run the following script to stop all services:

   ```
   ./adstpall.sh apps/apps
   ```

   and then run the following script to start all services:

   ```
   ./adstrtal.sh apps/apps
   ```

54.3.3 Integrating EBS Applications as WSRP Portlets

This section describes how to integrate EBS regions as WSRP portlets in a portal or Framework application. To start, you'll need to generate the portlet for the region using the Portlet Generator, and then continue by registering the producer and integrating it in your application.

This section contains the following subsections:

- Section 54.3.3.1, "Preparing the EBS Portlet for Remote Access"
- Section 54.3.3.2, "Integrating EBS Applications in a Framework Application"
- Section 54.3.3.3, "Integrating EBS Applications in a Portal"

54.3.3.1 Preparing the EBS Portlet for Remote Access

Oracle E-Business Suite provides a tool called Portlet Generator to convert existing standalone Oracle Application Framework regions into portlets. To be available for portletization, a region must have the following properties.

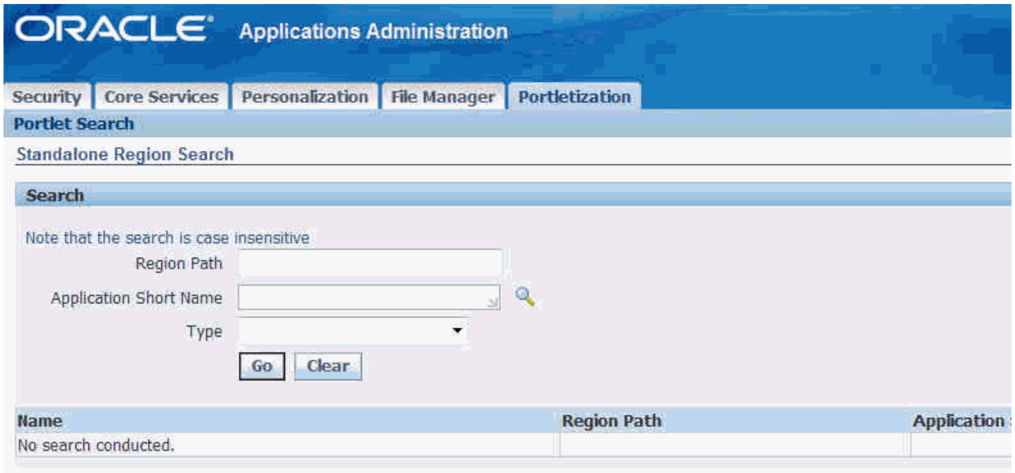
- Regions must have an Application Module (AM) defined and must have its standalone property set to `true`.
- Inline regions must have an AM defined and have its standalone property set to `true`.
- Content regions must have an AM defined (content regions do not have a standalone property)

To expose EBS functionality as a portlet using Portlet Generator:

1. Log into EBS as a system administrator.
2. In the Navigation pane, expand the Functional Administrator node, and then click **Home**.

   The Application Administration page displays (see Figure 54–8).

Figure 54–8 Application Administration Page

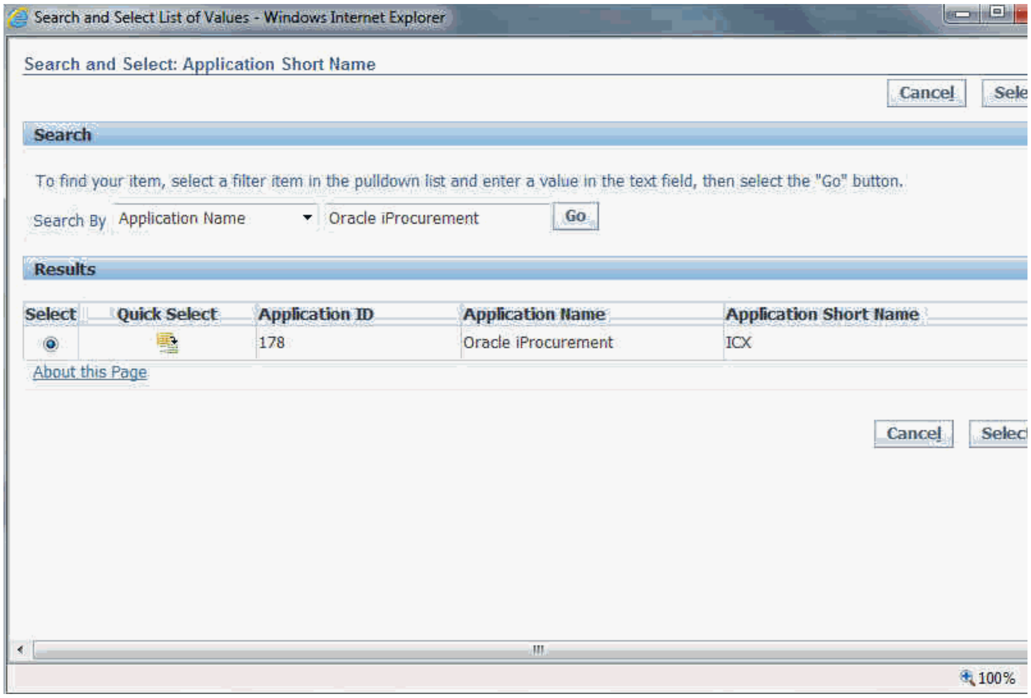


Note that the search is case insensitive

No search conducted.

3. Open the Portletization tab and click the **Search** icon for the **Application Short Name** field (or enter the **Application Short Name** if you know it).

Figure 54–9 Application Short Name Search Dialog


Search and Select List of Values - Windows Internet Explorer

Search and Select: Application Short Name

Search

To find your item, select a filter item in the pulldown list and enter a value in the text field, then select the "Go" button.

Search By: Application Name ▾ Oracle iProcurement Go

Results

Select	Quick Select	Application ID	Application Name	Application Short Name
●		178	Oracle iProcurement	ICX

About this Page
Cancel
Selec
100%

4. Select the Search By criteria (for example, select `Application Name` and enter `Oracle iProcurement`) and search for the functionality to portletize.

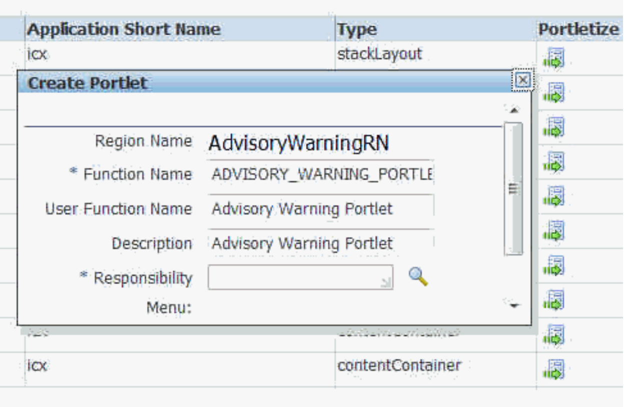
5. Select the row returned in the search results and click **Select**.

6. Click **Go** to list the EBS functionality that can be portletized.

7. Click the **Portletize** icon for the functionality you want to expose (for example, `AdvisoryWarningRN`).

   The Create Portlet dialog displays (see Figure 54–10).

Figure 54–10 Create Portlet Dialog



Application Short Name	Type	Portletize
icx	stackLayout	
icx	contentContainer	

Create Portlet

Region Name: AdvisoryWarningRN

* Function Name: ADVISORY_WARNING_PORTLE

User Function Name: Advisory Warning Portlet

Description: Advisory Warning Portlet

* Responsibility:

Menu:

8. Enter the **Responsibility** to associate the region with (for example, `Preferences SSWA`) or use the **Search** function.

9. Click **Apply**.

10. Continue by registering the EBS producer and integrating it in a portal (see Section 54.3.3.2, "Integrating EBS Applications in a Framework Application") or Framework application (see Section 54.3.3.3, "Integrating EBS Applications in a Portal").

54.3.3.2 Integrating EBS Applications in a Framework Application

This section describes how to integrate an EBS portlet in a Framework application.

This section includes the following subsections:

- Section 54.3.3.2.1, "Preparing the EBS Portlet for Remote Access"
- Section 54.3.3.2.2, "Registering the EBS WSRP Producer in the Framework Application"
- Section 54.3.3.2.3, "Creating a JSF Page to Consume the Remote Producer"
- Section 54.3.3.2.4, "Testing the Framework Application"

54.3.3.2.1 Preparing the EBS Portlet for Remote Access Prepare the standalone regions to be portletized as described in the section on Section 54.3.3.1, "Preparing the EBS Portlet for Remote Access."

Before adding the portlets in your Framework application, be sure to bounce the Apache listener as the menu and function definitions are cached.

54.3.3.2.2 Registering the EBS WSRP Producer in the Framework Application Follow the instructions below to create or open an existing Portal Framework application, and register the EBS WSRP producer.

1. Create a new Portal Framework application or open an existing one in which you would like to consume the remote (WSRP) EBS portlet.
2. Under Application Resources, right-click **Connection** and select **WSRP Producer**.

   Page 1 (Specify Producer Name) of the Register WSRP Portlet Producer wizard displays.
3. Enter a name for the WSRP producer and click **Next**.

   The Specify Connection Details page displays.
4. Enter the WSDL for the EBS producer in the **WSDL URL** field as shown below:

   ```
   WSDL URL: http://[Release_12_host]:[port]/OA_HTML/portlets/WSRPBaseService?WSDL
   ```

   For example:

   ```
   http://myEBSServer.example.com:8001/OA_HTML/portlets/WSRPBaseService?WSDL
   ```
5. Click **Next** and then **Finish**.

   The WSRP producer should now appear under Connections.
6. Continue by creating a JSF page to consume the WSRP producer as described in Section 54.3.3.2.3, "Creating a JSF Page to Consume the Remote Producer."

54.3.3.2.3 Creating a JSF Page to Consume the Remote Producer Use the following procedure to add or use an existing JSF page to consume the EBS remote producer in your Portal Framework application.

To create a JSF page:

1. In the application's Navigation panel, right-click on the application name and select **New**.

   The New Gallery dialog displays.

2. In the Categories field's tree structure, locate and expand the Web Tier.

   A list with the descriptions of the available options display in the Items field.

3. From this list, select **JSF Page** and click **OK**.

   The Create JSF Page dialog displays.

4. Create the JSF page, making sure that the `Create an XML Document (*.jspx)` field is selected. For more information about setting up the JSF page, click the Help button to access the online help.
5. Click **OK**.

   The newly created JSF page displays.

6. Under connections, expand the newly created WSRP producer and drag the portlet for the EBS page onto the JSF page.
7. In the Portlet Property Inspector, set the **RenderPortletInIFrame** property to `True`.
8. Add any other components that you need onto the page, and save the application.
9. Continue by running the page and testing that modifications made in the Portal Framework application appear in the EBS application as described in Section 54.3.3.2.4, "Testing the Framework Application."

54.3.3.2.4 Testing the Framework Application Use this procedure to test the Portal Framework application by modifying content on the JSF page in the Portal Framework application and checking that the modification shows up in the EBS application.

1. Run the `.jspx` page that you created.
2. In the running page, modify some information that you can verify the changes for in the EBS application.
3. Save your changes and confirm that the changes also appear in the EBS application.

54.3.3.3 Integrating EBS Applications in a Portal

This section contains the following subsections:

- Section 54.3.3.3.1, "Preparing the EBS Portlet for Remote Access"
- Section 54.3.3.3.2, "Registering the EBS WSRP Producer in WebCenter Portal"
- Section 54.3.3.3.3, "Adding the EBS Portlet to a Portal Page"
- Section 54.3.3.3.4, "Testing the Portal Portlet Connection"

54.3.3.3.1 Preparing the EBS Portlet for Remote Access Prepare the standalone regions to be portletized as described in the section on Section 54.3.3.1, "Preparing the EBS Portlet for Remote Access."

Before adding the portlets in WebCenter Portal, be sure to bounce the Apache listener as the menu and function definitions are cached.

54.3.3.3.2 Registering the EBS WSRP Producer in WebCenter Portal You can register the EBS WSRP producer directly in WebCenter Portal, as described in the "Registering Portlet Producers with the Administration Console" section in *Administering Oracle WebCenter*

Portal. You can also register the EBS WSRP producer using Fusion Middleware Control as described in the steps below.

To register the EBS WSRP producer using Fusion Middleware Control:

1. Prepare the EBS page that you want to consume in WebCenter Portal for remote access as described in Section 54.3.3.3.1, "Preparing the EBS Portlet for Remote Access."
2. Log into Fusion Middleware Control for the WebCenter Portal domain (`wc_domain` by default).
3. Expand `WebCenter Portal` in the Navigation bar and from the WebCenter Portal menu, and select **Register Producer**.

   The Add Portlet Producer page displays.
4. Enter a **Connection Name**, set the **Producer Type** to `WSRP Producer`, and paste the WSDL endpoint URL that you copied in step 1 into the **URL End Point** field.
5. Click **OK** and verify that the producer connection was created successfully.
6. Continue by adding the portlet to a portal page as described in Section 54.3.3.3.3, "Adding the EBS Portlet to a Portal Page."

54.3.3.3.3 Adding the EBS Portlet to a Portal Page Use the following procedure to consume the EBS remote producer in a portal page.

1. Go to the page, or create a new page, where you want to add the EBS portlet.
2. Open the page in edit mode, as explained in the "Opening a Page in the Page Editor (Composer)" section in *Building Portals with Oracle WebCenter Portal*.

   Note: By default, the resource catalog appears inline on the page. The following instructions assume that you have not changed this default view (that is, you have not selected **Hide Catalog**).

3. In the resource catalog, select **UI Components** and then select **Portlets**.

   Note: If you've created a custom catalog, **Portlets** may not appear, in which case you will need to add it to the Resource Catalog. For information about managing Resource Catalogs, see the "Working with Resource Catalogs" chapter in *Building Portals with Oracle WebCenter Portal*.

4. Click **Open** to open the Portlets catalog.
5. Click the portlet you added in Fusion Middleware Control.
6. Click **Add** for the EBS portlet you want to add to your portal page. You can also drag and drop the portlet from the inline resource catalog.
7. Click **Save** to save your changes.
8. Select the **Edit** icon for the portlet.
9. In the Component Properties dialog, select the **Display Options** tab.
10. For the Render Portlet In IFrame option, select **True**.

11. Continue by checking the portlet connection as described in Section 54.3.3.3.4, "Testing the Portal Portlet Connection."

54.3.3.3.4 Testing the Portal Portlet Connection Use this procedure to test the portal portlet connection by modifying content and checking that the modification shows up in the EBS application.

1. On the portal page to which you added the EBS portlet, modify some information that you can verify the changes for in the EBS application.
2. Save your changes and confirm that the changes also appear in the EBS application.

54.3.4 Integrating EBS Applications as Data Controls in WebCenter Portal

This section describes how to add EBS applications as Web service data controls on portal pages.

This section contains the following subsections:

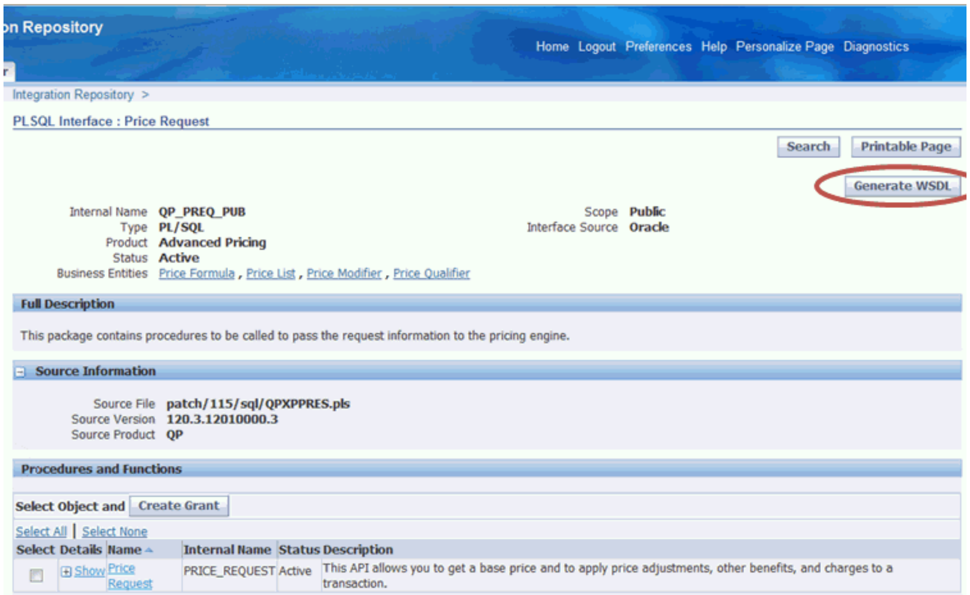
- Section 54.3.4.1, "Generating the WSDL"
- Section 54.3.4.2, "Adding a Web Service Data Control to a Portal Page"

54.3.4.1 Generating the WSDL

This section describes how to create the WSDL.

1. Log on to E-Business Suite as the SYSADMIN user.
2. In the Navigation pane, expand the Integrated SOA Gateway node and under the Integrated SOA Gateway sub-node click **Integration Repository.**
3. From the Integration Repository tab, navigate to the part of the EBS application to expose. For example, for the price request interface, you would go to **Order Management Suite > Advanced Pricing > Price List**, and then selecting **Price Request** from the list of integration points.
4. Click **Generate WSDL** to expose the integration point (for our example, a PL/SQL API integration point) as a Web service .
5. Right-click the **View WSDL** link and open the link in a new tab or new window (be sure to keep the tab or window open as you'll need it later).
6. On the Integration Repository page under Procedures and Functions (see Figure 54–11), check the box for the object to grant access to, and then click **Grant Access**.

Figure 54–11 Integration Repository - Price Request Example



PLSQL Interface : Price Request

Internal Name QP_PREQ_PUB
Type PL/SQL
Product Advanced Pricing
Status Active
Business Entities Price Formula , Price List , Price Modifier , Price Qualifier

Scope Public
Interface Source Oracle

Full Description

This package contains procedures to be called to pass the request information to the pricing engine.

Source Information

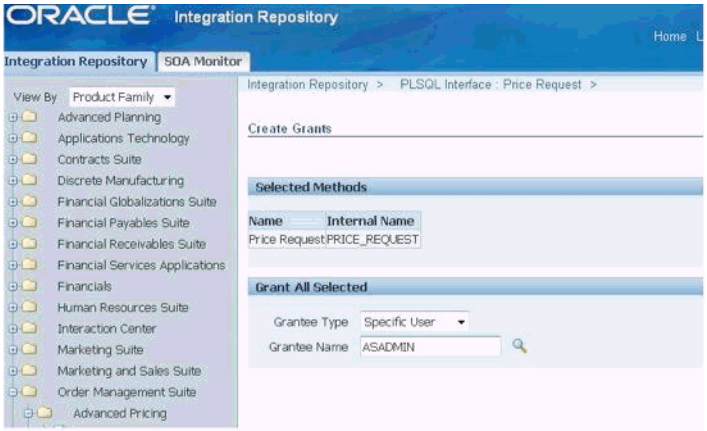
Source File patch/115/sql/QPXPPRES.pls
Source Version 120.3.12010000.3
Source Product QP

Procedures and Functions

Select	Details	Name	Internal Name	Status	Description
□	⊞ Show	Price Request	PRICE_REQUEST	Active	This API allows you to get a base price and to apply price adjustments, other benefits, and charges to a transaction.

7. Select the **Grantee Type** and **Grantee Name** (the user you want to grant access to the exposed object), or use the Search tool. For our example, we will grant access to ASADMIN.

Figure 54–12 Integration Repository - Create Grants Page



Create Grants

Selected Methods

Name	Internal Name
Price Request	PRICE_REQUEST

Grant All Selected

Grantee Type Specific User
Grantee Name ASADMIN

54.3.4.2 Adding a Web Service Data Control to a Portal Page

Once you have the WSDL, you can continue by using it to create a Web service data control.

> **Note:** Before you can add a data control or task flow containing a data control to a portal page you must first have configured WS-Security for WebCenter Portal. For more information about configuring WS-Security, see the "Configuring WS-Security" chapter in *Administering Oracle WebCenter Portal*.

For more information about creating a Web service data control, see the "Creating a Web Service Data Control" section in Building Portals with Oracle WebCenter Portal.

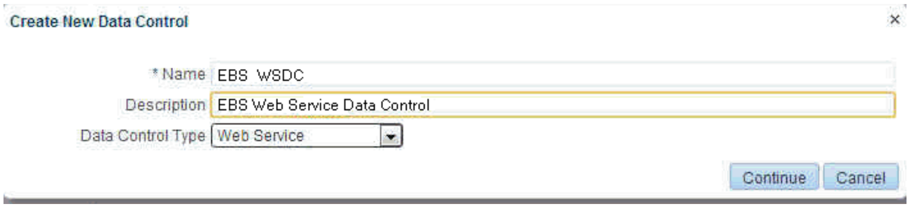
For information about Web service data controls, see also the "Web Service Data Controls" section in *Building Portals with Oracle WebCenter Portal*.

To create a Web service data control:

1. In WebCenter Portal or the portal in which you want to create the data control, go to either the **Shared Assets** or **Assets** page.
2. Select **Data Controls** and click **Create**.

   The Create New Data Control dialog displays (see Figure 54–33).

Figure 54–13 Create New Data Control Dialog



Create New Data Control

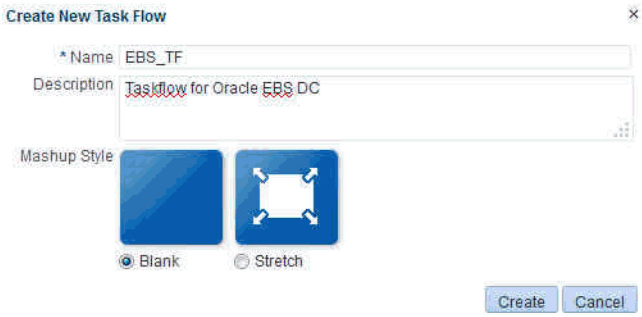
* Name EBS_WSDC

Description EBS Web Service Data Control

Data Control Type Web Service

3. In the Create New Data Control dialog, enter a **Name** and **Description** for the data control, select `Web Service` as the **Data Control Type,** and then click **Continue**.
4. Enter the WSDL URL that you generated in Section 54.3.4.1, "Generating the WSDL" and other details for the data control and click **Continue**.
5. Click **Show Methods**.
6. Select the method(s) to make available and click **Next**.
7. Enter the parameter default values, if any, and click **Create**.
8. To make the data control available, from the Shared Assets or Assets page, select **Task Flows**. The Create New Task Flow dialog displays (see Figure 54–35).

Figure 54–14 Create New Task Flow Dialog



Create New Task Flow

* Name EBS_TF

Description Taskflow for Oracle EBS DC

Mashup Style

● Blank ○ Stretch

9. Enter the task flow **Name** and **Description**, select the **Mashup Style** to use click **Create** to create the task flow.
10. Select the task flow and click the **Edit** icon.
11. Add the data control (with parameter form) as a table onto the task flow and verify the data.
12. To make the task flow available, navigate to **Administration > Business Role Pages**.
13. Select **Business Role Page** and click the **Create** icon.

14. Edit the page and save the changes.
15. Drop the task flow onto the page and verify the data.

54.4 Integrating JD Edwards Applications

This section describes how to integrate JD Edwards applications into WebCenter Portal or a Framework application.

This section contains the following subsections:

- Section 54.4.1, "Integrating JD Edwards Applications in a Framework Application"
- Section 54.4.2, "Integrating JD Edwards Applications in a Portal"

54.4.1 Integrating JD Edwards Applications in a Framework Application

This section includes the following subsections:

- Section 54.4.1.1, "Preparing the JD Edwards Application for Remote Access"
- Section 54.4.1.2, "Registering the JD Edwards WSRP Producer in the Framework Application"
- Section 54.4.1.3, "Creating the JSF Page to Consume the Remote Producer"
- Section 54.4.1.4, "Testing the Framework Application"

54.4.1.1 Preparing the JD Edwards Application for Remote Access

Before you can add JD Edwards standalone regions to Portal Framework applications, you must first prepare them to be portletized within JD Edwards by making them available externally as portlets and locating the pre-configured WSDL in the `webclient.war/wsdl` directory. The WSDL URL is needed so that you can register the JD Edwards WSRP producer and consume it from a Portal Framework application page. To view the XML content of the JDE WSDL in the browser, open the Page source of the page in the browser.

54.4.1.2 Registering the JD Edwards WSRP Producer in the Framework Application

Follow the instructions below to create or open an existing Portal Framework application, and register the JD Edwards WSRP producer.

1. Create a new Portal Framework application or open an existing one in which you would like to consume the remote (WSRP) JD Edwards portlet.
2. Under Application Resources, right-click Connection and select **WSRP Producer**.

   Page 1 (Specify Producer Name) of the Register WSRP Portlet Producer wizard displays.
3. Enter `JDE` as the name for the WSRP producer and click **Next**.

   The Specify Connection Details page displays.
4. Paste the WSDL URL for the JD Edwards producer into the **WSDL URL** field.
5. Click **Next** and then **Finish**.

   The WSRP producer should now appear under Connections.
6. Continue by creating a JSF page to consume the WSRP producer as described in Section 54.4.1.3, "Creating the JSF Page to Consume the Remote Producer."

54.4.1.3 Creating the JSF Page to Consume the Remote Producer

Use the following procedure to add or use an existing JSF page to consume the JD Edwards remote producer in your Portal Framework application.

To create a JSF page:

1. In the application's Navigation panel, right-click on the application name and select **New**.

   The New Gallery dialog displays.

2. In the Categories field's tree structure, locate and expand the Web Tier.

   A list with the descriptions of the available options display in the Items field.

3. From this list, select **JSF Page** and click **OK**.

   The Create JSF Page dialog displays.

4. Create the JSF page, making sure that the `Create an XML Document (*.jspx)` field is selected. For more information about setting up the JSF page, click the Help button to access the online help.

5. Click **OK**.

   The newly created JSF page displays.

6. Under connections, expand the newly created WSRP producer and drag the portlet for the JD Edwards page onto the JSF page.

7. In the Portlet Property Inspector, set the **RenderPortletInIFrame** property to `True`.

8. Add any other components that you need onto the page, and save the application.

9. Continue by running the page and testing that modifications made in the Portal Framework application appear in the JD Edwards application as described in Section 54.4.1.4, "Testing the Framework Application."

54.4.1.4 Testing the Framework Application

Use this procedure to test the Portal Framework application by modifying content on the JSF page in the Portal Framework application and checking that the modification shows up in the JD Edwards application.

1. Run the `.jspx` page that you created.

2. In the running page, modify some information that you can verify the changes for in the JD Edwards application.

3. Save your changes and confirm that the changes also appear in the JD Edwards application.

54.4.2 Integrating JD Edwards Applications in a Portal

This section contains the following subsections:

- Section 54.4.2.1, "Registering the Producer"
- Section 54.4.2.2, "Adding the JD Edwards Portlet to a Portal Page"
- Section 54.4.2.3, "Testing the Portal Portlet Connection"

54.4.2.1 Registering the Producer

You can register the JD Edwards WSRP producer directly in WebCenter Portal, as described in the "Registering Portlet Producers with the Administration Console" section in *Administering Oracle WebCenter Portal*. You can also register the JD Edwards WSRP producer using Fusion Middleware Control as described in the steps below.

To register the JD Edwards WSRP producer using Fusion Middleware Control:

1. Prepare the JD Edwards page that you want to consume in WebCenter Portal for remote access as described in Section 54.4.1.1, "Preparing the JD Edwards Application for Remote Access."
2. Log into Fusion Middleware Control for the WebCenter Portal domain (`wc_domain` by default).
3. Expand `WebCenter Portal` in the Navigation bar and from the WebCenter Portal menu, and select **Register Producer**.

   The Add Portlet Producer page displays.
4. Enter `JDE` as the **Connection Name**, set the **Producer Type** to `WSRP Producer`, and paste the WSDL endpoint URL that you copied in step 1 into the **URL End Point** field.
5. Click **OK** and verify that the producer connection was created successfully.
6. Continue by adding the portlet to a portal page as described in Section 54.4.2.2, "Adding the JD Edwards Portlet to a Portal Page."

54.4.2.2 Adding the JD Edwards Portlet to a Portal Page

Use the following procedure to consume the JD Edwards remote producer in WebCenter Portal.

1. Go to the page, or create a new page, where you want to add the JD Edwards portlet.
2. Open the page in edit mode, as explained in the "Opening a Page in the Page Editor (Composer)" section in *Building Portals with Oracle WebCenter Portal*.

   > **Note:** By default, the resource catalog appears inline on the page. The following instructions assume that you have not changed this default view (that is, you have not selected **Hide Catalog**).

3. In the resource catalog, select **UI Components** and then select **Portlets**.

   > **Note:** If you've created a custom catalog, **Portlets** may not appear, in which case you will need to add it to the Resource Catalog. For information about managing Resource Catalogs, see the "Working with Resource Catalogs" chapter in *Building Portals with Oracle WebCenter Portal*.

4. Click **Open** to open the Portlets catalog.
5. Click the portlet you added in Fusion Middleware Control.
6. Click **Add** for the EBS portlet you want to add to your portal page. You can also drag and drop the portlet from the inline resource catalog.
7. Click **Save** to save your changes.
8. Select the **Edit** icon for the portlet.
9. In the Component Properties dialog, select the **Display Options** tab.

10. For the Render Portlet In IFrame option, select **True**.
11. Continue by checking the portlet connection as described in Section 54.3.3.3.4, "Testing the Portal Portlet Connection."

54.4.2.3 Testing the Portal Portlet Connection

Use this procedure to test the portal portlet connection by modifying content and checking that the modification shows up in the JD Edwards application.

1. On the portal page that you added the JD Edwards portlet to, modify some information that you can verify the changes for in the JD Edwards application.
2. Save your changes and confirm that the changes also appear in the JD Edwards application.

54.5 Integrating PeopleSoft Applications

This section describes how to integrate PeopleSoft applications in WebCenter Portal or Framework application.

This section contains the following subsections:

- Section 54.5.1, "Introduction to Integrating PeopleSoft Applications"
- Section 54.5.2, "Integrating PeopleSoft Applications as WSRP Portlets"
- Section 54.5.3, "Integrating PeopleSoft Applications as Data Controls in WebCenter Portal"

54.5.1 Introduction to Integrating PeopleSoft Applications

This section describes the benefits and methods involved in integrating PeopleSoft applications into WebCenter Portal and Framework applications.

This section includes the following subsections:

- Section 54.5.1.1, "Understanding PeopleSoft Integration"
- Section 54.5.1.2, "Requirements for Integrating PeopleSoft Applications"

54.5.1.1 Understanding PeopleSoft Integration

PeopleTools 8.51 and later lets you expose PeopleSoft applications as WSRP portlets in remote applications such as WebCenter Portal or a Framework application. This allows people who only need access to a small portion of PeopleSoft's functionality to access it through WebCenter Portal or a Framework application without needing to open or learn the entire PeopleSoft application.

54.5.1.2 Requirements for Integrating PeopleSoft Applications

This section the prerequisites for integrating PeopleSoft objects in WebCenter Portal or a Portal Framework application.

- PeopleSoft 9.0 or later.
- PeopleTools 8.51 or later.
- When using WS-Security for automatic sign on to PeopleSoft, in order for the SAML assertion to be valid, the date/time on the PeopleSoft and Oracle WebCenter Portal servers must be synchronized. If this is problematic, then the PeopleSoft web server's time may be set to be slightly ahead of the Oracle WebCenter Portal server.

- For PeopleTools 8.51, you may need to create and configure a custom OWSM policy in order to fully support WS-Security. For more information, see Section 54.5.2.6, "Configuring WS-Security for PeopleTools 8.51."
- For PeopleTools 8.51, only upper case subject names are supported, requiring that only fully upper case user IDs can be used in WebCenter for the integration to work.

54.5.2 Integrating PeopleSoft Applications as WSRP Portlets

This section describes how to expose PeopleSoft applications as WSRP portlets in a portal or Framework application.

This section includes the following subsections:

- Section 54.5.2.1, "Preparing the PeopleSoft Application for Remote Access"
- Section 54.5.2.2, "Configuring WS-Security for PeopleTools 8.52 and Later"
- Section 54.5.2.3, "Attaching a WS-Security Policy to WebCenter Portal"
- Section 54.5.2.4, "Integrating PeopleSoft Applications in a Portal"
- Section 54.5.2.5, "Integrating PeopleSoft Applications in a Framework Application"
- Section 54.5.2.6, "Configuring WS-Security for PeopleTools 8.51"

54.5.2.1 Preparing the PeopleSoft Application for Remote Access

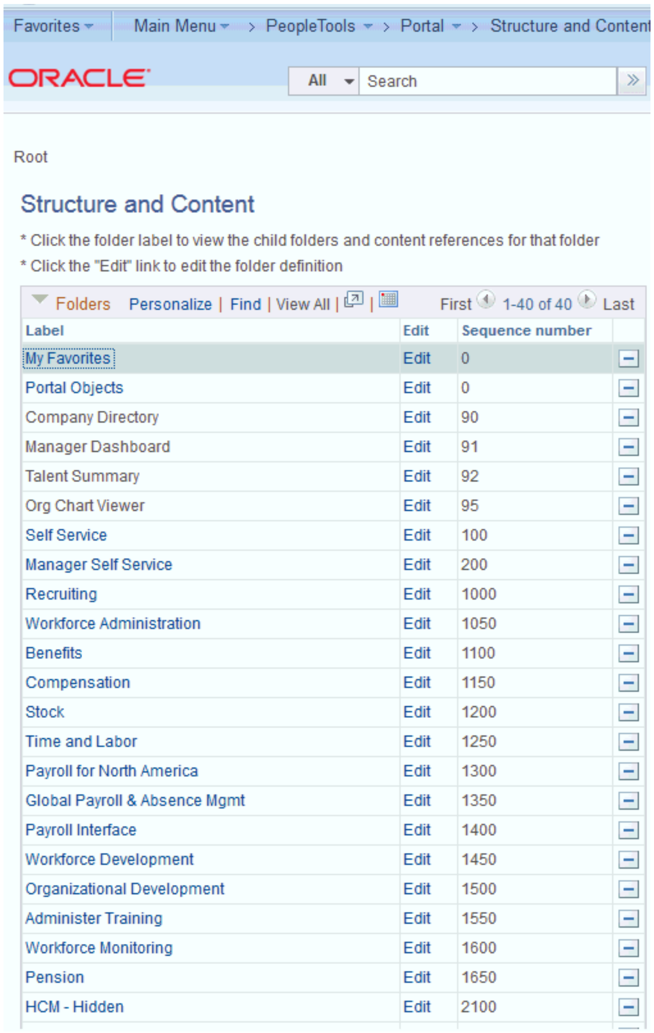
This section describes how to prepare the PeopleSoft application so that it can be consumed by WebCenter Portal or a Framework application.

To prepare the PeopleSoft application:

1. Log into PeopleSoft as an administrator.
2. Select PeopleTools from the main menu.
3. From the People Tools main menu, expand **Portal**.
4. Select **Structure and Content**.

   The Structure and Content page displays a list of folders containing PeopleSoft objects that could be exposed as a WSRP Portlet (see Figure 54–15).

Figure 54–15 Structure and Content Page



Root

Structure and Content

* Click the folder label to view the child folders and content references for that folder

* Click the "Edit" link to edit the folder definition

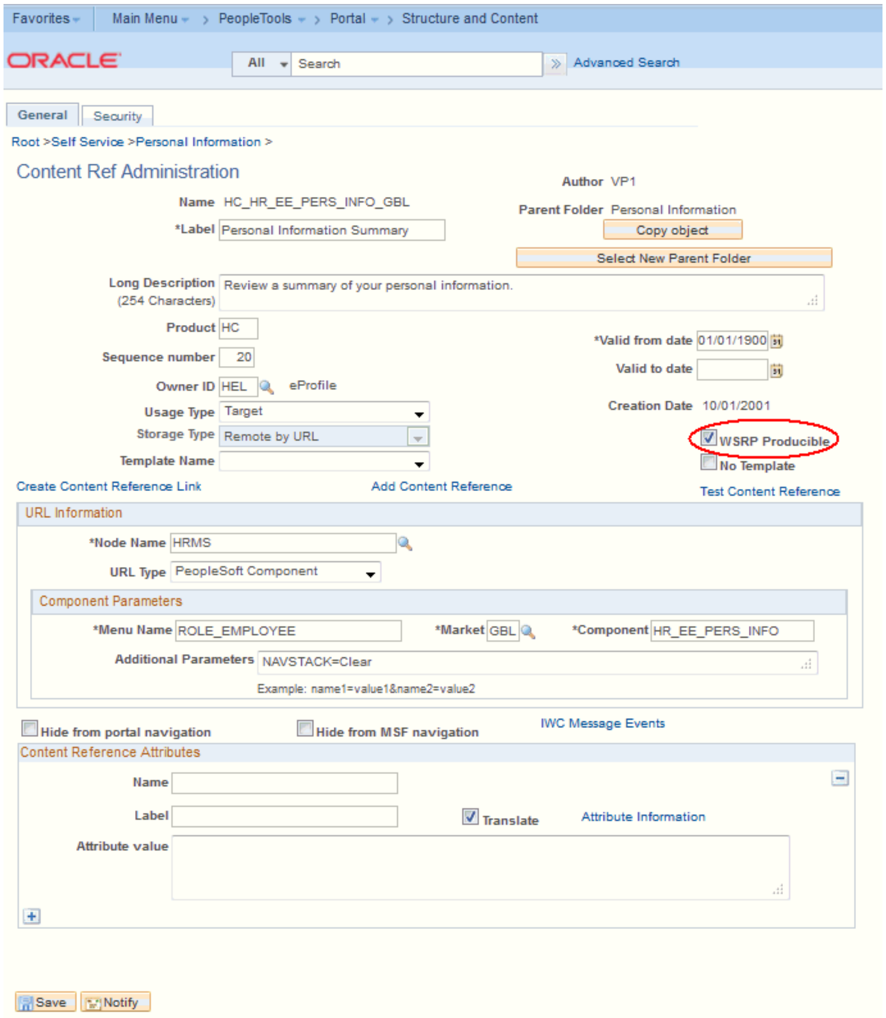
Folders | Personalize | Find | View All | First 1-40 of 40 Last

Label	Edit	Sequence number
My Favorites	Edit	0
Portal Objects	Edit	0
Company Directory	Edit	90
Manager Dashboard	Edit	91
Talent Summary	Edit	92
Org Chart Viewer	Edit	95
Self Service	Edit	100
Manager Self Service	Edit	200
Recruiting	Edit	1000
Workforce Administration	Edit	1050
Benefits	Edit	1100
Compensation	Edit	1150
Stock	Edit	1200
Time and Labor	Edit	1250
Payroll for North America	Edit	1300
Global Payroll & Absence Mgmt	Edit	1350
Payroll Interface	Edit	1400
Workforce Development	Edit	1450
Organizational Development	Edit	1500
Administer Training	Edit	1550
Workforce Monitoring	Edit	1600
Pension	Edit	1650
HCM - Hidden	Edit	2100

5. Navigate to the folder and subfolder (if required) containing the service that you want to expose as portlet in WebCenter Portal or Framework application and click **Edit** to open it. For example, you could select **Self Service**, **Personal Information**, and then **Personal Information Summary**.

   The Content Ref Administration page displays (see Figure 54–16).

Figure 54–16 Content Ref Administration Page



Root >Self Service >Personal Information >

Content Ref Administration

Author VP1

Name HC_HR_EE_PERS_INFO_GBL

Parent Folder Personal Information

*Label Personal Information Summary

Long Description (254 Characters) Review a summary of your personal information.

Product HC

*Valid from date 01/01/1900

Sequence number 20

Valid to date

Owner ID HEL eProfile

Creation Date 10/01/2001

Usage Type Target

Storage Type Remote by URL

☑ WSRP Producible

Template Name

□ No Template

URL Information

*Node Name HRMS

URL Type PeopleSoft Component

Component Parameters

*Menu Name ROLE_EMPLOYEE *Market GBL *Component HR_EE_PERS_INFO

Additional Parameters NAVSTACK=Clear

Example: name1=value1&name2=value2

□ Hide from portal navigation □ Hide from MSF navigation

Content Reference Attributes

Name

Label ☑ Translate

Attribute value

6. On the General tab, select the **WSRP Producible** checkbox.

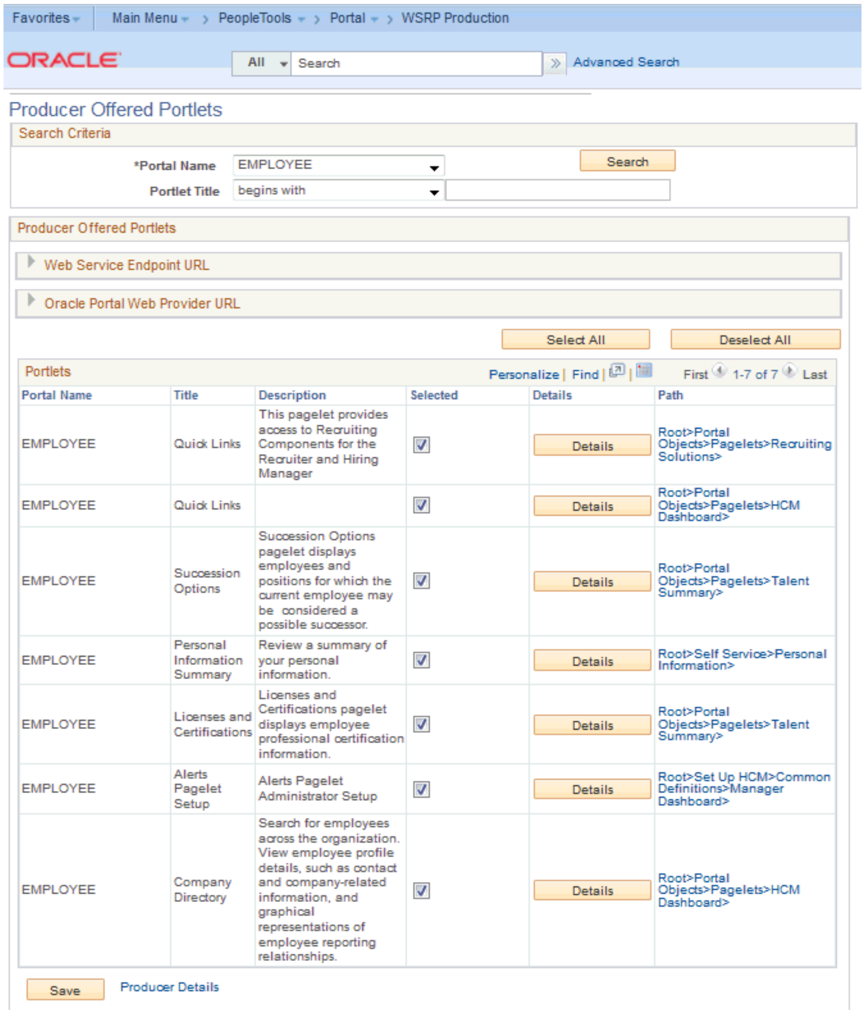
7. Save the page.

8. In the PeopleSoft Application Designer, open the component object to the Request Details page that gets displayed in PeopleSoft, and in the Component Properties section, check the **WSRP Compliant** check box.

9. From the main PeopleSoft menu, expand PeopleTools and then Portal and select **WSRP Production**.

   The Producer Offered Portlets page displays (see Figure 54–17).

Figure 54–17 Producer Offered Portals Page



Producer Offered Portlets

Search Criteria

*Portal Name EMPLOYEE

Portlet Title begins with

Search

Producer Offered Portlets

Web Service Endpoint URL

Oracle Portal Web Provider URL

Select All | Deselect All

Portlets — Personalize | Find | First 1-7 of 7 Last

Portal Name	Title	Description	Selected	Details	Path
EMPLOYEE	Quick Links	This pagelet provides access to Recruiting Components for the Recruiter and Hiring Manager	☑	Details	Root>Portal Objects>Pagelets>Recruiting Solutions>
EMPLOYEE	Quick Links		☑	Details	Root>Portal Objects>Pagelets>HCM Dashboard>
EMPLOYEE	Succession Options	Succession Options pagelet displays employees and positions for which the current employee may be considered a possible successor.	☑	Details	Root>Portal Objects>Pagelets>Talent Summary>
EMPLOYEE	Personal Information Summary	Review a summary of your personal information.	☑	Details	Root>Self Service>Personal Information>
EMPLOYEE	Licenses and Certifications	Licenses and Certifications pagelet displays employee professional certification information.	☑	Details	Root>Portal Objects>Pagelets>Talent Summary>
EMPLOYEE	Alerts Pagelet Setup	Alerts Pagelet Administrator Setup	☑	Details	Root>Set Up HCM>Common Definitions>Manager Dashboard>
EMPLOYEE	Company Directory	Search for employees across the organization. View employee profile details, such as contact and company-related information, and graphical representations of employee reporting relationships.	☑	Details	Root>Portal Objects>Pagelets>HCM Dashboard>

Save | Producer Details

10. Verify that the service is exposed, and then expand Web Service Endpoint URL and copy the URL (the WSDL).

11. Open a new tab in your browser, and paste the copied URL into the Navigation Bar to access the WSDL page.

12. Copy the URL to the clipboard.

13. Continue by integrating the PeopleSoft WSRP producer in WebCenter Portal or a Framework application as described in Section 54.5.2.5, "Integrating PeopleSoft Applications in a Framework Application" and Section 54.5.2.4, "Integrating PeopleSoft Applications in a Portal."

54.5.2.2 Configuring WS-Security for PeopleTools 8.52 and Later

This section describes how to create a keystore for both Oracle WebCenter Portal and PeopleSoft, and exchange the private key between them. This step is required prior to adding WS-Security policies for both portals and FrameWork applications.

1. First, we will create WebCenter keystore as `webcenter.jks` with `orakey` as the private key, and PeopleSoft's public key `rootCA` and the certificate that PeopleSoft will use as the WS-Security recipient using the following `keytool` commands:

```
./keytool -genkeypair -keyalg RSA -dname "cn=orakey,dc=us,dc=oracle,dc=com"
```

```
-alias orakey -keypass password -keystore webcenter.jks -storepass password
-validity 720

./keytool -exportcert -v -alias orakey -keystore webcenter.jks -storepass
password -rfc -file orakey.cer

./keytool -importcert -trustcacerts -alias orakey -file orakey.cer -keystore
peoplesoft.jks -storepass password
```

2. Next, we will create PeopleSoft keystore as `peoplesoft.jks` with `rootCA` as the private key and WebCenter's public key `orakey` and the certificate that WebCenter will use as the WS-Security recipient.

   ```
   ./keytool -genkeypair -keyalg RSA -dname "cn=rootCA,dc=us,dc=oracle,dc=com"
   -alias rootCA -keypass password -keystore peoplesoft.jks -storepass password
   -validity 720

   ./keytool -exportcert -v -alias rootCA -keystore peoplesoft.jks -storepass
   password -rfc -file rootca.cer

   ./keytool -importcert -trustcacerts -alias rootCA -file rootca.cer -keystore
   webcenter.jks -storepass password
   ```

3. After creating the key stores for Oracle WebCenter Portal and PeopleSoft, copy the `peoplesoft.jks` to the PeopleSoft host and `webcenter.jks` to WebCenter host:

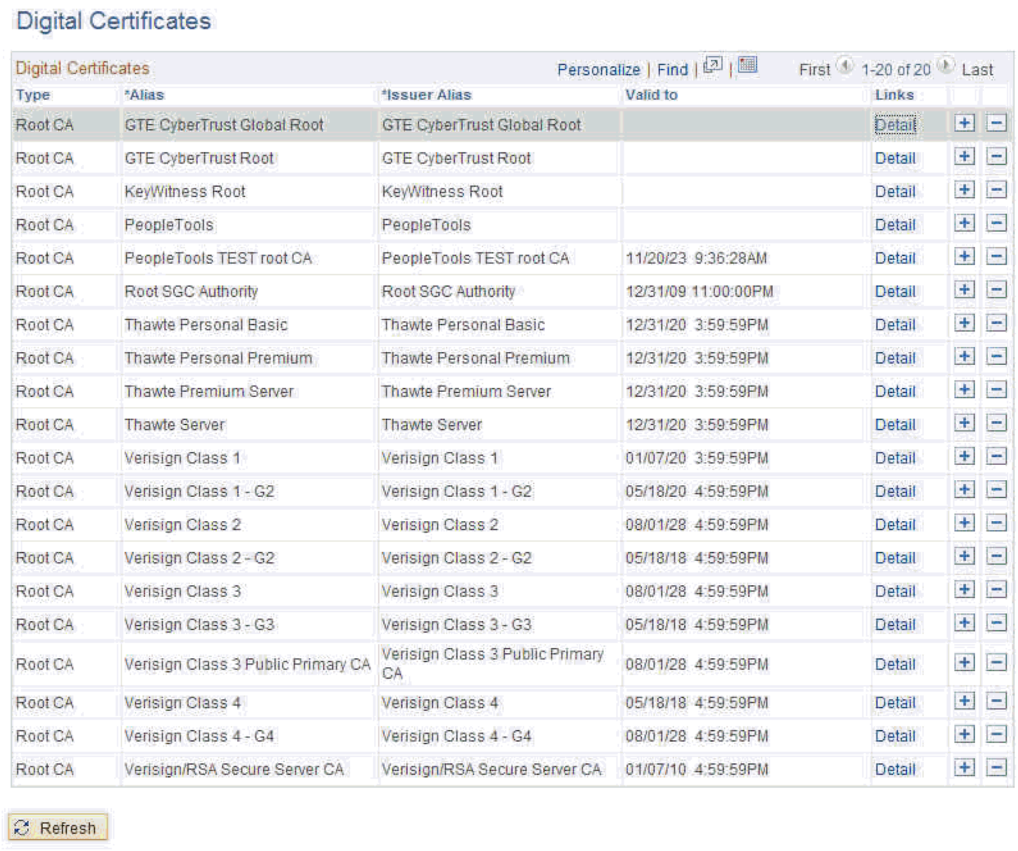
   - Copy `peoplesoft.jks` to `/home/psadm2/psft/pt/8.52/webserv/<Domain_Name>/applications/peoplesoft/pspc.war/WEB-INF/classes`
   - Copy `webcenter.jks` to `<Domain_Home>/config/fmwconfig/`

4. Install the certificate in PeopleSoft as shown below:

   a. Log into PeopleSoft as an administrator and navigate to **PeopleTools > Security > Security Objects > Digital Certificate**.

      The Digital Certificates page displays (see Figure 54–18).

Figure 54–18 Digital Certificates Page



Digital Certificates

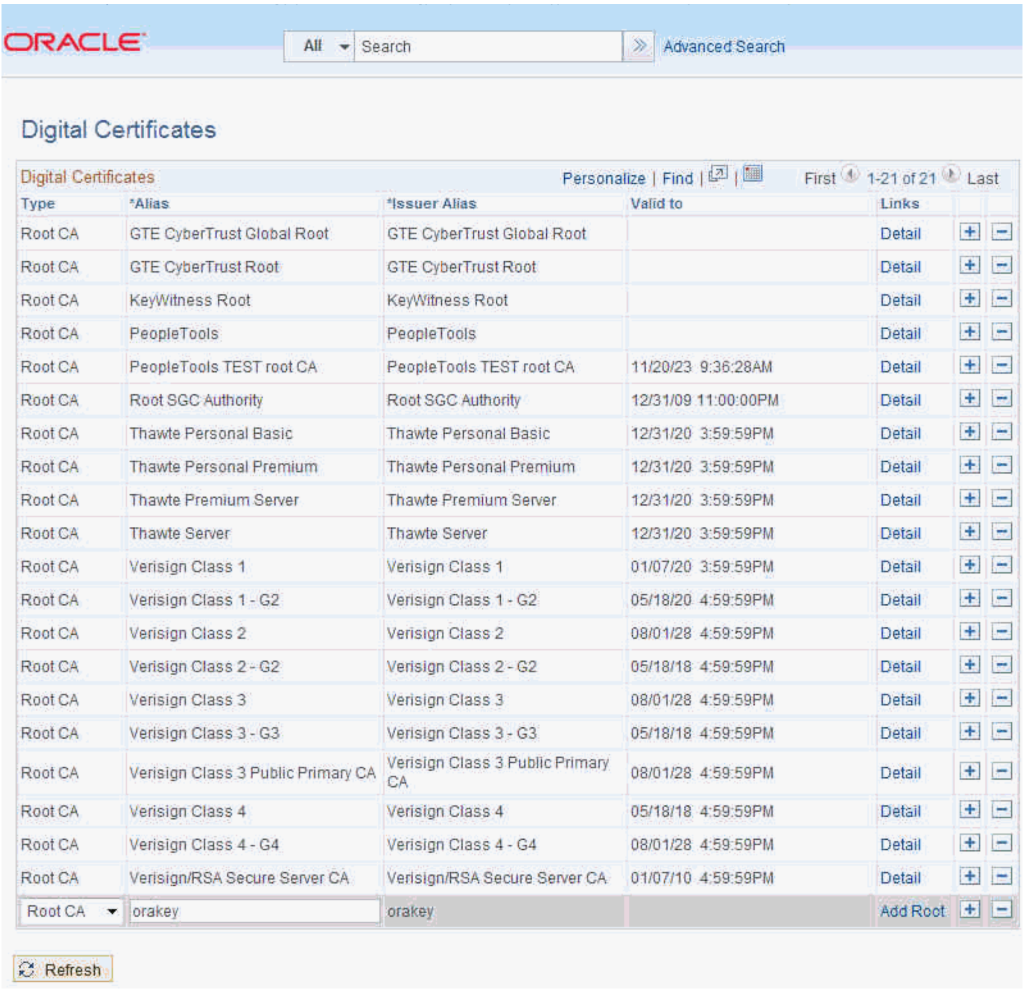
Digital Certificates — Personalize | Find | First 1-20 of 20 Last

Type	*Alias	*Issuer Alias	Valid to	Links		
Root CA	GTE CyberTrust Global Root	GTE CyberTrust Global Root		Detail	+	−
Root CA	GTE CyberTrust Root	GTE CyberTrust Root		Detail	+	−
Root CA	KeyWitness Root	KeyWitness Root		Detail	+	−
Root CA	PeopleTools	PeopleTools		Detail	+	−
Root CA	PeopleTools TEST root CA	PeopleTools TEST root CA	11/20/23 9:36:28AM	Detail	+	−
Root CA	Root SGC Authority	Root SGC Authority	12/31/09 11:00:00PM	Detail	+	−
Root CA	Thawte Personal Basic	Thawte Personal Basic	12/31/20 3:59:59PM	Detail	+	−
Root CA	Thawte Personal Premium	Thawte Personal Premium	12/31/20 3:59:59PM	Detail	+	−
Root CA	Thawte Premium Server	Thawte Premium Server	12/31/20 3:59:59PM	Detail	+	−
Root CA	Thawte Server	Thawte Server	12/31/20 3:59:59PM	Detail	+	−
Root CA	Verisign Class 1	Verisign Class 1	01/07/20 3:59:59PM	Detail	+	−
Root CA	Verisign Class 1 - G2	Verisign Class 1 - G2	05/18/20 4:59:59PM	Detail	+	−
Root CA	Verisign Class 2	Verisign Class 2	08/01/28 4:59:59PM	Detail	+	−
Root CA	Verisign Class 2 - G2	Verisign Class 2 - G2	05/18/18 4:59:59PM	Detail	+	−
Root CA	Verisign Class 3	Verisign Class 3	08/01/28 4:59:59PM	Detail	+	−
Root CA	Verisign Class 3 - G3	Verisign Class 3 - G3	05/18/18 4:59:59PM	Detail	+	−
Root CA	Verisign Class 3 Public Primary CA	Verisign Class 3 Public Primary CA	08/01/28 4:59:59PM	Detail	+	−
Root CA	Verisign Class 4	Verisign Class 4	05/18/18 4:59:59PM	Detail	+	−
Root CA	Verisign Class 4 - G4	Verisign Class 4 - G4	08/01/28 4:59:59PM	Detail	+	−
Root CA	Verisign/RSA Secure Server CA	Verisign/RSA Secure Server CA	01/07/10 4:59:59PM	Detail	+	−

b. Click **+** to add a new entry.

We need to add digital certificates for `Remote` and `RootCA` as shown in Figure 54–19.

Figure 54–19 Digital Certificates Page



Digital Certificates

Digital Certificates

Type	*Alias	*Issuer Alias	Valid to	Links		
Root CA	GTE CyberTrust Global Root	GTE CyberTrust Global Root		Detail	+	−
Root CA	GTE CyberTrust Root	GTE CyberTrust Root		Detail	+	−
Root CA	KeyWitness Root	KeyWitness Root		Detail	+	−
Root CA	PeopleTools	PeopleTools		Detail	+	−
Root CA	PeopleTools TEST root CA	PeopleTools TEST root CA	11/20/23 9:36:28AM	Detail	+	−
Root CA	Root SGC Authority	Root SGC Authority	12/31/09 11:00:00PM	Detail	+	−
Root CA	Thawte Personal Basic	Thawte Personal Basic	12/31/20 3:59:59PM	Detail	+	−
Root CA	Thawte Personal Premium	Thawte Personal Premium	12/31/20 3:59:59PM	Detail	+	−
Root CA	Thawte Premium Server	Thawte Premium Server	12/31/20 3:59:59PM	Detail	+	−
Root CA	Thawte Server	Thawte Server	12/31/20 3:59:59PM	Detail	+	−
Root CA	Verisign Class 1	Verisign Class 1	01/07/20 3:59:59PM	Detail	+	−
Root CA	Verisign Class 1 - G2	Verisign Class 1 - G2	05/18/20 4:59:59PM	Detail	+	−
Root CA	Verisign Class 2	Verisign Class 2	08/01/28 4:59:59PM	Detail	+	−
Root CA	Verisign Class 2 - G2	Verisign Class 2 - G2	05/18/18 4:59:59PM	Detail	+	−
Root CA	Verisign Class 3	Verisign Class 3	08/01/28 4:59:59PM	Detail	+	−
Root CA	Verisign Class 3 - G3	Verisign Class 3 - G3	05/18/18 4:59:59PM	Detail	+	−
Root CA	Verisign Class 3 Public Primary CA	Verisign Class 3 Public Primary CA	08/01/28 4:59:59PM	Detail	+	−
Root CA	Verisign Class 4	Verisign Class 4	05/18/18 4:59:59PM	Detail	+	−
Root CA	Verisign Class 4 - G4	Verisign Class 4 - G4	08/01/28 4:59:59PM	Detail	+	−
Root CA	Verisign/RSA Secure Server CA	Verisign/RSA Secure Server CA	01/07/10 4:59:59PM	Detail	+	−
Root CA	orakey	orakey		Add Root	+	−

c. Enter the **Type** as `RootCA`, **Alias** as `orakey`, **Issuer Alias** as `orakey`, and then click the **Search** icon (magnifying glass).

d. Click **Import** and in the popup, enter the entire text of `orakey.cer` created earlier and click **OK**.

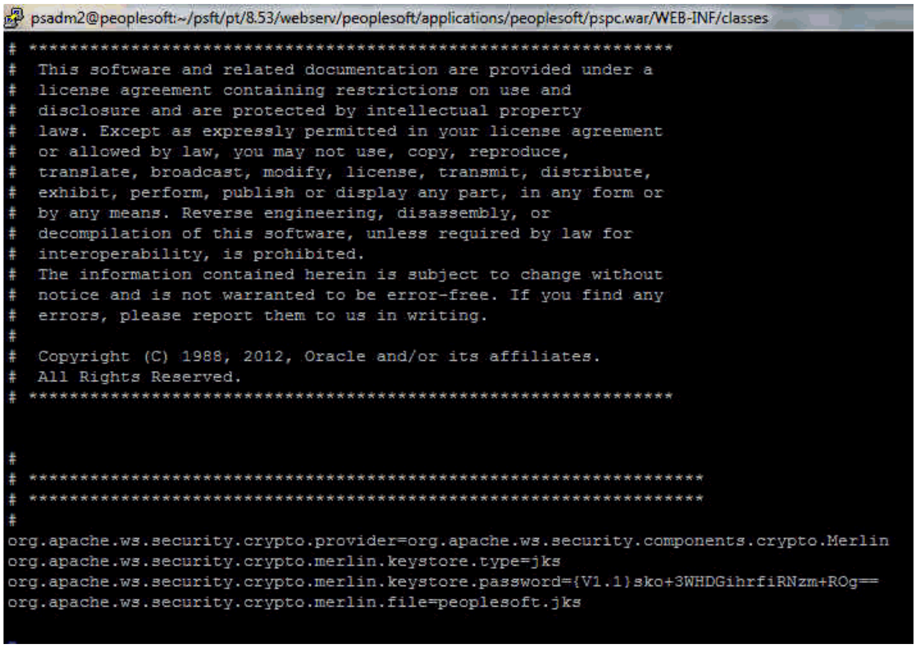
e. Click **+** to add another new entry, and enter the **Type** as `Remote`, **Alias** as `orakey`, **Issuer Alias** as `orakey` and then click the **Search** icon.

f. Click **Import** and in the popup, enter the entire text of `orakey.cer` created earlier and click **OK**.

5. Update the `WSS.properties` file under `/home/psadm2/psft/pt/8.52/webserv/<Domain_Name>/applications/peoplesoft/pspc.war/WEB-INF/classes` to reference the `peoplesoft.jks` file.

6. Use `PSCipher.sh` to create an Encrypted Password and update the KeyStore password as shown in Figure 54–20.

Figure 54–20 PSCipher.sh



psadm2@peoplesoft:~/psft/pt/8.53/webserv/peoplesoft/applications/peoplesoft/pspc.war/WEB-INF/classes

```
# ***************************************************************
#  This software and related documentation are provided under a
#  license agreement containing restrictions on use and
#  disclosure and are protected by intellectual property
#  laws. Except as expressly permitted in your license agreement
#  or allowed by law, you may not use, copy, reproduce,
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#  exhibit, perform, publish or display any part, in any form or
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#  errors, please report them to us in writing.
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#  Copyright (C) 1988, 2012, Oracle and/or its affiliates.
#  All Rights Reserved.
# ***************************************************************


#
# ******************************************************************
# ******************************************************************
#
org.apache.ws.security.crypto.provider=org.apache.ws.security.components.crypto.Merlin
org.apache.ws.security.crypto.merlin.keystore.type=jks
org.apache.ws.security.crypto.merlin.keystore.password={V1.1}sko+3WHDGihrfiRNzm+ROg==
org.apache.ws.security.crypto.merlin.file=peoplesoft.jks
```
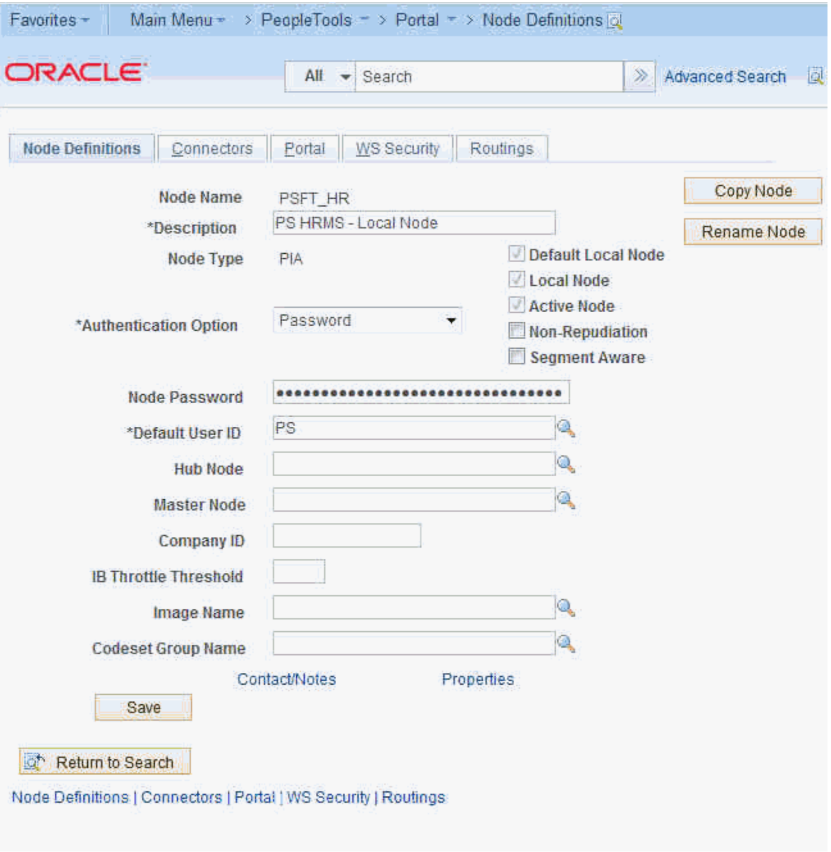

7. Check the local node definition in PeopleSoft:

   a. Navigate to **Peopletools > Portals > Node Definitions**.

      The Nodes page displays.

   b. Click **Search** and click PSFT-HR.

Figure 54–21 Node Definitions Page



Node Name	PSFT_HR
*Description	PS HRMS - Local Node
Node Type	PIA
*Authentication Option	Password
Node Password	••••••••••••••••••••••••••••••••
*Default User ID	PS
Hub Node	
Master Node	
Company ID	
IB Throttle Threshold	
Image Name	
Codeset Group Name	

☑ Default Local Node
☑ Local Node
☑ Active Node
□ Non-Repudiation
□ Segment Aware

c. Select `Password` from the **Authentication Option** drop-down list and click **Save**.

8. Continue by adding a WS-Security policy to WebCenter Portal or the Framework application as described in Section 54.5.2.3, "Attaching a WS-Security Policy to WebCenter Portal."

54.5.2.3 Attaching a WS-Security Policy to WebCenter Portal

This section describes how to attach a WS-Security policy to WebCenter Portal.

> **Note:** Before continuing with the steps below you must have configured the WebCenter and PeopleSoft key stores as described in Section 54.5.2.2, "Configuring WS-Security for PeopleTools 8.52 and Later."

- Section 54.5.2.3.1, "Configuring WSS 1.0 SAML Token with Message Integrity"
- Section 54.5.2.3.2, "Configuring WSS 1.0 Username Token Without Password"
- Section 54.5.2.3.3, "Configuring WSS 1.0 SAML Token with Message Protection"
- Section 54.5.2.3.4, "Configuring WSS 1.0 Username Token with Password"

54.5.2.3.1 Configuring WSS 1.0 SAML Token with Message Integrity Follow the steps below to configure the WSS1.0 SAML Token with Message Integrity policy for WebCenter Portal:

1. Navigate to the following directory on the PeopleSoft server:

   ```
   /home/psadm2/psft/pt/8.53/webserv/peoplesoft/piabin
   ```

   and run the following command:

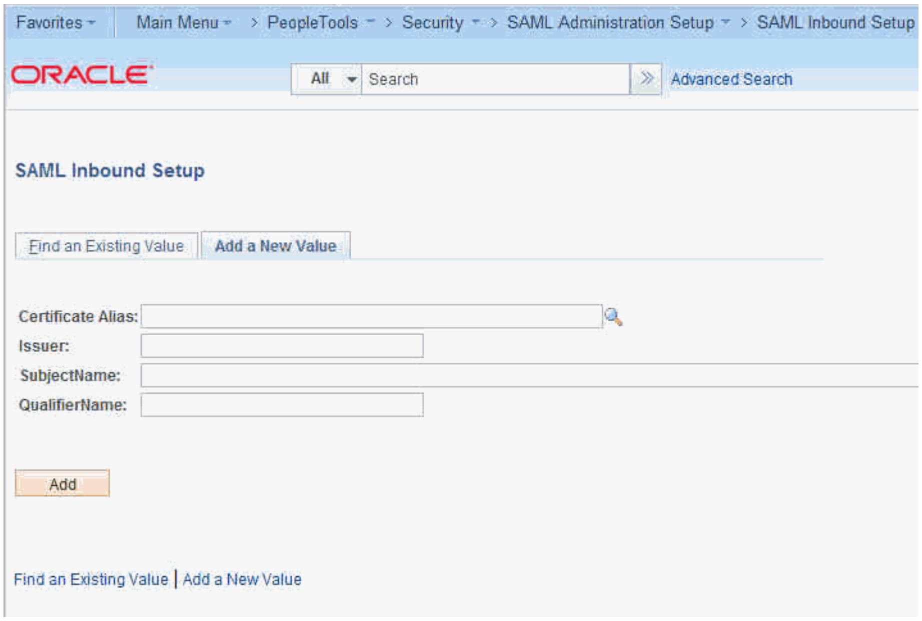
   ```
   ./redeployWSRP.sh 6
   ```

   This will update the PeopleSoft WSRP security options to use WSRPBaseService with SAMLToken Full Security.

2. In PeopleSoft, navigate to **PeopleTools > Security > SAML Administration Setup > SAML Inbound Setup**.

   The SAML Inbound Setup page displays (see Figure 54–22).

Figure 54–22 SAML Inbound Setup Page



3. Open the Add a New Value tab and map the WebCenter user with the PeopleSoft user if they use a different OID (example settings are shown below), and then click **Save**.

   Example:

   - **Certificate Alias** - orakey
   - **Issuer** - WWW.ORACLE.COM
   - **SubjectName** - pat
   - **QualifierName** - WWW.ORACLE.COM
   - **Mapping PeopleSoft UserID** - PS

4. Continue by registering the WSRP producer and adding the portlet to a portal page as shown in Section 54.5.2.4, "Integrating PeopleSoft Applications in a Portal."

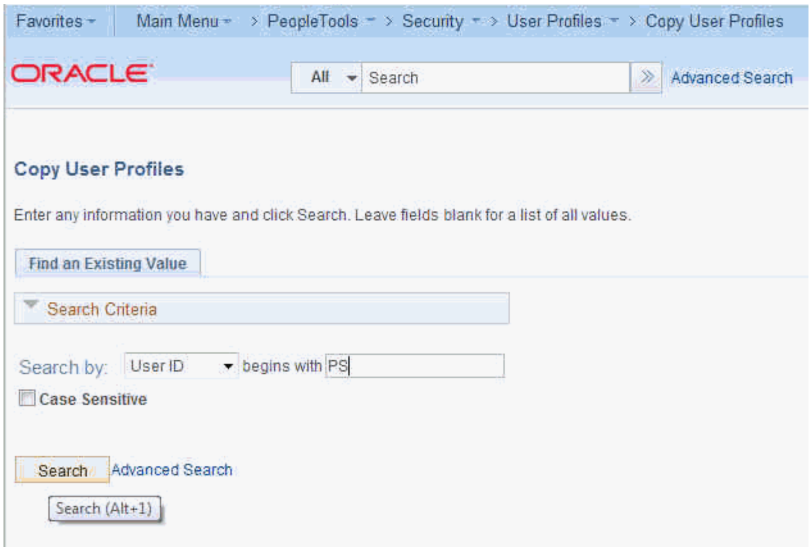
54.5.2.3.2 Configuring WSS 1.0 Username Token Without Password Follow the steps below to attach a WSS 1.0 Username Token without Password policy to WebCenter Portal.

1. Create a WebCenter user in PeopleSoft:

a. In PeopleSoft, navigate to **PeopleTools > Security > User Profiles > Copy User Profiles**.

The Copy User Profiles page displays (see Figure 54–23).

Figure 54–23 Copy User Profiles Page - Search Criteria



Copy User Profiles

Enter any information you have and click Search. Leave fields blank for a list of all values.

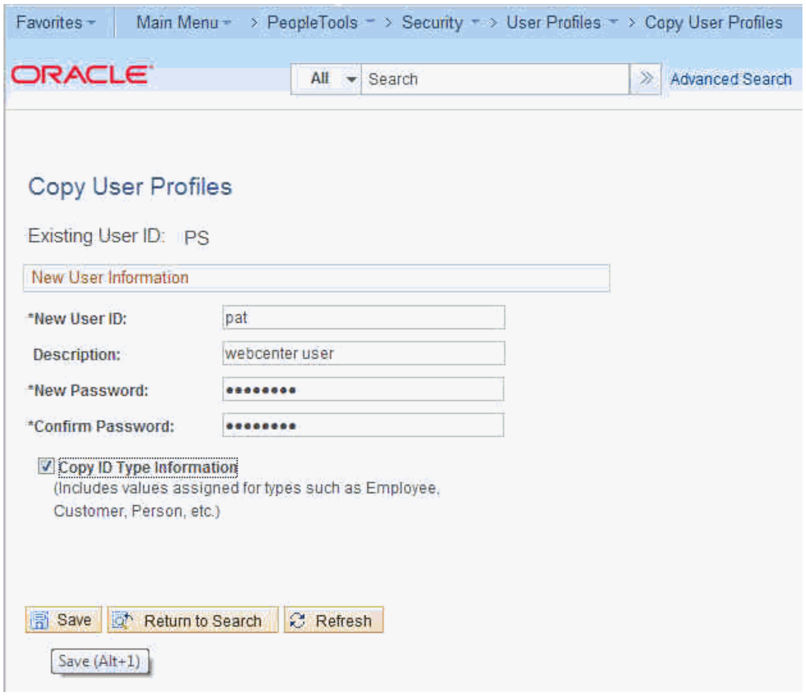
Search by: User ID begins with PS

□ Case Sensitive

b. Search for the user to add (`PS`, for example).

The search results display (see Figure 54–24).

Figure 54–24 Copy User Profiles Page - Search Results



Copy User Profiles

Existing User ID: PS

New User Information

*New User ID: pat

Description: webcenter user

*New Password: ••••••••

*Confirm Password: ••••••••

☑ Copy ID Type Information
(Includes values assigned for types such as Employee, Customer, Person, etc.)

c. Enter the **New User ID** (for example, `Pat`), a **Description**, the **New Password**, check the **Copy ID Type Information** option and click **Save**.

2. Log into Fusion Middleware Control, select the domain and navigate to **Security > Security Provider Configuration**.

   The Security Provider Configuration page displays.

3. Open the Keystore section and click **Configure**.

   The Keystore Configuration page displays.

4. Enter `./webcenter.jks` for the **KeyStore Path**, `orakey` for the **Key Alias**, `orakey` for the **Crypt Alias**. Enter the associated passwords and click **OK**.

   Note that you must restart the entire domain for the configuration changes to take effect.

5. Navigate to `/home/psadm2/psft/pt/8.53/webserv/peoplesoft/piabin` and run the following command:

   ```
   ./redeployWSRP.sh 8
   ```

   This will update the PeopleSoft WSRP security options to use WSRPBaseService with UsernameToken, No Password Full Security Option With WSS Response.

6. Continue by registering the WSRP producer and adding the portlet to a portal page as shown in Section 54.5.2.4, "Integrating PeopleSoft Applications in a Portal."

54.5.2.3.3 Configuring WSS 1.0 SAML Token with Message Protection Follow the steps below to attach the WSS1.0 SAML Token with Message Protection policy to WebCenter Portal.

1. Log into Fusion Middleware Control, select the domain and navigate to **Security > Security Provider Configuration**.

   The Security Provider Configuration page displays.

2. Open the Keystore section and click **Configure**.

   The Keystore Configuration page displays.

3. Enter `./webcenter.jks` for the **KeyStore Path**, `orakey` for the **Key Alias**, `orakey` for the **Crypt Alias**. Enter the associated passwords and click **OK**.

   Note that you must restart the entire domain for the configuration changes to take effect.

4. Navigate to `/home/psadm2/psft/pt/8.53/webserv/peoplesoft/piabin` and run the following command:

   ```
   ./redeployWSRP.sh 10
   ```

   This will update the PeopleSoft WSRP security options to use WSRPBaseService with SAMLToken Full Security Option With WSS Response.

5. Continue by registering the WSRP producer and adding the portlet to a portal page as shown in Section 54.5.2.4, "Integrating PeopleSoft Applications in a Portal."

54.5.2.3.4 Configuring WSS 1.0 Username Token with Password Follow the steps below to attach the WSS1.0 SAML Token with Message Protection policy to WebCenter Portal.

1. Log into Fusion Middleware Control, select the domain and navigate to **Security > Security Provider Configuration**.

   The Security Provider Configuration page displays.

2. Open the Keystore section and click **Configure**.

   The Keystore Configuration page displays.

3. Enter `./webcenter.jks` for the **KeyStore Path**, `orakey` for the **Key Alias**, `orakey` for the **Crypt Alias**. Enter the associated passwords and click **OK**.

   Note that you must restart the entire domain for the configuration changes to take effect.

4. Navigate to `/home/psadm2/psft/pt/8.53/webserv/peoplesoft/piabin` and run the following command:

   ```
   ./redeployWSRP.sh 7
   ```

   This will update the PeopleSoft WSRP security options to use WSRPBaseService with UsernameToken Full Security Option With WSS Response.

5. Continue by registering the WSRP producer and adding the portlet to a portal page as shown in Section 54.5.2.4, "Integrating PeopleSoft Applications in a Portal."

54.5.2.4 Integrating PeopleSoft Applications in a Portal

This section describes how to integrate a PeopleSoft application in a portal.

This section contains the following subsections:

- Section 54.5.2.4.1, "Registering the PeopleSoft WSRP Producer for a Portal"
- Section 54.5.2.4.2, "Adding the PeopleSoft Portlet to a Portal Page"
- Section 54.5.2.4.3, "Testing the Portal Portlet Connection"

54.5.2.4.1 Registering the PeopleSoft WSRP Producer for a Portal You can register the PeopleSoft WSRP producer directly in WebCenter Portal, as described in the "Registering Portlet Producers with the Administration Console" section in *Administering Oracle WebCenter Portal*. You can also register the PeopleSoft WSRP producer using Fusion Middleware Control as described in the steps below.

To register the PeopleSoft WSRP producer using Fusion Middleware Control:

1. Prepare the PeopleSoft page that you want to consume in WebCenter Portal for remote access as described in Section 54.5.2.1, "Preparing the PeopleSoft Application for Remote Access."

2. Log into Fusion Middleware Control for the WebCenter Portal domain (`wc_domain` by default).

3. Expand `WebCenter Portal` in the Navigation bar and from the WebCenter Portal menu, select **Register Producer**.

   The Add Portlet Producer page displays.

4. Set the **Producer Type** to `WSRP Producer`, enter a **Connection Name**, and paste the WSDL endpoint URL that you copied in step 1 into the **URL End Point** field.

5. If required, configure WS-Security in WebCenter Portal as described in Section 54.5.2.6, "Configuring WS-Security for PeopleTools 8.51."

6. Click **OK** and verify that the producer connection was created successfully.

7. Continue by adding the portlet to a portal page as described in Section 54.5.2.4.2, "Adding the PeopleSoft Portlet to a Portal Page."

54.5.2.4.2 Adding the PeopleSoft Portlet to a Portal Page

Follow the steps below to add the PeopleSoft portlet to a portal page.

1. Go to the page, or create a new page, where you want to add the PeopleSoft portlet.

   > **Note:** If you configured WS-Security, be sure to use the user account that was used in the SAML Inbound Setup page in PeopleSoft (see Section 54.5.2.3, "Attaching a WS-Security Policy to WebCenter Portal").

2. Open the page in edit mode, as explained in the "Opening a Page in the Page Editor (Composer)" section in *Building Portals with Oracle WebCenter Portal*.

   > **Note:** By default, the resource catalog appears inline on the page. The following instructions assume that you have not changed this default view (that is, you have not selected **Hide Catalog**).

3. In the resource catalog, select **UI Components** and then select **Portlets**.

   > **Note:** If you've created a custom catalog, **Portlets** may not appear, in which case you will need to add it to the Resource Catalog. For information about managing Resource Catalogs, see the "Working with Resource Catalogs" chapter in *Building Portals with Oracle WebCenter Portal*.

4. Click **Open** to open the Portlets catalog.
5. Click the portlet you added in Fusion Middleware Control.
6. Click **Add** for the EBS portlet you want to add to your portal page. You can also drag and drop the portlet from the inline resource catalog.
7. Click **Save** to save your changes.
8. Select the **Edit** icon for the portlet.
9. In the Component Properties dialog, select the **Display Options** tab.
10. For the Render Portlet In IFrame option, select **True**.
11. Continue by checking the portlet connection as described in Section 54.3.3.3.4, "Testing the Portal Portlet Connection."

54.5.2.4.3 Testing the Portal Portlet Connection

Use this procedure to test the portal portlet connection by modifying content and checking that the modification shows up in the PeopleSoft application.

1. On the portal page that you added the PeopleSoft portlet to, modify some information that you can verify the changes for in the PeopleSoft application.
2. Save your changes and confirm that the changes also appear in the PeopleSoft application.

54.5.2.5 Integrating PeopleSoft Applications in a Framework Application

This section describes how to create or modify a Portal Framework application that integrates with PeopleSoft Applications.

This section includes the following subsections:

- Section 54.5.2.5.1, "Registering the PeopleSoft WSRP Producer in the Framework Application"
- Section 54.5.2.5.2, "Creating the JSF Page to Consume the Remote (WSRP) Producer"
- Section 54.5.2.5.3, "Testing the Framework Application"

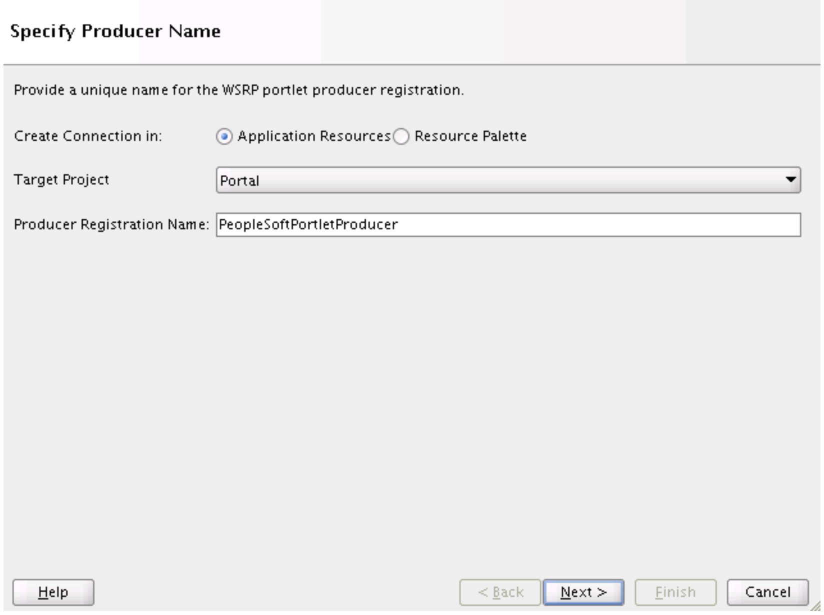
54.5.2.5.1 Registering the PeopleSoft WSRP Producer in the Framework Application Follow the instructions below to create or open an existing Portal Framework application, and register the PeopleSoft WSRP producer.

1. Use JDeveloper to create a new Framework application (using the WebCenter Portal Framework Application template) or open an existing one in which you would like to consume the remote (WSRP) PeopleSoft portlet.

2. Under Application Resources, right-click **Connection** and select **WSRP Producer**.

   Page 1 (Specify Producer Name) of the Register WSRP Portlet Producer wizard displays (see Figure 54–25).

Figure 54–25 Specify Producer Name Page



Specify Producer Name

Provide a unique name for the WSRP portlet producer registration.

Create Connection in: ● Application Resources ○ Resource Palette

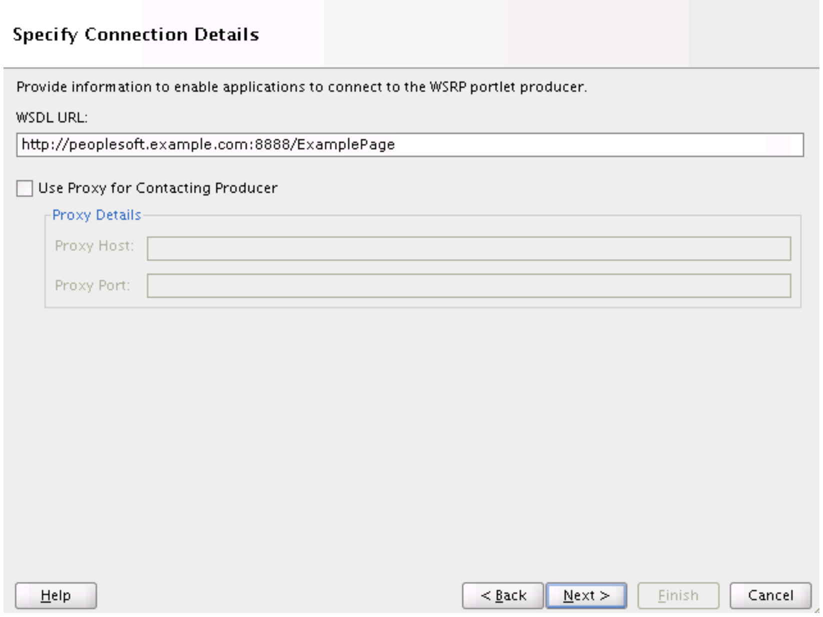
Target Project: Portal

Producer Registration Name: PeopleSoftPortletProducer

3. Enter a name for the WSRP producer and click **Next**.

   The Specify Connection Details page displays (see Figure 54–26).

Figure 54–26 Specify Connection Details



Specify Connection Details

Provide information to enable applications to connect to the WSRP portlet producer.

WSDL URL:

http://peoplesoft.example.com:8888/ExamplePage

□ Use Proxy for Contacting Producer

Proxy Details

Proxy Host:

Proxy Port:

4. Paste the WSDL (the URL you copied earlier) into the **WSDL URL** field and click **Next**.

   The Configure Security Attributes page displays.

5. If you are configuring WS-Security, continue with the steps below. Otherwise, continue with step 6.

   Note that to configure WS-Security, you must have set up the key stores and attached the policies as described in Section 54.5.2.2, "Configuring WS-Security for PeopleTools 8.52 and Later."

   a. From the Token Profile dropdown list, select the WS-Security policy to use.

   b. Set the **Configuration** option to `Custom`, the **Default User** to `weblogic`, and the **Issuer Name** to `www.oracle.com` and click **Next**.

      The Specify Keystore page displays.

   c. Enter the settings for the keystore based on the configuration settings you defined in Section 54.5.2.2, "Configuring WS-Security for PeopleTools 8.52 and Later."

6. Click **Finish**.

   The WSRP producer should now appear under Connections.

7. Continue by creating a JSF page to consume the WSRP producer as described in Section 54.5.2.5.2, "Creating the JSF Page to Consume the Remote (WSRP) Producer."

Note: Compression must be turned off in WLS to expose WSRP Portlets. Compression is enabled by default in the Producer Web Server running with Weblogic 10.3.2 and must be disabled in the Server Manager setting for compression available for each instance.

54.5.2.5.2 Creating the JSF Page to Consume the Remote (WSRP) Producer Use the following procedure to add a JSF page to consume the PeopleSoft remote producer.

To create a JSF page:

1. In the application's Navigation panel, right-click on the application name and select **New**.

   The New Gallery dialog displays.

2. In the Categories field's tree structure, locate and expand the Web Tier.

   A list with the descriptions of the available options display in the Items field.

3. From this list, select **JSF Page** and click **OK**.

   The Create JSF Page dialog displays.

4. Create the JSF page, making sure that the `Create an XML Document (*.jspx)` field is selected. For more information about setting up the JSF page, click the Help button to access the online help.
5. Click **OK**.

   The newly created JSF page displays.

6. In the Navigation panel, under Connections, expand the newly created WSRP producer and drag the portlet you created for the PeopleSoft page onto the JSF page.
7. In the Portlet Property Inspector, set the **RenderPortletInIFrame** property to `True`.
8. Add any other components that you need onto the page, and save the application.
9. Continue by running the page and testing that modifications made in the Portal Framework application appear in the PeopleSoft application as described in Section 54.5.2.5.3, "Testing the Framework Application."

54.5.2.5.3 Testing the Framework Application Use this procedure to test the Portal Framework application by modifying content on the JSF page in the Portal Framework application and checking that the modification shows up in the PeopleSoft application.

1. Run the `.jspx` page that you created.
2. In the running page, modify some information that you can verify the changes for in the PeopleSoft application.
3. Save your changes and confirm that the changes also appear in the PeopleSoft application.

54.5.2.6 Configuring WS-Security for PeopleTools 8.51

This section describes the supported OWSM policies for PeopleTools 8.51. It is important to note that PeopleTools release 8.51 does not support outgoing WS-Security headers in its messages. However, some out-of-the-box Oracle WebCenter Portal/OWSM policies require that both outgoing and incoming messages be secured. To bridge this gap you may need to create custom OWSM policies. The different integration scenarios that would require you to create custom WS-Security policies, and the steps required on the Oracle WebCenter Portal side to configure them are also described in this section.

For integration scenarios with PeopleTools 8.51, you can use WSS10 SAML Token with Message Integrity, WSS10 SAML Token with Message Protection, or WSS10 Username Token with Password as OWSM the policy.

This section includes the following subsections:

- Section 54.5.2.6.1, "Configuring WS-Security for WSS10 SAML Token with Message Integrity"
- Section 54.5.2.6.2, "Configuring WS-Security for WSS10 SAML Token with Message Protection"
- Section 54.5.2.6.3, "Configuring WS-Security for WSS10 Username Token with Password"

54.5.2.6.1 Configuring WS-Security for WSS10 SAML Token with Message Integrity (PeopleSoft policy: `WSRPBaseService with SAMLToken Full Security Option (timestamp)`)

This section describes how to configure WS-Security for the WSS10 SAML Token with Message Integrity (`oracle/wss10_saml_token_with_message_integrity_client_policy`) policy.

To configure WS-Security:

1. Configure the Oracle WebCenter Portal/OWSM keystore as shown in the chapter "Configuring WS-Security" in the *Administering Oracle WebCenter Portal*.
2. Generate a certificate containing the public key of the Oracle WebCenter Portal domain and send it to the PeopleTools administrator so it can be imported in the PeopleTools configuration.
3. When you register the producer, choose `wss10_saml_token_with_message_integrity_client_policy`.
4. Continue by adding the WSRP portlet to WebCenter Portal or a Framework application page.

54.5.2.6.2 Configuring WS-Security for WSS10 SAML Token with Message Protection (PeopleSoft policy: `WSRPBaseService with SAMLToken Full Security Option (timestamp) With WSS Response`)

The default WSS10 SAML Token with Message Protection (`oracle/wss10_saml_token_with_message_protection_client_policy`) policy that ships with OWSM requires that response also be signed and encrypted. However, PeopleTools release 8.51 and earlier cannot send WS-Security headers in response (only the initial `cookie/get portlet handle` call contains security headers; subsequent calls do not) and we therefore need to create and attach a custom policy based on the `oracle/wss10_saml_token_with_message_protection_client_policy` policy.

To create a custom policy:

1. Log into Fusion Middleware Control and navigate to the Oracle WebCenter Portal domain (`wc_domain` by default).
2. From the WebLogic Domain menu, select **Web Services > Policies**.
3. Select the `wss10_saml_token_with_message_protection_client_policy` and click **Create Like**.
4. Give the policy a new name (for example, `oracle/wss10_saml_token_with_message_protection_plaintext_response_client_policy`).
5. Open the Response tab, uncheck the **Include Entire Body** check boxes under Message Signing Setting and Message Encrypt Setting, and save the policy.
6. Check that the public certificate of the PeopleSoft keystore is imported into the keystore used in the Oracle WebCenter Portal domain.

7. Use WLST to register the producer using the newly created policy as shown in the following example:

```
registerWSRPProducer('webcenter', 'wc-pt851-saml_msg-protection',
'http://xmlns.oracle.com/pspc/pswsdl/ps/EMPLOYEE', timeout=100,
tokenType='oracle/wss10_saml_token_with_message_protection_plaintext_response_
client_policy',
enforcePolicyURI='false', issuer='www.oracle.com',
sigKeyAlias='webcenter',sigKeyPswd='welcome1', encKeyAlias='webcenter',
encKeyPswd='welcome1', recptAlias='peopleTools_public')
```

   Use the alias for the imported `peoplesft` public key as the value for the `recptAlias` parameter.

> **Note:** You must use WLST to register the producer. Fusion Middleware Control can only accept fixed policy names and therefore you must register the producer with this policy using WLST by passing in `enforcePolicyURI='false'`.

54.5.2.6.3 Configuring WS-Security for WSS10 Username Token with Password (PeopleSoft policy: `WSRPBaseService with UsernameToken Full Security Option With WSS Response`)

The default WSS10 Username Token with Password `(oracle/wss10_username_token_with_message_protection_client_policy)` policy that ships with OWSM requires that response also be signed and encrypted. However, PeopleTools release 8.51 and earlier cannot send WS-Security headers in response (only the initial `cookie/get portlet handle` call contains security headers; subsequent calls do not) and we therefore need to create and attach a custom policy based on the oracle/wss10_username_token_with_message_protection_client_policy policy.

To create a custom policy:

1. Log into Fusion Middleware Control and navigate to the Oracle WebCenter Portal domain (`wc_domain` by default).
2. From the WebLogic Domain menu, select **Web Services > Policies**.
3. Select the `wss10_username_token_with_message_protection_client_policy` and click **Create Like**.
4. Give the policy a new name (for example, `oracle/wss10_username_token_with_message_protection_plaintext_response_client_policy`).
5. Open the Response tab, uncheck the **Include Entire Body** check boxes under Message Signing Setting and Message Encrypt Setting, and save the policy.
6. Check that the public certificate of the PeopleSoft keystore is imported into the keystore used in the Oracle WebCenter Portal domain.
7. Use WLST to register the producer using the newly created policy as shown in the following example:

```
registerWSRPProducer('webcenter', '<Producer_Name>', '<URL>', timeout=100,
tokenType='oracle/wss10_username_token_with_message_protection_plaintext_
response_client_policy', extApp='<Ext_App_Name>',
enforcePolicyURI='false', issuer='www.oracle.com',
sigKeyAlias='webcenter',sigKeyPswd='welcome1', encKeyAlias='webcenter',
encKeyPswd='welcome1', recptAlias='peopleTools_public')
```

Use the alias for the imported `peoplesft` public key as the value for the `recptAlias` parameter.

> **Note:** You must use WLST to register the producer. Fusion Middleware Control can only accept fixed policy names and therefore you must register the producer with this policy using WLST by passing in `enforcePolicyURI='false'`.

54.5.3 Integrating PeopleSoft Applications as Data Controls in WebCenter Portal

This section describes how to add PeopleSoft applications as Web service data controls on portal pages.

This section includes the following subsections:

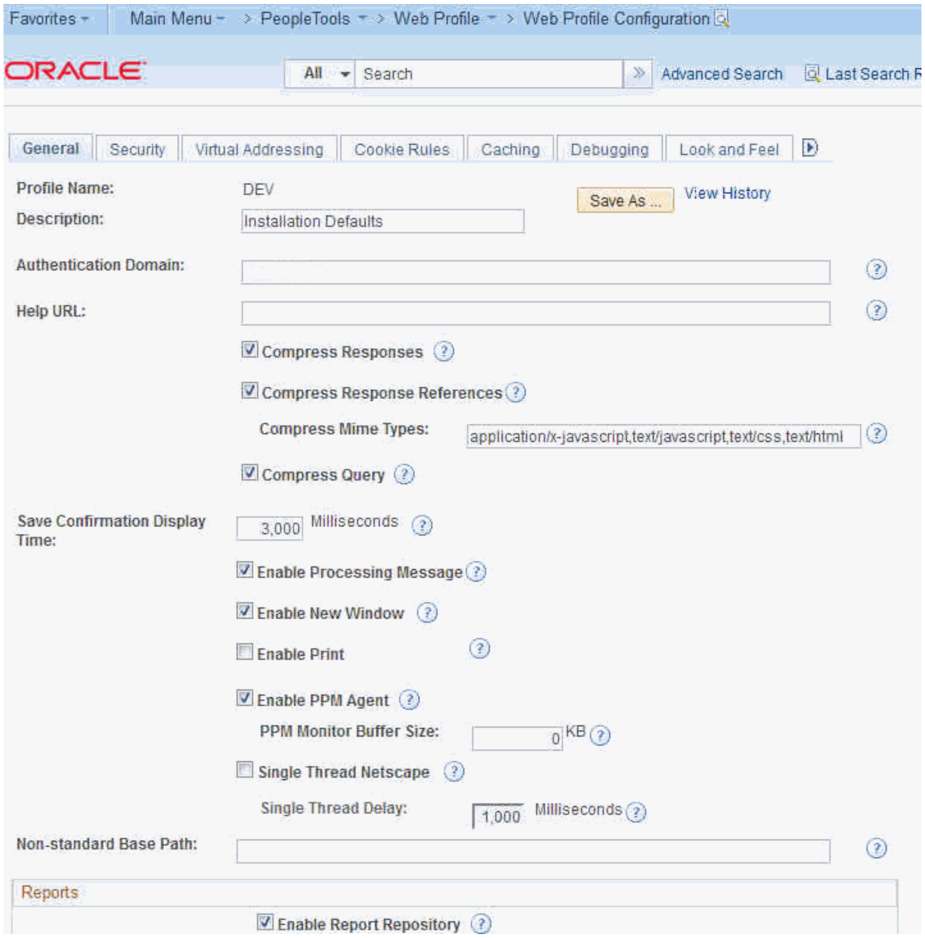
- Section 54.5.3.1, "Preparing the WSDL"
- Section 54.5.3.2, "Creating a Web Service Data Control"

54.5.3.1 Preparing the WSDL

Follow the steps below to prepare a the WSDL.

1. Log into the PeopleSoft Console as an administrator.
2. Navigate to **PeopleTools > Web Profile > Web Profile Configuration**.
3. Click **Search** and select `DEV` from the results list.

Figure 54–27 WebProfile Configuration Page



Profile Name: DEV

Description: Installation Defaults

Authentication Domain:

Help URL:

☑ Compress Responses

☑ Compress Response References

Compress Mime Types: application/x-javascript,text/javascript,text/css,text/html

☑ Compress Query

Save Confirmation Display Time: 3,000 Milliseconds

☑ Enable Processing Message

☑ Enable New Window

□ Enable Print

☑ Enable PPM Agent

PPM Monitor Buffer Size: 0 KB

□ Single Thread Netscape

Single Thread Delay: 1,000 Milliseconds

Non-standard Base Path:

☑ Enable Report Repository

4. Open the General tab and enter the **Authentication Domain** for your host.

   For example, if your host name is `ps.example.com`, enter `.example.com` in the **Authentication Domain** field.

5. Save your changes and close the application.

6. Open the `C:\Windows\System32\drivers\etc\hosts` file for editing.

7. On a new line enter the IP address and the full host name with the authentication domain.

   For example:

   ```
   193.128.1.113 ps.example.com
   ```

8. Save the file and reboot the server.

9. Log into the PeopleSoft application using the following URL:

   ```
   http://<host_name>:8000/ps/signon.html
   ```

   For example:

   ```
   http://ps.example.com:8000/ps/signon.html
   ```

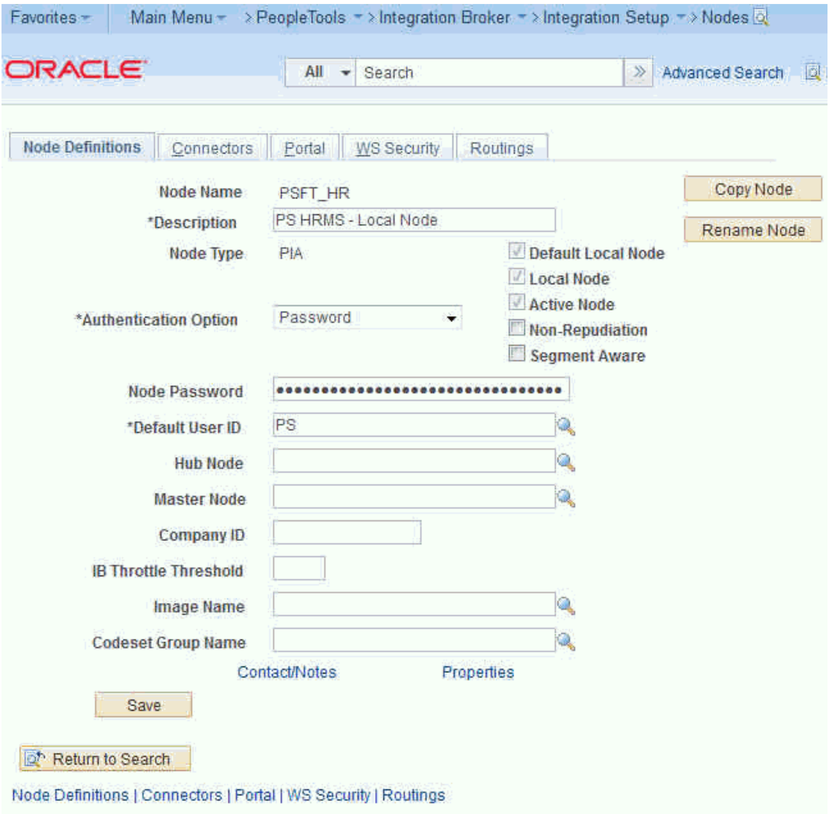
10. From the Main Menu, navigate to **PeopleTools > Integration Broker > Configuration > Gateways**.

11. Search for the **GatewayID** `LOCAL`. The Local Gateway URL is set to

```
http://<host_name>:8000/PSIGW/PeopleSoftListeningConnector
```

12. Using the Local Gateway URL, ping the gateway to make sure it's active.
13. Open the Gateway Setup Properties and log in as an administrator.
14. On the PeopleSoft Node Configuration page, check that the node being used is `PSFT_HR`.
15. Ping the node
16. From the Main Menu, navigate to **PeopleTools > Integration Broker > Configuration > Service Configuration**.
17. Open **Setup Target Locations** and check that the **Target Location** is set to `<Local Gateway URL>/PSFT_HR`.
18. From the Main Menu, navigate to **PeopleTools > Integration Broker > Integration Setup > Nodes**.
19. Click **Search**.
20. Click the **Default Local Node** `PSFT_HR`.
21. On the Nodes tab, check that the Default UserID is set correctly as in the example in Figure 54–28.

Figure 54–28 Nodes Page - Node Definitions



Node Name PSFT_HR

*Description PS HRMS - Local Node

Node Type PIA

☑ Default Local Node

☑ Local Node

☑ Active Node

□ Non-Repudiation

□ Segment Aware

*Authentication Option Password

Node Password ••••••••••••••••••••••••••••••••

*Default User ID PS

Hub Node

Master Node

Company ID

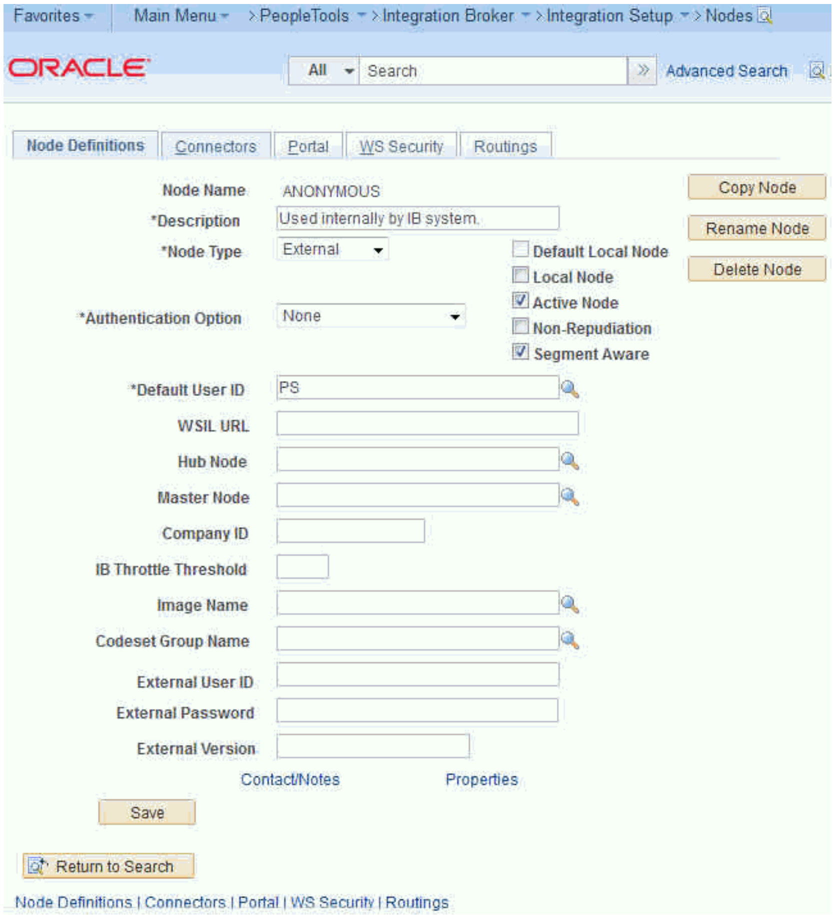
IB Throttle Threshold

Image Name

Codeset Group Name

22. Click **Return to Search**.
23. Click the **ANONYMOUS** node.
24. Change the default UserID to the PeopleSoft Login ID (for example, **PS**) as in the example in Figure 54–29.

Figure 54–29 Nodes Page - Nodes Definitions



Node Name ANONYMOUS

*Description Used internally by IB system.

*Node Type External

*Authentication Option None

☐ Default Local Node
☐ Local Node
☑ Active Node
☐ Non-Repudiation
☑ Segment Aware

*Default User ID PS

WSIL URL

Hub Node

Master Node

Company ID

IB Throttle Threshold

Image Name

Codeset Group Name

External User ID

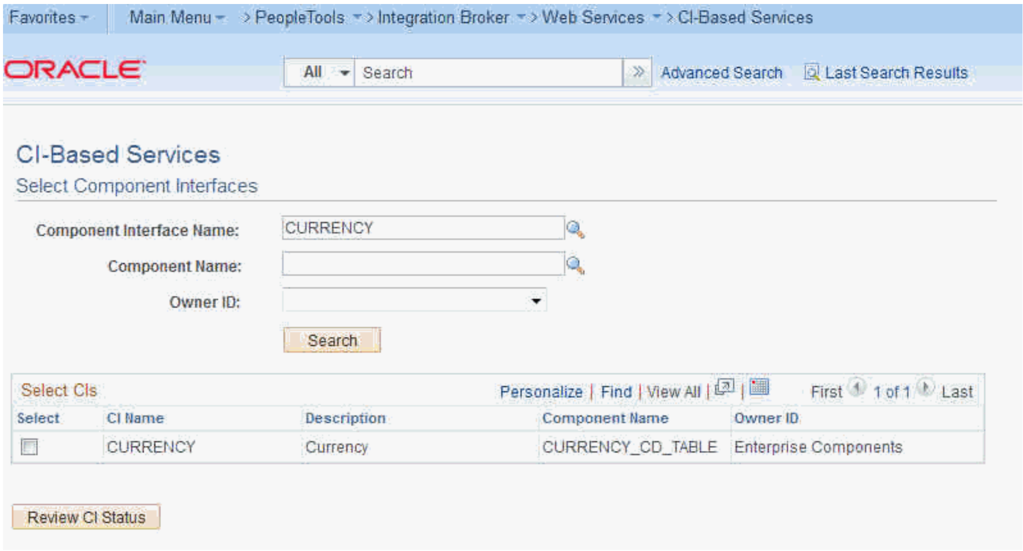
External Password

External Version

25. Save the changes and navigate to **Main Menu > PeopleTools > Integration Broker > Web Services > CI-Based Services**.

26. Search for and select the **Component Interface Name** (for example, `CURRENCY`) as in the example in Figure 54–30.

Figure 54–30 CI-Based Services Page - Select Component Interfaces



CI-Based Services

Select Component Interfaces

Component Interface Name: CURRENCY

Component Name:

Owner ID:

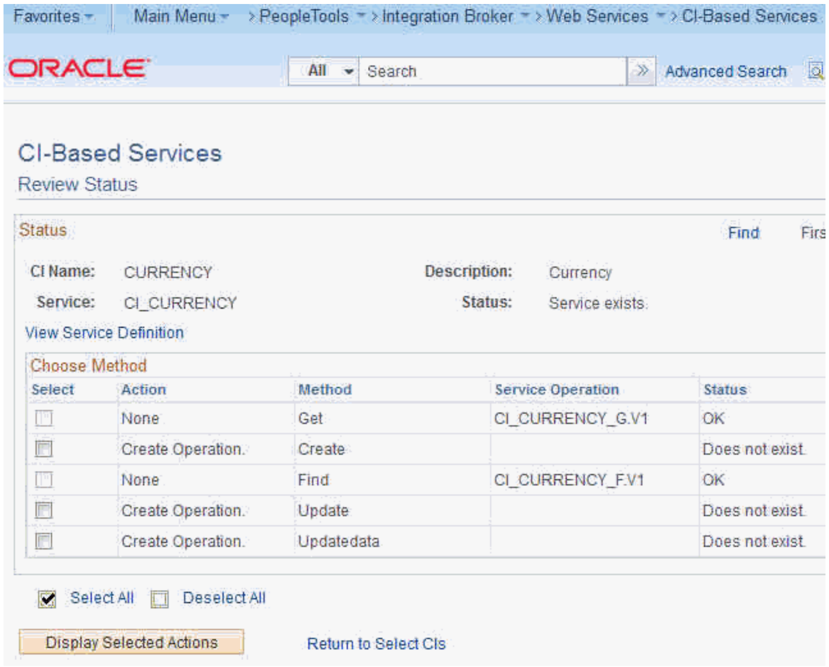
Select CIs

Select	CI Name	Description	Component Name	Owner ID
□	CURRENCY	Currency	CURRENCY_CD_TABLE	Enterprise Components

27. Click **Review CI Status**.

    The CI-Based Services - Review Status page displays (see Figure 54–31).

Figure 54–31 Review CI-Based Status - Review Status Page



CI-Based Services

Review Status

Status

CI Name: CURRENCY

Description: Currency

Service: CI_CURRENCY

Status: Service exists.

Choose Method

Select	Action	Method	Service Operation	Status
□	None	Get	CI_CURRENCY_G.V1	OK
□	Create Operation.	Create		Does not exist
□	None	Find	CI_CURRENCY_F.V1	OK
□	Create Operation.	Update		Does not exist
□	Create Operation.	Updatedata		Does not exist

☑ Select All □ Deselect All

28. Select the available methods (`Get` and `Find`, in this case) and click **Display Selected Actions**.

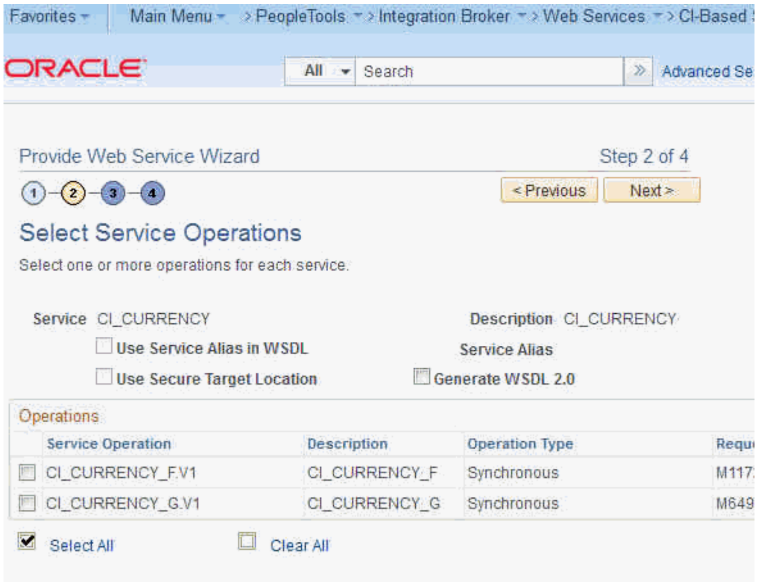
29. On the Confirm Actions dialog, click **Perform Selected** actions.

30. Click **View Service Definition**.

31. Click **Provide Web Service**.

    The Select Service Operations page displays (see Figure 54–32).

Figure 54–32 Select Service Operations Page



Provide Web Service Wizard

Step 2 of 4

Select Service Operations

Select one or more operations for each service.

Service CI_CURRENCY

Description CI_CURRENCY

□ Use Service Alias in WSDL

Service Alias

□ Use Secure Target Location

□ Generate WSDL 2.0

Operations

	Service Operation	Description	Operation Type	Requ
□	CI_CURRENCY_F.V1	CI_CURRENCY_F	Synchronous	M117
□	CI_CURRENCY_G.V1	CI_CURRENCY_G	Synchronous	M649

☑ Select All

□ Clear All

32. Select the **Select All** check box and click **Next** until you reach the last page.

33. Click **Finish** to generate the WSDL.

    You should now be able to access the WSDL URL. For this example, the URL would be:

    ```
    http://ps.example.com:8000/PSIGW/PeopleSoftServiceListeningConnector/PS
    FT_HR/CI_CURRENCY.1.wsdl\\\\
    ```

34. Continue by creating w Web service data control as shown in Section 54.5.3.2, "Creating a Web Service Data Control."

54.5.3.2 Creating a Web Service Data Control

Once you have the WSDL, you can continue by using it to create a Web service data control. In this section we'll continue with the example we started in Section 54.5.3.1, "Preparing the WSDL."

> **Note:** Before you can add a data control or task flow containing a data control to a portal page you must first have configured WS-Security for WebCenter Portal. For more information about configuring WS-Security, see the "Configuring WS-Security" chapter in *Administering Oracle WebCenter Portal*.

For more information about creating a Web service data control, see the "Creating a Web Service Data Control" section in Building Portals with Oracle WebCenter Portal. For information about Web service data controls, see also the "Web Service Data Controls" section in *Building Portals with Oracle WebCenter Portal*.

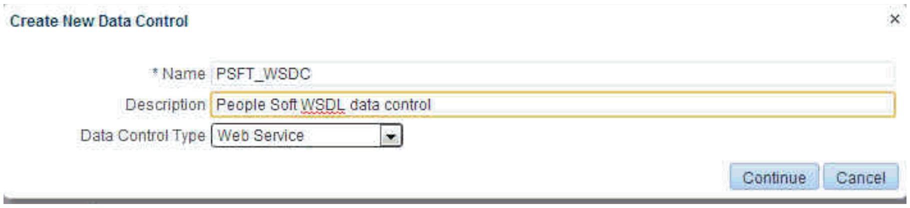
To create a Web service data control:

1. In WebCenter Portal or the portal in which you want to create the data control, go to either the **Shared Assets** or **Assets** page.

2. Select **Data Controls** and click **Create**.

   The Create New Data Control dialog displays (see Figure 54–33).

Figure 54–33 Create New Data Control Dialog



Create New Data Control

* Name: PSFT_WSDC

Description: People Soft WSDL data control

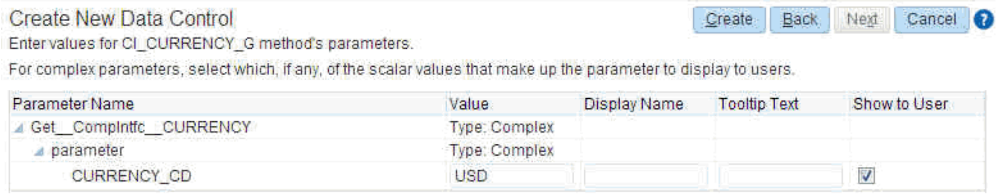
Data Control Type: Web Service

3. In the Create New Data Control dialog, enter a **Name** and **Description** for the data control, select `Web Service` as the **Data Control Type,** and then click **Continue**.
4. Enter the WSDL URL and other details for the data control and click **Continue**. For our example, the URL would be:

```
http://ps.example.com:8000/PSIGW/PeopleSoftServiceListeningConnector/PS
FT_HR/CI_CURRENCY.1.wsdl
```

5. For our example, enter the Default Value for `CURRENCY_CD` as `USD` and click **Create** (see Figure 54–34).

Figure 54–34 Create New Data Control Dialog - CI_Currency_G Method Parameters



Create New Data Control

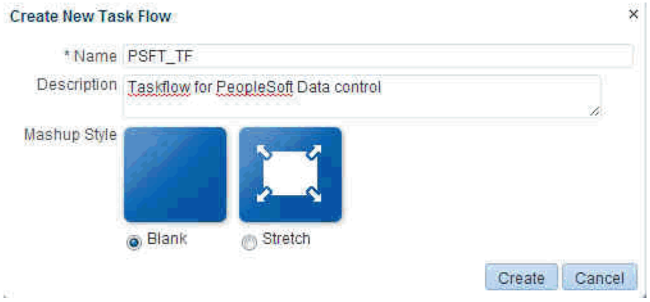
Enter values for CI_CURRENCY_G method's parameters.

For complex parameters, select which, if any, of the scalar values that make up the parameter to display to users.

Parameter Name	Value	Display Name	Tooltip Text	Show to User
◢ Get__CompIntfc__CURRENCY	Type: Complex			
◢ parameter	Type: Complex			
CURRENCY_CD	USD			☑

6. To make the data control available, from the Shared Assets or Assets page, select **Task Flows**. The Create New Task Flow dialog displays (see Figure 54–35).

Figure 54–35 Create New Task Flow Dialog



Create New Task Flow

* Name: PSFT_TF

Description: Taskflow for PeopleSoft Data control

Mashup Style: ● Blank ○ Stretch

7. Click **Create** to create the task flow.
8. Select the task flow and click the **Edit** icon.
9. Add the data control (with parameter form) as a table onto the task flow and verify the data.
10. To make the task flow available, navigate to **Administration > Business Role Pages**.
11. Select **Business Role Page** and click the **Create** icon.

12. Edit the page. and save the changes.
13. Drop the task flow onto the page and verify the data.

54.6 Integrating Oracle Business Intelligence Presentation Services

This section explains how to use JDeveloper to configure WebCenter Portal to integrate with the Oracle Business Intelligence Presentation Services catalog. At runtime, users can add business intelligence objects to their WebCenter Portal application pages. For information about adding Oracle Business Intelligence objects to Portal Framework applications, see "Embedding Business Intelligence Objects in ADF Applications" in the *Oracle Fusion Middleware Developer's Guide for Oracle Business Intelligence Enterprise Edition*.

This section includes the following subsections:

- Section 54.6.1, "Introduction to Integrating Oracle Business Intelligence Presentation Services"
- Section 54.6.2, "Configuring Credentials for Connecting to the Oracle BI Presentation Catalog"
- Section 54.6.3, "Integrating Oracle Business Intelligence Objects in WebCenter Portal"

54.6.1 Introduction to Integrating Oracle Business Intelligence Presentation Services

This section explains how you use JDeveloper to configure WebCenter Portal to integrate with the Oracle Business Intelligence Presentation Services catalog. For information about adding Oracle Business Intelligence objects to Portal Framework applications, see "Embedding Business Intelligence Objects in ADF Applications" in the *Oracle Fusion Middleware Developer's Guide for Oracle Business Intelligence Enterprise Edition*.

This section includes the following subsections:

- Section 54.6.1.1, "Understanding Oracle Business Intelligence Presentation Services Integration"
- Section 54.6.1.2, "Requirements for Integrating Oracle Business Intelligence Presentation Services"

54.6.1.1 Understanding Oracle Business Intelligence Presentation Services Integration

You can use JDeveloper to create Portal Framework applications that integrate with Oracle Business Intelligence Presentation Services. At runtime, these applications include the Presentation Services catalog in the WebCenter Portal - Resource catalog. Users can then browse for and add business intelligence analyses, dashboard pages, dashboards, or scorecard components (strategy maps, strategy trees, KPI watchlists, cause and effect maps, and custom views) to their Portal Framework application pages. Any filters, prompts, and actions links included in the Business Intelligence objects will work within the Portal Framework application or portal pages.

At runtime, Oracle WebCenter Portal users can expand and browse the Presentation Services catalog's folders to view an analysis' views. The following view types display in the Presentation Services catalog: table, pivot table, chart, funnel chart, gauge, narrative, ticker and title. The following view types do not display in the Presentation Services catalog: view selector, column selector, logical SQL, and no-results view.

Users can also browse the dashboard folder for the pages associated with the dashboard; however, users cannot browse within the dashboard pages to see their components (for example, any analyses embedded in the dashboard). Users cannot include entire Scorecards (only a Scorecard's components) in their Portal Framework application pages.

54.6.1.2 Requirements for Integrating Oracle Business Intelligence Presentation Services

To create a Portal Framework application that integrates with Oracle Business Intelligence Presentation Services, you must have installed Oracle JDeveloper 11g Release 1 (11.1.1.6) or later and the required Oracle BI EE and WebCenter Portal extensions.

To properly create the Portal Framework application, you must configure the library settings, update the `weblogic.xml` and `weblogic-application.xml` files, and have properly configured security.

For both Portal Framework applications and portals, you must also set up a connection to the BI application as well as configuring security as described in the "Creating an Oracle BI EE Presentation Services Connection" section in *Oracle Fusion Middleware Developer's Guide for Oracle Business Intelligence Enterprise Edition*. You will also need to specify the credentials for the connection, as described in Section 54.6.2, "Configuring Credentials for Connecting to the Oracle BI Presentation Catalog."

The following prerequisites apply:

Oracle WebCenter Portal

- The `WC_Spaces` server has been installed and configured, including the database connection, Content Server connection, and Fusion Middleware Control

OBIEE

- Oracle Business Intelligence Applications
- OBI Enterprise Edition version 11.1.1.7.0
- OBI Applications version 7.9.6.3 (Optional)
- OBIEE is already installed, configured, and up and running (Database – OBI Enterprise Edition)
- OBI Applications is installed and set up and all content is available from the OBIEE environment (Optional)

Security

The OBIEE integration requires that the identity store user name population be the same across WebCenter and OBIEE. This can be done by either:

- Having WebCenter and OBIEE share the same identity store (recommended)
- Maintaining identical user names across separate WC and OBIEE identity stores

54.6.1.3 Advanced Integration Options

The sections below focus on adding resources such as business intelligence analyses, dashboards, and scorecard components that can be easily dropped onto a page. As well as these approaches, there are also options for using Web services and BI EE Logical SQL view object to embed business intelligence data into a Framework application. For more information about using Web services, see the "Introduction to Oracle Business Intelligence Web Services" section in *Oracle Fusion Middleware*

Integrator's Guide for Oracle Business Intelligence Enterprise Edition. For more information about using the BI EE Logical SQL view object, see the "Using the Oracle BI EE Logical SQL View Object" section in *Oracle Fusion Middleware Developer's Guide for Oracle Business Intelligence Enterprise Edition*.

54.6.2 Configuring Credentials for Connecting to the Oracle BI Presentation Catalog

At design time, you need to specify credentials to connect to the Oracle BI Presentation Catalog. These credentials are used to retrieve the list of business intelligence objects (for example, analyses, dashboards, and scorecard components) from the Oracle BI Presentation Catalog.

This process ensures that the login to the Presentation Server is the same as the current user of the application and any access checks are performed as the current user, and data is fetched as the current user. If the ADF page contains business intelligence objects to which the user does not have access, the ADF page returns a message stating that the user does not have the proper permissions to access these objects.

Note that the **Perform impersonation** parameter should be set to `true` when security is enabled.

This section contains the following subsections:

- Section 54.6.2.1, "Checking for the BIImpersonatorUser"
- Section 54.6.2.2, "Creating the BIImpersonatorUser"
- Section 54.6.2.3, "Granting Permissions to BIImpersonatorUser"

54.6.2.1 Checking for the BIImpersonatorUser

Use the following steps to check if a BIImpersonatorUser user already exists, and that the roles assigned to it are correct:

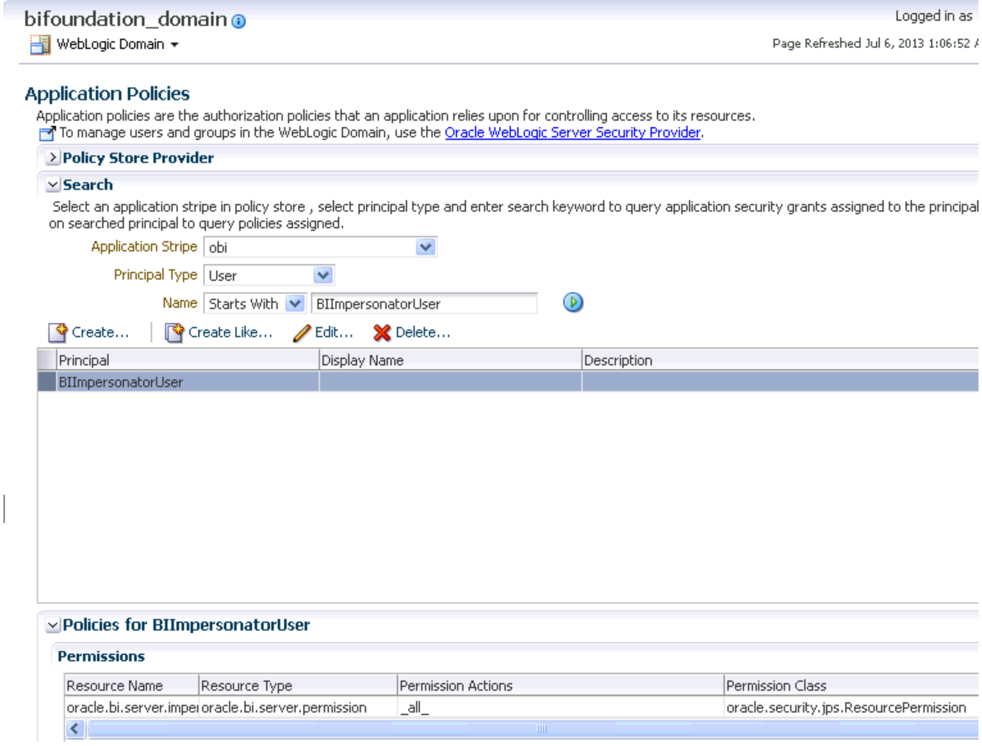
1. Open WLS Administration Console for your Oracle BI EE instance using an Administrator account.
2. Locate the Domain Structure pane and select Security Realm.

   The Realms pane displays.
3. In the Realms pane, select **<myrealm>**.

   The Settings dialog displays.
4. In the Settings dialog, open the Users and Groups tab.
5. Check that BIImpersonatorUser appears in the list of users.

   If the BIImpersonatorUser does not appear in the list, continue by creating the BIImpersonatorUser as shown in Section 54.6.2.2, "Creating the BIImpersonatorUser."
6. Log into Fusion Middleware Control with an administrator account.
7. In the Navigation panel, expand the `Weblogic Domain` node and select `bifoundation_domain`.
8. From the **Weblogic Domain** menu, select **Security > Application Policies**.
9. On the Application Policies page under Search, choose **obi** from the **Application Stripe** dropdown list.
10. From the **Principal Type** drop down list, select `User`.
11. In the **Name** field, enter `BIImpersonatorUser` and start the search (Figure 54–36).

Figure 54–36 Application Policies Pane - bifoundation_domain



bifoundation_domain

WebLogic Domain ▾

Logged in as

Page Refreshed Jul 6, 2013 1:06:52 A

Application Policies

Application policies are the authorization policies that an application relies upon for controlling access to its resources.

To manage users and groups in the WebLogic Domain, use the Oracle WebLogic Server Security Provider.

Policy Store Provider

Search

Select an application stripe in policy store , select principal type and enter search keyword to query application security grants assigned to the principal on searched principal to query policies assigned.

Application Stripe: obi

Principal Type: User

Name: Starts With BIImpersonatorUser

Create... | Create Like... | Edit... | Delete...

Principal	Display Name	Description
BIImpersonatorUser		

Policies for BIImpersonatorUser

Permissions

Resource Name	Resource Type	Permission Actions	Permission Class
oracle.bi.server.impe	oracle.bi.server.permission	_all_	oracle.security.jps.ResourcePermission

12. If found, check that:

    - **Resource Name** = `oracle.bi.server.impersonatorUser`
    - **Resource Type** = `oracle.bi.server.permission`
    - **Permission Actions = _all_**
    - **Permission Class** = `oracle.security.jps.ResourcePermission`

13. If the BIImpersonatorUser is not found, continue by adding permissions for the BIImpersonatorUser as shown in Section 54.6.2.3, "Granting Permissions to BIImpersonatorUser."

54.6.2.2 Creating the BIImpersonatorUser

Use the following procedures to create a BIImpersonatorUser user to secure an application that uses an Oracle BI EE Presentation Services connection and includes Oracle BI EE objects. ADF security must be enabled for your application before you can apply the impersonator user credentials to the Oracle BI EE Presentation Services connection.

The Impersonate User feature secures applications that contain Oracle BI EE objects when Oracle BI EE and ADF are not sharing an Oracle Internet Directory (OID). Before you begin the process of creating and using Impersonate User, you must confirm that this capability is configured in your environment.

Before you perform this procedure, make sure that either you or the Administrator have created users in the WebLogic Server's Oracle BI EE realm and assigned the BIConsumer group to each user in this realm. For more information, see "How to Create and Use Impersonate User" in the *Oracle Fusion Middleware Developer's Guide for Oracle Business Intelligence Enterprise Edition*.

Follow the steps below to create the BIImpersonatorUser user:

1. Open WLS Administration Console for your Oracle BI EE instance using an Administrator account.
2. Locate the Domain Structure pane and select Security Realm.

   The Realms pane displays.
3. In the Realms pane, select **<myrealm>**.

   The Settings dialog displays.
4. In the Settings dialog, open the Users and Groups tab.
5. Confirm that the Users tab is displaying and click **New**.
6. Enter `BIImpersonatorUser` for the user name and enter a password.
7. Click **OK**.

54.6.2.3 Granting Permissions to BIImpersonatorUser

Follow the steps below to use Fusion Middleware Control to grant permissions to BIImpersonatorUser:

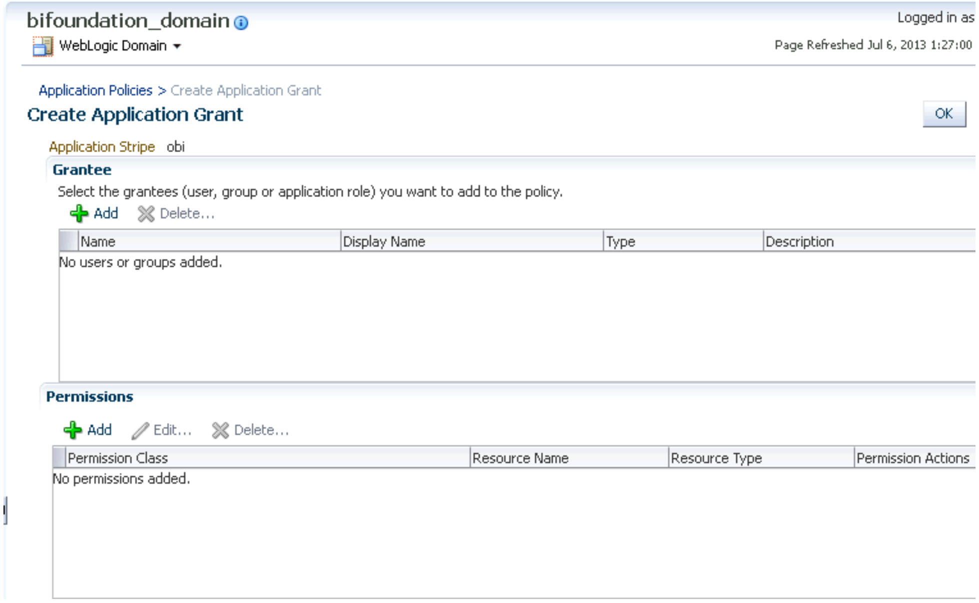
1. Open Fusion Middleware Control for your Oracle BI EE instance.
2. In the Navigation panel, expand the `Weblogic Domain` node and select `bifoundation_domain`.

   The `bifoundation_domain` pane displays.
3. In the `bifoundation_domain` pane, open the **WebLogic Domain** menu and select **Security > Application Policies**.

   The Search pane displays.
4. On the Application Policies page under Search, choose **obi** from the Application Stripe dropdown list.
5. Click **Create**.

   The Create Application Grant pane displays (Figure 54–37).

Figure 54–37 Create Application Grant Pane



Select the grantees (user, group or application role) you want to add to the policy.

Name	Display Name	Type	Description
No users or groups added.			

Permission Class	Resource Name	Resource Type	Permission Actions
No permissions added.			

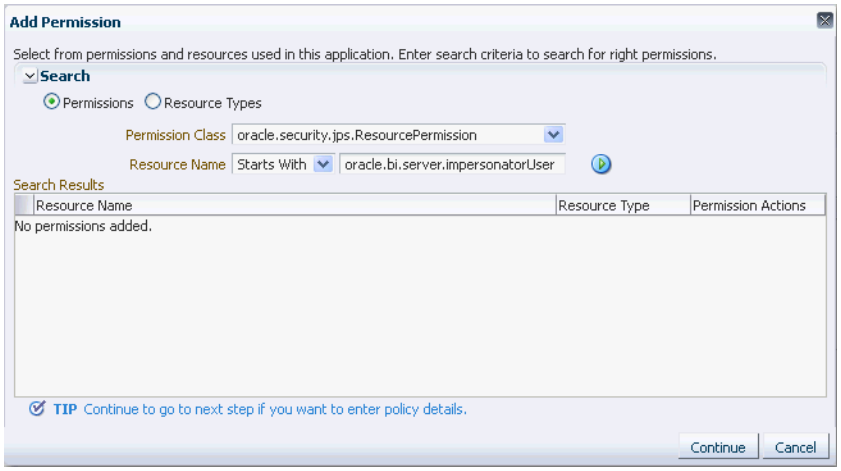
6. Under Grantees, click **Add**.

   The Add Principal dialog displays.

7. From the **Type** drop down list, select `User`.
8. In the **Principal Name** field, enter `BIImpersonatorUser` and click **OK**.
9. Under Permissions, click **Add**.

   The Add Permission dialog displays (Figure 54–38).

Figure 54–38 Add Permission Dialog



Add Permission

Select from permissions and resources used in this application. Enter search criteria to search for right permissions.

Search

● Permissions ○ Resource Types

Permission Class: oracle.security.jps.ResourcePermission

Resource Name: Starts With oracle.bi.server.impersonatorUser

Search Results

Resource Name	Resource Type	Permission Actions
No permissions added.		

TIP Continue to go to next step if you want to enter policy details.

10. Select **Permissions** and in the **Permission Class** field, enter `oracle.security.jps.ResourcePermission`.
11. In the **Resource Name** field, enter `oracle.bi.server.impersonatorUser`, start the search and then click **Continue**.

    Note that since we selected only **Permissions**, you may see an error message complaining that the resource type is missing (i.e., `oracle.bi.server.permission`). In that case, select **Resource Types** in the Add Permissions dialog and choose the appropriate one.

12. Click **Select**.
13. On the Application Grant page, click **OK**.
14. If the changes that you made do not display, stop and restart the following servers:
    - Oracle BI EE Server
    - Oracle BI EE Presentation Server
    - WebLogic Server

54.6.3 Integrating Oracle Business Intelligence Objects in WebCenter Portal

This section describes how to configure WebCenter Portal integration with BI objects. For information about adding Oracle Business Intelligence objects to Portal Framework applications, see "Embedding Business Intelligence Objects in ADF Applications" in the *Oracle Fusion Middleware Developer's Guide for Oracle Business Intelligence Enterprise Edition*.

- Section 54.6.3.1, "Adding or Modifying a Presentation Services Connection After Deployment"

- Section 54.6.3.2, "Adding Oracle BI Objects to the WebCenter Portal Resource Catalog"
- Section 54.6.3.3, "Adding Oracle BI Content at Runtime"
- Section 54.6.3.4, "Modifying a Business Intelligence Object's Prompt Values"
- Section 54.6.3.5, "Modifying a Business Intelligence Task Flow's Initialization Parameters"

54.6.3.1 Adding or Modifying a Presentation Services Connection After Deployment

Before you can begin integrating BI objects in WebCenter Portal, you must first configure a connection from WebCenter Portal to the BI server. Oracle BI EE provides an ADF MBean that lets you add a new connection to a deployed portal or BI ADF application. You can also modify a deployed application's existing connection. MBeans are deployed with the application and can be accessed post-deployment using Fusion Middleware Control.

Prior to following the steps below, you should already have followed the steps in Section 54.6.2, "Configuring Credentials for Connecting to the Oracle BI Presentation Catalog" to specify credentials to connect to the Oracle BI Presentation Catalog.

> **Note:** If the portal and the Oracle Business Intelligence application do not share the same identity store, you must create the relevant users in both systems.

Follow the steps below to configure the connection after the application was deployed.

1. Open Fusion Middleware Control and select your WebLogic domain by doing one of the following:
   - If your application is deployed in the BI ADF domain, select the **Application Deployments <your domain>** tree node.
   - If your application is deployed in the WebCenter Portal domain, select the **WebCenter** tree node, and then the **WebCenter Portal** tree node, and then the **webcenter(11.1.1.4.0)** (**WC_Spaces**) tree node. Note that the `WC_Spaces` server must be running in order to perform this step.
2. From the list, select **System MBean Browser**.

   The System MBean Browser pane displays.
3. In the System MBean Browser pane, navigate to the ADF Connections tree node by following the below path:

   a. Select the **Application Defined MBeans** tree node.

   b. Select the **oracle.adf.share.connections** tree node.

   c. Select the **Server: <my server name>** tree node.

      For example, `Server:DefaultServer` or `Server:WC_Spaces`.

   d. Select the **Application:<your application's name>** tree node.

      For example, `Application:Application2` or `Application:webcenter`.

   e. Open the ADF Connections tree node.

   f. Open the child ADF Connections tree node.

The corresponding MBean information displays in the Application Defined MBean pane.

4. In the Application Defined MBean pane, open the Operations tab and then click **createConnection** to create a Presentation Services connection.

   The Operation:createConnection dialog displays.

5. Specify the required values for the connection.

   In the connection type **Value** field, enter `BISoapConnection`, enter a name in the connection name **Value** field and click **Invoke** to create the connection.

   > **Note:** The connection name is case sensitive. For SSO to work, the connection name and SSO account name must match exactly.

6. In the System MBean Browser pane, click **Refresh** to refresh the tree so that the new connection displays.

7. To modify the connection, locate it in the System MBean Browser pane and click it.

   The connection's information displays in the Application Defined MBean pane.

8. Navigate to ADF Connections from the System MBean Browser pane and open the Attributes tab.

9. Enter the `BISoap` connection information as shown below, and then click **Apply** to apply your changes.

   - From the OBIEE URL to the login page you need:

     ```
     context = analytics
     host = <host name>
     port = 7001 or the local value
     protocol = HTTP
     ```

   - From BIImpersonatorUser you need:

     ```
     username = BIImpersonatorUser
     password = <password>
     ```

10. Click on the ADFConnections folder in the Navigation pane, open the Operations tab, and then click **Save** to save the connection.

11. When you click **Invoke**, you should get the following message:

    ```
    "Confirmation Operation executed successfully."
    ```

54.6.3.2 Adding Oracle BI Objects to the WebCenter Portal Resource Catalog

Before you can add Oracle BI content to a portal page, you must add objects stored in the Oracle BI Presentation Catalog to the WebCenter Portal Resource Catalog.

1. Log into WebCenter Portal as an administrator.

2. In WebCenter Portal, click **Administration**.

   The Administration page displays.

3. Open the **Shared Assets** tab and click **Resource Catalogs**.

4. Click **Create**.

5. In the **Name** field, enter the name of the catalog you are creating. Complete the other fields on this dialog, as necessary.

6. Make the Resource Catalog available by checking its **Available** check box.
7. Select the new resource catalog and click **Edit**.
8. Select the **Add** menu and then choose **Add From Library....**.
9. Double-click **Connections**.

   The BI Presentation Services folder displays.
10. Open this folder to display the Oracle BI objects and browse to and select the objects that you want to add.
11. Click **Add** to add the selected objects to the catalog.

    Continue by adding the object to a Framework application. For more information about managing resource catalogs at runtime, see the "Working with resource catalogs" section in *Building Portals with Oracle WebCenter Portal*. For information about managing Resource Catalogs in JDeveloper, see Chapter 14, "Developing Resource Catalogs."

54.6.3.3 Adding Oracle BI Content at Runtime

Use this procedure to create a portal page and add Oracle BI objects to it. Before you perform this procedure, you must have added Oracle BI objects to the WebCenter Portal Resource Catalog.

1. Log into WebCenter Portal and create a new portal or access an existing portal.
2. Make the Resource Catalog the default catalog for the portal.
   a. From the Pages and Portals dropdown list, select **Manage** > **Settings** and under Assets, select the catalog created in Section 54.6.3.2, "Adding Oracle BI Objects to the WebCenter Portal Resource Catalog" as the default resource catalog for **Pages**.
   b. Click **Save**.
3. From the Pages and Portals dropdown list, select **Create** > **Page**.
4. Browse to the folder containing the Oracle BI objects.
5. Select an analysis or dashboard and click **Add**.

   The object that you selected is added to the page.

54.6.3.4 Modifying a Business Intelligence Object's Prompt Values

Use this procedure to test the portal page by changing an analysis or dashboard's filter or prompt values.

1. Open the page that you created.
2. In the running page, click **Page Actions** and then click the **Edit** link to enter edit mode.
3. Add an analysis or dashboard that contains a filter or prompt. For more information about adding Oracle BI objects to the page, see Section 54.6.3.3, "Adding Oracle BI Content at Runtime."
4. Without exiting the edit mode of the page, save the portal page.
5. In the portal page, modify the prompt values and click **OK**.
6. Exit edit mode, save the page and confirm that the application correctly applied the prompt values.

54.6.3.5 Modifying a Business Intelligence Task Flow's Initialization Parameters

Use the following procedure to test the business intelligence task flow's initialization parameters.

1. Open the page that you created.
2. In the running page, click **Page Actions** and then click the **Edit** link to enter the edit mode.
3. Add an analysis or dashboard that is part of a task flow. For more information about adding business intelligence content to the `.jspx` page, see Section 54.6.3.3, "Adding Oracle BI Content at Runtime."
4. Without exiting the edit mode for the page, save the portal page.
5. Locate the business intelligence object and click the **Edit** (wrench) icon.

   The Component Properties dialog displays.
6. On the portal page, open the **Parameters** tab and modify the object's parameters and click **OK**.
7. Open the Parameters tab, modify the object's parameters, and click **OK**.
8. Exit edit mode, save the page and confirm that the application correctly applied the modified parameter values.

55

Developing Components for WebCenter Portal Using JDeveloper

This chapter describes how a developer can leverage JDeveloper to develop components that can be deployed and used in WebCenter Portal. Components can be ADF task flows, data controls, managed beans, and other assets such as skins, page styles, task flow styles, page templates, content present display templates, navigations, and resource catalogs.

Out-of-the-box, WebCenter Portal provides tools targeted at knowledge workers and developers to quickly and easily create portals, intranets, extranets, and self-service applications that offer users a more effective and efficient way to access and interact with information, business applications, and process. WebCenter Portal can be customized using browser-based tools and also using JDeveloper.

This chapter includes the following sections:

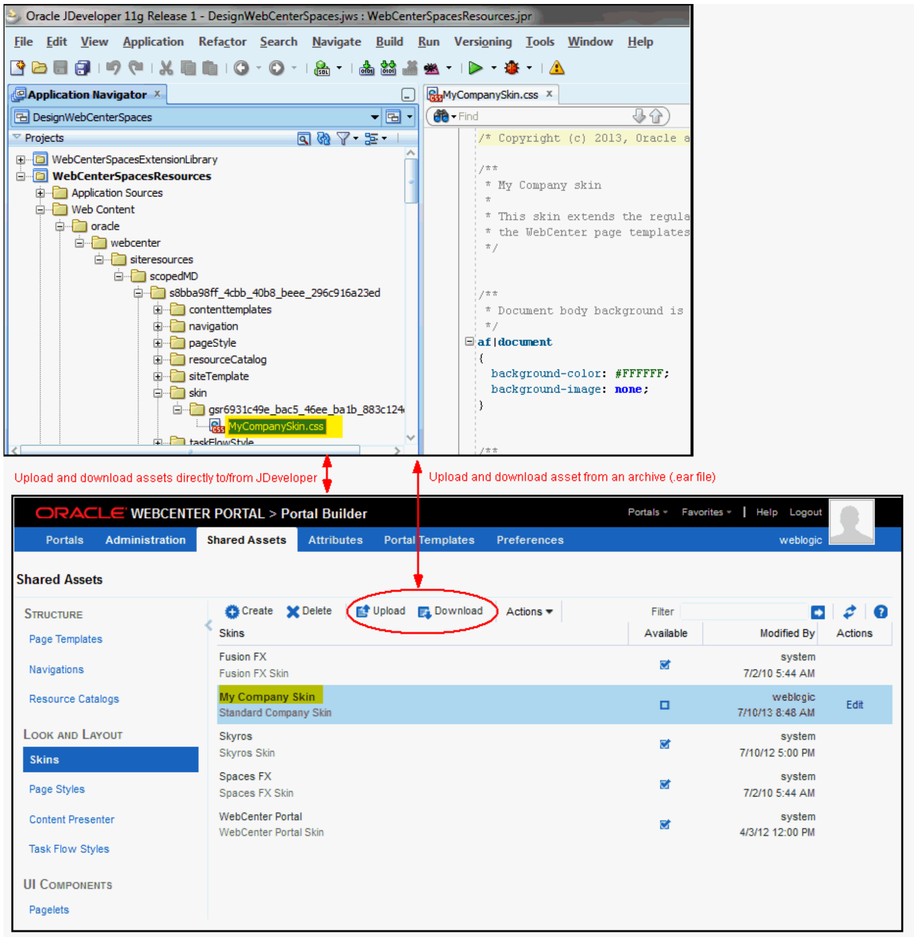
55.1 Developing Assets for WebCenter Portal

This section includes the following subsections:

55.1.1 About the WebCenterSpacesResources Project

WebCenter Portal's round-trip development features provide a simple, convenient way to create and modify WebCenter Portal assets without redeploying the entire application. Round-trip development refers to features and techniques that allow you to download assets from WebCenter Portal and upload them to JDeveloper for maintenance or enhancement. Once modified, you can upload the asset back to WebCenter Portal for immediate use or for testing (see Figure 55–1).

Figure 55–1 Round-Trip Asset Development Using the WebCenterSpacesResources Project



Oracle JDeveloper 11g Release 1 - DesignWebCenterSpaces.jws : WebCenterSpacesResources.jpr
File Edit View Application Refactor Search Navigate Build Run Versioning Tools Window Help
Application Navigator
DesignWebCenterSpaces
Projects
WebCenterSpacesExtensionLibrary
WebCenterSpacesResources
Application Sources
Web Content
oracle
webcenter
siteresources
scopedMD
s8bba98ff_4cbb_40b8_beee_296c916a23ed
contenttemplates
navigation
pageStyle
resourceCatalog
siteTemplate
skin
gsr6931c49e_bac5_46ee_ba1b_883c124
MyCompanySkin.css
taskFlowStyle
MyCompanySkin.css
Find

```
/* Copyright (c) 2013, Oracle a

/**
 * My Company skin
 *
 * This skin extends the regula
 * the WebCenter page templates
 */


/**
 * Document body background is
 */
af|document
{
  background-color: #FFFFFF;
  background-image: none;
}


/**
```

Upload and download assets directly to/from JDeveloper

Upload and download asset from an archive (.ear file)

ORACLE WEBCENTER PORTAL > Portal Builder
Portals Favorites | Help Logout
Portals Administration Shared Assets Attributes Portal Templates Preferences
weblogic
Shared Assets
Structure
Page Templates
Navigations
Resource Catalogs
Look and Layout
Skins
Page Styles
Content Presenter
Task Flow Styles
UI Components
Pagelets
Create Delete Upload Download Actions
Filter

Skins	Available	Modified By	Actions
Fusion FX Fusion FX Skin	☑	system 7/2/10 5:44 AM	
My Company Skin Standard Company Skin	□	weblogic 7/10/13 8:48 AM	Edit
Skyros Skyros Skin	☑	system 7/10/12 5:00 PM	
Spaces FX Spaces FX Skin	☑	system 7/2/10 5:44 AM	
WebCenter Portal WebCenter Portal Skin	☑	system 4/3/12 12:00 PM	

Out-of-the-box, WebCenter Portal provides some default assets, such as skins and page templates, for people to use or modify. If your asset requirements extend beyond the browser-based editing capabilities of Portal Builder, you can further develop assets using the JDeveloper project *WebCenterSpacesResources* (available as a download from OTN). This project provides everything you need to create, modify, and upload the following WebCenter Portal assets:

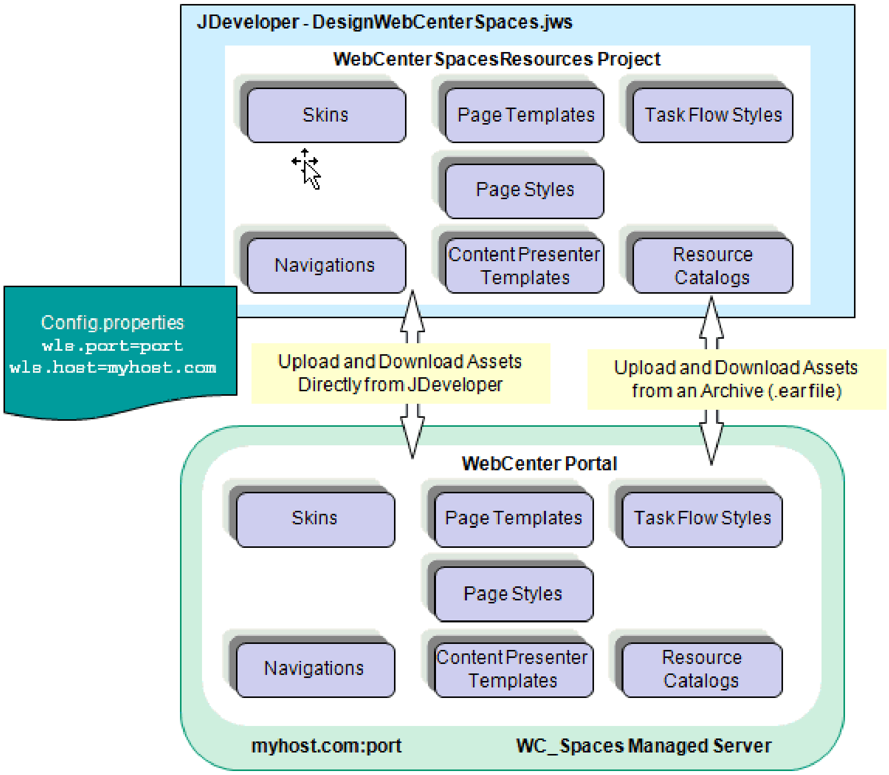
- Page templates
- Navigations
- Page styles
- Skins
- Content Presenter display templates
- Resource catalogs
- Task flow styles

Note: This chapter describes how to manage asset customizations through the *WebCenterSpacesResources* project. For information on how to build/develop assets, see Section 55.1.5.4, "How to Build Assets for WebCenter Portal".

When you are ready to deploy asset customizations, you can upload them directly to a live WebCenter Portal application simply by providing JDeveloper with the name of the host and port where WebCenter Portal is running.

Alternatively, you can log in to WebCenter Portal and upload the asset through the relevant asset management page. If you decide to use this method you must save the asset to an export archive (`.ear` file) as shown in Figure 55–2.

Figure 55–2 Developing Assets Using the WebCenterSpacesResources Project



55.1.2 Setting Up Your JDeveloper Environment for Asset Development

Before you start, complete the following steps:

1. Download and install Oracle JDeveloper 11g (11.1.1.9.0).

   For details, see Section 2.2.1, "Installing Oracle JDeveloper".

2. Install the WebCenter Portal Extension for JDeveloper (11.1.1.9.0).

   For details, see Section 2.2.2, "Installing the WebCenter Portal Extension for JDeveloper".

3. Download the WebCenter Portal asset development ZIP file (`DesignWebCenterSpaces_11.1.1.9.0.zip`) from Oracle Technology Network:

http://download.oracle.com/otndocs/tech/webcenter/files/DesignWebCenterSpaces_11.1.1.9.0.zip

4. Unzip the content locally (Table 55–1).

Table 55–1 DesignWebCenterSpaces_11.1.1.9.0.zip - Unzip Folders

Unzip Folders	Description
\DesignWebCenterSpaces	Includes DesignWebCenterSpaces.jws. This workspace provides the *WebCenterSpacesResources* project-- a design environment for editing and redeploying assets for WebCenter Portal. **Note:** In previous releases, this workspace was also used to configure WebCenter Portal's *shared library list*. In this release, you must use the WebCenter Portal Server Extension workspace for shared library development. For details, see Section 55.2, "Developing Task Flows, Data Controls, and Managed Beans for WebCenter Portal".
\copy_to_common	Includes a common directory that contains WebCenter Portal WLST commands. WebCenter Portal's WLST commands are required to upload customized assets directly to the portal server from DesignWebCenterSpaces.jws.
\copy_to_jdev_ext	Includes oracle.webcenter.portal.jar. Required update to the Oracle JDeveloper WebCenter Portal Extension.

5. Copy WebCenter Portal's WLST (WebLogic Scripting Tool) commands to the Oracle home directory where JDeveloper is installed:

   a. Navigate to: <DesignWebCenterSpaces_Unzip_Location>\copy_to_common

   b. Make a copy of the common directory.

      The common directory is located under <DesignWebCenterSpaces_Unzip_Location>\copy_to_common.

   c. Navigate to: <JDeveloper_install_directory>\oracle_common

      Tip: The JDeveloper_install_directory is the base directory under which JDeveloper is also installed, that is, the same directory that you configure as the jdeveloper.install.home.directory in config.properties (see also Table 55–2).

   d. Copy the content of the common directory here.

      Tip: On Linux, use the following command: cp -r <DesignWebCenterSpaces_Unzip_location>/copy_to_common/common/.

6. Copy new version of oracle.webcenter.portal.jar to the Oracle JDeveloper extensions directory:

   a. Navigate to: <DesignWebCenterSpaces_Unzip_Location>\copy_to_jdev_ext

   b. Make a copy of oracle.webcenter.portal.jar.

      The oracle.webcenter.portal.jar file is located under <DesignWebCenterSpaces_Unzip_Location>\copy_to_jdev_ext.

c. Navigate to: `<JDeveloper_install_directory>\jdeveloper\jdev\extensions\`

> **Tip:** The `JDeveloper_install_directory` is the base directory under which JDeveloper is also installed, that is, the same directory that you configure as the `jdeveloper.install.home.directory` in `config.properties` (see also Table 55–2).

d. Copy the `oracle.webcenter.portal.jar file` here.

7. Restart JDeveloper if it is open.

55.1.3 Enabling Direct Download and Uploads to WebCenter Portal

If you build or modify skins, page templates, and so on, for a WebCenter Portal application that is live or running in a test environment you can upload your updates directly to WebCenter Portal from JDeveloper. To enable direct updates from the JDeveloper **WebCenterSpacesResources** project you must:

- Specify the name of the host and port where the WebCenter Portal application is running in `config.properties`.
- Check that you have the appropriate roles and permissions to upload the asset to WebCenter Portal. You must have the following:
  - **WebLogic Server role** - `monitor`   AND
  - **WebCenter Portal asset permissions** - For example, to upload a new skin you must have the `Create, Edit, Delete Skins` permission.

> **Note:** Out-of-the-box, only the default Fusion Middleware administrator (`weblogic`) has all the required permissions.

Configuring the WebCenter Portal hostname and port, enables the *Upload Portal Resource* option in your project. The first time you use this option, within a JDeveloper session, you must enter your WebCenter Portal login name and password. For security reasons, your credentials are not saved for future sessions but they are stored in memory for the current JDeveloper session.

To set connection properties in `config.properties` and grant permissions:

1. Open `config.properties`, available at:

   `<Unzip_Directory>\DesignWebCenterSpaces\config.properties`

2. Enter details relating to JDeveloper and your WebCenter Portal installation, as shown in Table 55–2:

   The `config.properties` file describes each property and offers examples. The defaults provided are only samples and must be replaced with your own, installation-specific values.

Table 55–2 config.properties Settings to Enable Direct Uploads

Configuration Property	Description
`jdeveloper.install.home.directory`	Base directory where JDeveloper is installed. In addition to `\jdeveloper`, the directory you specify must contain `\wlserver_10.3`, `\modules`, and so on.

Table 55–2 (Cont.) config.properties Settings to Enable Direct Uploads

Configuration Property	Description
`wlst.executable`	Name of the WebLogic Scripting Tool (WLST) executable file. Either `wlst.cmd` (on Windows) or `wlst.sh` (on Linux).
`wls.port`	Port number on which the WebLogic Server Administration Console is running
`wls.host`	Host machine on which the WebCenter Portal application is running and where the custom shared library is to be deployed
`wc.host`	Name of the host machine where the WebCenter Portal application is running.
`wc.port`	Port number on which the WebCenter Portal application is running.
`wc.protocol`	Specify whether the WebCenter Portal URL protocol is **http** or **https**.
`wls.webcenter.app.target`	Managed server on which the WebCenter Portal application (`webcenter.ear`) is deployed. For example, `WC_Spaces`. In a clustered environment, enter a comma separated list of servers, for example, `WC_Spaces1`,`WC_Spaces2`.
`webcenter.app.name`	Name of the WebCenter Portal application. Always `webcenter`.

3. Save your updates to `config.properties`.
4. Verify and, if necessary, request permissions shown in Table 55–3.

Table 55–3 Permissions to Upload and Manage Assets Through JDeveloper

Asset Type	Required Role or Permission	Granted By	Description
Shared Assets	■ `monitor`	WebLogic Server	■ This role enables you to run the WLST scripts which upload assets from JDeveloper to WebCenter Portal. See also, "Administrative Users and Roles" section in *Securing Applications with Oracle Platform Security Services*.
	■ `Create, Edit, Delete` *`AssetType`*	WebCenter Portal	■ This permission enables you to create and manage various shared assets for WebCenter Portal.
	■ `Manage Configuration`	WebCenter Portal	■ This application-level permission gives you access to Portal Builder Administration. **Note:** The `Administrator` role in WebCenter Portal includes both these permissions, that is, `Create, Edit, Delete Assets` and `Manage Configuration`. See also, the section "Managing Application Roles and Permissions" in *Administering Oracle WebCenter Portal*.

Table 55–3 (Cont.) Permissions to Upload and Manage Assets Through JDeveloper

Asset Type	Required Role or Permission	Granted By	Description
Portal Assets	■ `monitor`	WebLogic Server	■ This role enables you to run the WLST scripts which upload resources from JDeveloper to WebCenter Portal.
	■ `Create, Edit, Delete Assets` (standard permission model) OR `Create, Edit, Delete` *`AssetType`* (advanced permission model)	WebCenter Portal	■ These permissions enable you to create and manage assets for a particular portal. Either standard or advanced permissions will apply, depending on the portal.
	■ `Manage Configuration`	WebCenter Portal	■ This portal-level permission gives you access to the Asset page for a particular portal. **Note:** The `Moderator` role in WebCenter Portal includes both these permissions, that is, `Create, Edit, Delete Assets`/*`AssetType`* and `Manage Configuration`. See also, the section "Managing Application Roles and Permissions" in *Administering Oracle WebCenter Portal*.

5. To test the connection, upload a sample asset and verify that the asset is available in WebCenter Portal.

   For details, see Section 55.1.4, "Opening and Exploring the WebCenterSpacesResources Project" and Section 55.1.6, "Uploading Assets Directly to WebCenter Portal".

   See also, Section 55.1.8, "Troubleshooting Asset Round-Trip Development"

55.1.4 Opening and Exploring the WebCenterSpacesResources Project

1. Download and unzip the `DesignWebCenterSpaces.jws` workspace.

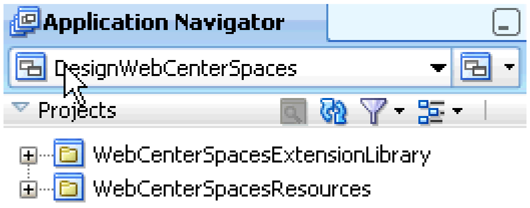
   See Section 55.1.2, "Setting Up Your JDeveloper Environment for Asset Development".

2. Open `DesignWebCenterSpaces\DesignWebCenterSpaces.jws` in JDeveloper (Figure 55–3).

   This workspace contains a project dedicated to asset development called **WebCenterSpacesResources**.

Note: You can ignore the **WebCenterSpacesExtensionLibrary** project.; this project is not used for asset development.

Figure 55–3 Projects in the DesignWebCenterSpaces Workspace



3. Expand the **WebCenterSpacesResources** project.

The **WebCenterSpacesResources** project contains several files and folders (Figure 55–4):

Figure 55–4 Exploring the WebCenterSpacesResources Project in JDeveloper

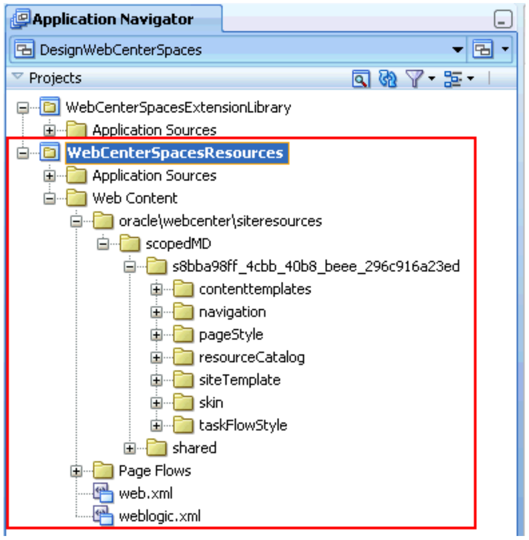


Table 55–4 describes the files and folders in the **WebCenterSpacesResources** project.

Table 55–4 Files and Folders in the WebCenterSpacesResources Project

Configuration Property	Description
\Application Sources	Supporting files and folders.
\Web Content	Contains assets for WebCenter Portal.
\oracle\webcenter\siteresources	Directory containing assets. You can develop and manage all your assets for WebCenter Portal under this folder.
\scopedMD	Contains shared assets and portal assets: ■ Shared assets are stored under the *default scope* directory named `s8bba98ff_4cbb_40b8_beee_296c916a23ed` Several sample shared assets are available under this directory. ■ Portal assets are stored under portal-specific directories with the same name as the portal's internal ID. No sample portal assets are provided. For more information, see "Shared Assets vs Portal Assets".
\<Default Scope ID>	Contains sample shared assets.
\contenttemplates	Includes a sample Content Presenter display template (`content-default-list-item-view.jsff`) - Sample Content List Item View.
\navigation	includes a sample navigation (`Navigation.xml`) - SampleNavigation.
\pageStyle	Includes a blank page style (`TemplateHome.jspx`) - Sample Home Page Style.

Table 55–4 (Cont.) Files and Folders in the WebCenterSpacesResources Project

Configuration Property	Description
\resourceCatalog	Includes a sample catalog (`ResourceCatalog.xml`) - Sample Home Portal Catalog
\siteTemplate	Includes a sample page templates (`Template.jspx`) - Sample Side Navigation **Note:** This directory is the correct directory for developing page templates (even though the directory name is siteTemplate).
\skin	Includes a sample skin (`Skin.css`) - Sample Portal FX Skin.
\taskFlowStyle	Includes files for a sample task flow style (`pform.jsff` and `pform-definition.xml` - Sample Parameter Form.
\shared	Legacy directory in MDS for images and content used by assets, such as, icons, images, and so on. Oracle recommends that you relocate all such artifacts to your content server and that you use a folder structure on your content server specifically for asset artifacts so that content is easy to identify and move, if required. If you choose not to move artifacts stored in MDS, your administrator can use the MDS WLST commands `exportMetadata/importMetadata` to migrate content to and from MDS.
\Page Flows	Supporting files and folders.

Shared Assets vs Portal Assets

In WebCenter Portal:

- **Shared assets are available to all portals**

  You must develop all shared assets under the WebCenterSpacesResources project directory `oracle/webcenter/siteresources/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed`.

  To upload shared assets to the WebCenter Portal application you must have WebCenter Portal permissions: `Application-Manage Configuration` plus `Create, Edit, Delete <AssetType>`.

- **Portal assets are only available within a particular portal**

  You must develop a resource for a specific portal under the appropriate namespace, so that it can be uploaded to that portal:

  ```
  oracle/webcenter/siteresources/scopedMD/<space_internal_id>
  ```

  Similarly, assets downloaded from an existing portal and imported into JDeveloper, can only be uploaded back to the same portal. You cannot upload such assets to a different portal.

  To upload assets to a particular portal you must have the `Portal-Manage Configuration` permission, plus one of:

  `Create, Edit, Delete Assets` (standard permission model)
  `Create, Edit, Delete <AssetType>` (advanced permission model)

If you want to upload assets *directly* from JDeveloper, you must also have the WebLogic Server `monitor` role. See Section 55.1.3, "Enabling Direct Download and Uploads to WebCenter Portal".

55.1.5 Editing WebCenter Portal Assets in JDeveloper

You do not have to develop WebCenter Portal assets from scratch. Most developers will download an existing asset from the WebCenter Portal application and edit it in JDeveloper.

There are two techniques for bringing assets into JDeveloper. You can either download the asset to JDeveloper directly from WebCenter Portal or you can export the asset to an archive (`.ear` file) and then import the asset archive to JDeveloper.

For more information, see:

- Section 55.1.5.1, "Downloading an Asset Directly from WebCenter Portal to JDeveloper"
- Section 55.1.5.2, "Downloading an Asset to an Archive from WebCenter Portal"
- Section 55.1.5.3, "Importing a WebCenter Portal Asset to JDeveloper"
- Section 55.1.5.4, "How to Build Assets for WebCenter Portal"

55.1.5.1 Downloading an Asset Directly from WebCenter Portal to JDeveloper

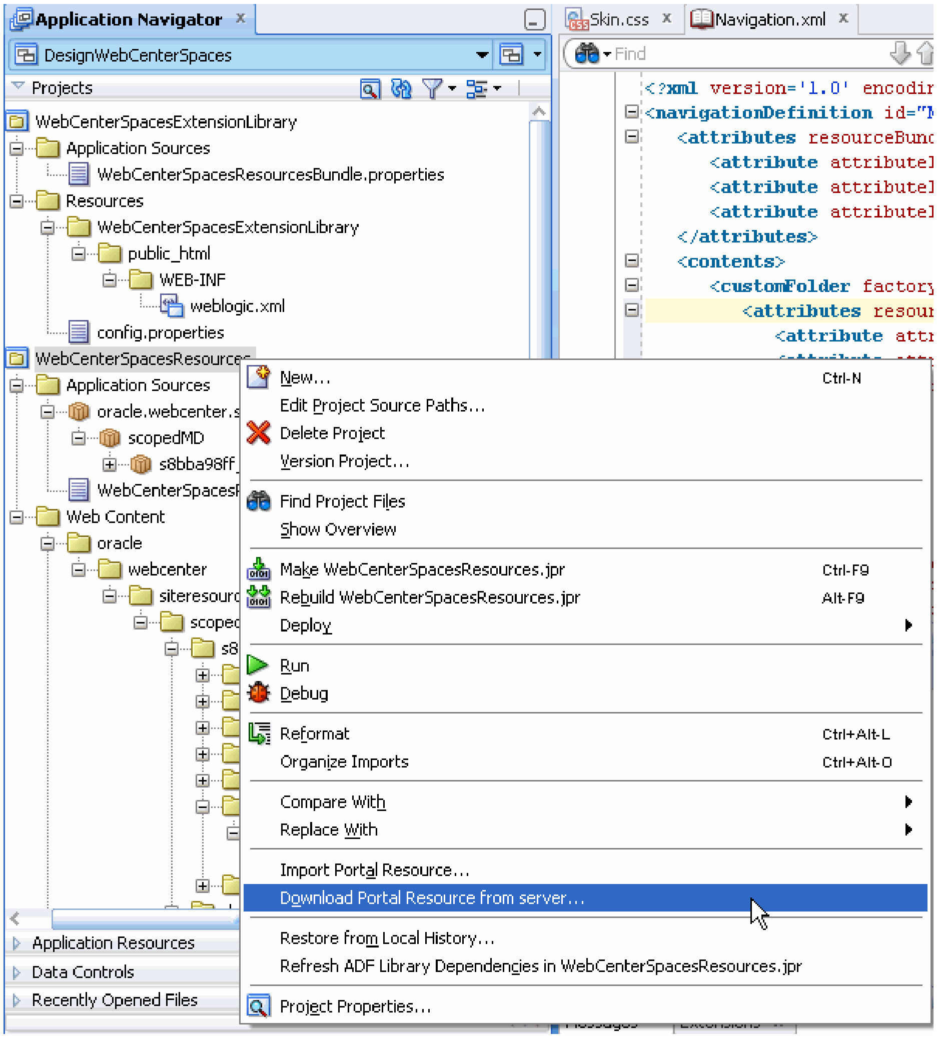
You can download an asset directly from WebCenter Portal into JDeveloper from within the **WebCenterSpacesResources** project.

1. If you have not done so already, configure WebCenter Portal connection details in `config.properties` and request the appropriate asset management permissions.

   See also, Section 55.1.3, "Enabling Direct Download and Uploads to WebCenter Portal".

2. In the Navigator, right-click the **WebCenterSpacesResources** project and then select **Download Portal Resource from Server**, as shown in Figure 55–5.

Figure 55–5 Download Portal Resource from Server Menu

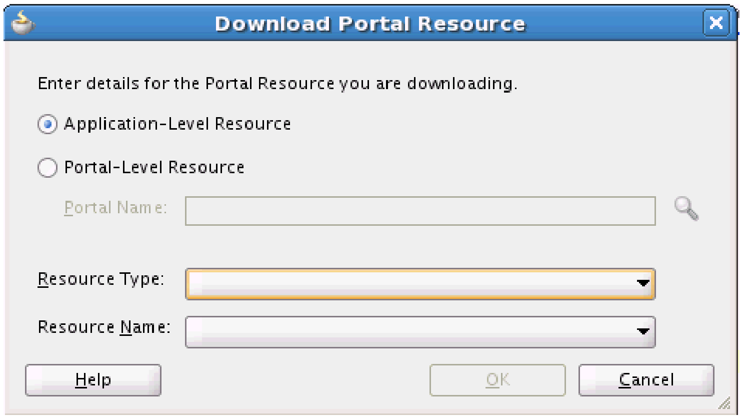


```
<?xml version='1.0' encodir
<navigationDefinition id="N
  <attributes resourceBund
    <attribute attributeI
    <attribute attributeI
    <attribute attributeI
  </attributes>
  <contents>
    <customFolder factory
      <attributes resour
        <attribute attr
```

3. In the Download Portal Resources dialog, choose to download either a shared asset (**Application-Level Resource**) or a portal asset (Portal-Level Resource), as shown in Figure 55–6.

   See "Shared Assets vs Portal Assets" for information on these selections.

Figure 55–6 Download Portal Resources Dialog


Download Portal Resource

Enter details for the Portal Resource you are downloading.

● Application-Level Resource

○ Portal-Level Resource

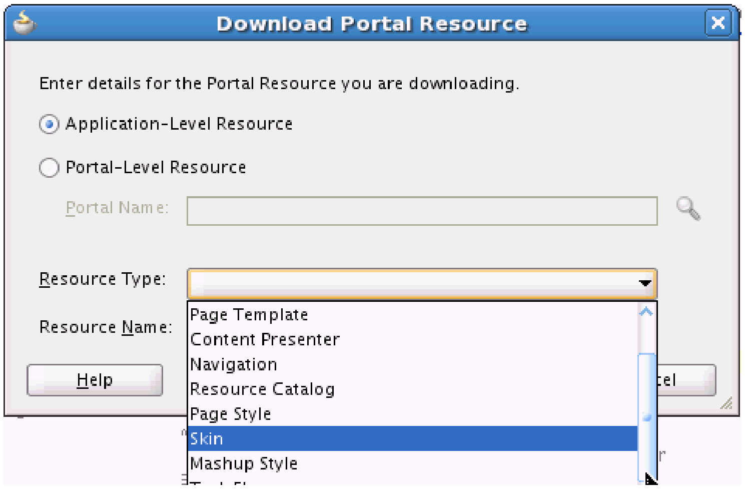
Portal Name:

Resource Type:

Resource Name:

4. To filter the list of possible asset names, select the type of asset you wish to download from the Resource Type menu, as shown in Figure 55–7.

Figure 55–7 Selecting the Type of Asset to Download



Download Portal Resource

Enter details for the Portal Resource you are downloading.

● Application-Level Resource

○ Portal-Level Resource

Portal Name:

Resource Type:

Resource Name:

5. Finally, select the name of the asset you wish to download from the **Resource Name** menu.

6. Click **OK**.

55.1.5.2 Downloading an Asset to an Archive from WebCenter Portal

For detailed steps, see the "Downloading an Asset" section in *Building Portals with Oracle WebCenter Portal*.

55.1.5.3 Importing a WebCenter Portal Asset to JDeveloper

When you import an asset from a WebCenter Portal asset archive (`.ear` file) into the *WebCenterSpacesResources* project, the asset is uploaded to the appropriate project directory.

- **Shared assets are imported to:**

  ```
  WebCenterSpacesResources\oracle\webcenter\siteresources\scopedMD\
  application_ID\resource_type\resource_ID
  ```

  For example, a shared skin with the asset ID `gsr5a8c2fcc_bc7f_4cba_9254_36df58d66e60` is created under the application directory `s8bba98ff_4cbb_40b8_beee_296c916a23ed`:

  ```
  WebCenterSpacesResources\oracle\webcenter\siteresources\scopedMD\
  s8bba98ff_4cbb_40b8_beee_296c916a23ed\skin\gsr5a8c2fcc_bc7f_4cba_9254_
  36df58d66e60
  ```

- **Portal assets are imported to:**

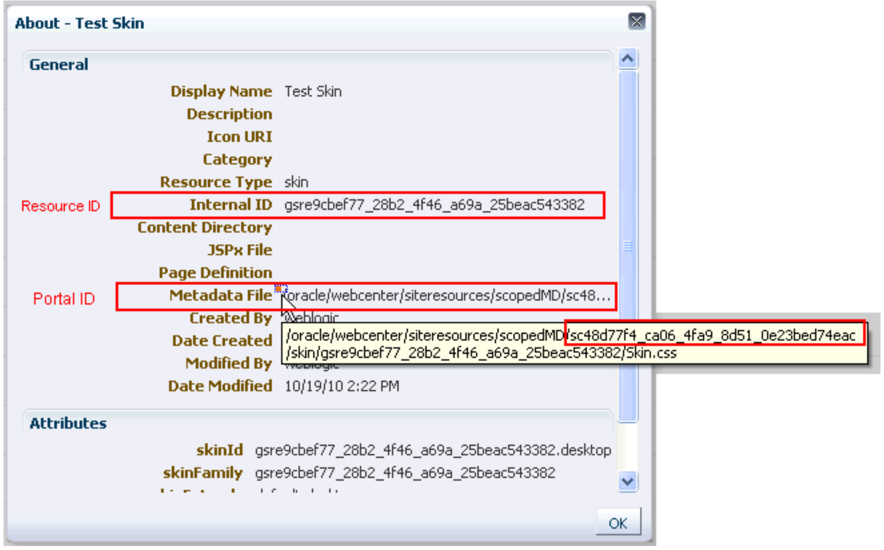
  ```
  WebCenterSpacesResources\oracle\webcenter\siteresources\scopedMD\
  Space_ID\resource_type\resource_ID
  ```

  For example, a portal skin with the asset ID `gsre9cbef77_28b2_4f46_a69a_25beac543382` is created under the portal directory `sc48d77f4_ca06_4fa9_8d51_0e23bed74eac`:

```
WebCenterSpacesResources\oracle\webcenter\siteresources\scopedMD\
sc48d77f4_ca06_4fa9_8d51_0e23bed74eac\skin\gsre9cbef77_28b2_4f46_a69a_
25beac543382
```

Its important to know the internal IDs of assets and the parent portal (portal assets only) so that you can locate the appropriate asset folders in JDeveloper. In WebCenter Portal, internal IDs are published in the asset's About dialog (Figure 55–8). For details, see the "Viewing Information About an Asset" section in *Building Portals with Oracle WebCenter Portal*.

Figure 55–8 Checking Asset IDs in WebCenter Portal



About - Test Skin

General

Display Name Test Skin
Description
Icon URI
Category
Resource Type skin
Resource ID — Internal ID gsre9cbef77_28b2_4f46_a69a_25beac543382
Content Directory
JSPx File
Page Definition
Portal ID — Metadata File /oracle/webcenter/siteresources/scopedMD/sc48...
Created By weblogic
Date Created
Modified By
Date Modified 10/19/10 2:22 PM

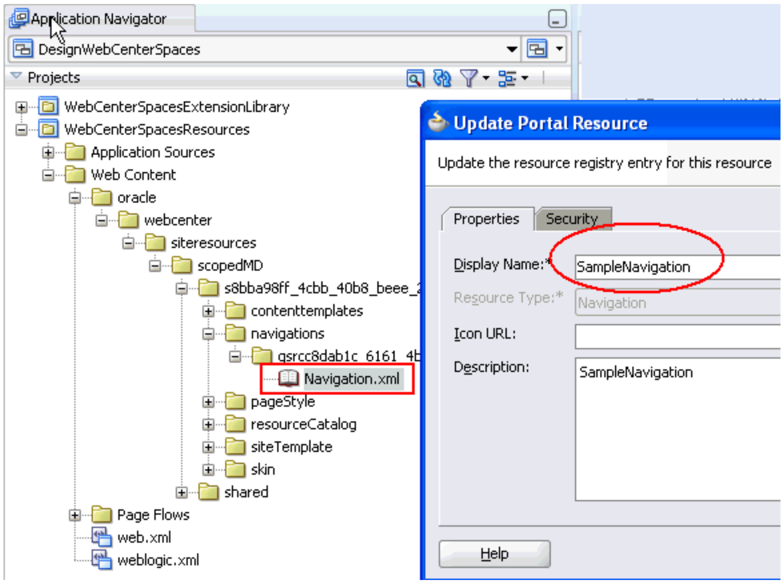
/oracle/webcenter/siteresources/scopedMD/sc48d77f4_ca06_4fa9_8d51_0e23bed74eac
/skin/gsre9cbef77_28b2_4f46_a69a_25beac543382/Skin.css

Attributes

skinId gsre9cbef77_28b2_4f46_a69a_25beac543382.desktop
skinFamily gsre9cbef77_28b2_4f46_a69a_25beac543382

Internal IDs are not easy to remember like display names. If you want to identify an imported asset you can check its display name using the **Update Resource** option. Navigate to the resource directory, drill down to the resource file (for example, `mynavigation.xml`, `myskin.css`, `mypagetemplate.jpsx`, `mycatalog.xml`), and then click **Update Resourc**e from the right mouse menu (Figure 55–9).

Figure 55–9 Checking Asset Display Names in JDeveloper



Update the resource registry entry for this resource

Display Name:* SampleNavigation

Resource Type:* Navigation

Icon URL:

Description: SampleNavigation

To import a WebCenter Portal asset from an archive:

1. In the Application Navigator, right-click the **WebCenterSpacesResources** project, and choose **Import Portal Resource**.
2. In the Import Portal Resource dialog, enter the name or browse for the archive file (`.ear` file) that contains the asset that you want to import.

   If the archive does not exist yet, login to WebCenter Portal and download the asset to a `.ear` file. For details, see the "Downloading an Asset" section in *Building Portals with Oracle WebCenter Portal*.
3. Click **OK**.
4. Navigate to the asset as follows:
   - Locate shared assets under:

     `WebCenterSpacesResources\oracle\webcenter\siteresources\scopedMD\s8bba98ff_4cbb_40b8_beee_296c916a23ed`
   - Locate portal assets under:

     `WebCenterSpacesResources\oracle\webcenter\siteresources\scopedMD\<portal_GUID>`

Note: If you import an asset that was *not* originally created in WebCenter Portal or *not* developed using the **WebCenterSpacesResources** project the asset will be imported to:

`WebCenterSpacesResources\oracle\webcenter\portalapp`

In this instance, to consolidate future development, Oracle recommends that you manually move the asset to the appropriate shared or portal asset directory under `WebCenterSpacesResources\oracle\webcenter\siteresources\scopedMD`.

55.1.5.4 How to Build Assets for WebCenter Portal

To learn more about building assets, read the appropriate chapter:

- Page Templates - Developing Page Templates
- Page Styles - Developing Page Styles
- Skins - Developing Skins
- Navigations - Developing a Navigation Model
- Content Presenter Display Templates - Creating Content Presenter Display Templates
- Resource Catalogs - Developing Resource Catalogs
- Task Flow Styles - Developing Task Flow Styles

55.1.6 Uploading Assets Directly to WebCenter Portal

If WebCenter Portal is up and running you can deploy new or updated assets directly to WebCenter Portal from your JDeveloper environment.

You must have appropriate asset management permissions in WebCenter Portal to upload assets in this way. If you do not have the correct privileges, you are not allowed to upload assets. See also Section 55.1.3, "Enabling Direct Download and Uploads to WebCenter Portal".

1. If you have not done so already, configure WebCenter Portal connection details in `config.properties` and request the appropriate asset management permissions.

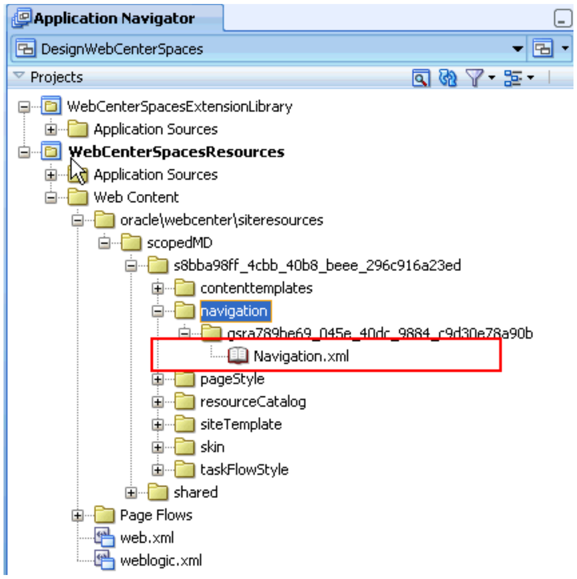
   See also, Section 55.1.3, "Enabling Direct Download and Uploads to WebCenter Portal".

2. In JDeveloper, open the **WebCenterSpacesResources** project, and navigate to the asset you want to upload.

   For example, to upload the sample shared navigation *SampleNavigation*, navigate to (Figure 55–10):

   WebCenterSpacesResources\Web Content\oracle\webcenter\siteresources\scopedMD\s8bba98ff_4cbb_40b8_beee_296c916a23ed\navigation\gsrcc8dab1c_6161_4bb8_8764_127b4ecee01b

Figure 55–10 Navigating to WebCenter Portal Resource Folders



3. Verify that the asset is complete.

4. Ensure that any artifact referenced by the asset, such as images, icons, and so on, is available and accessible on the target content server.

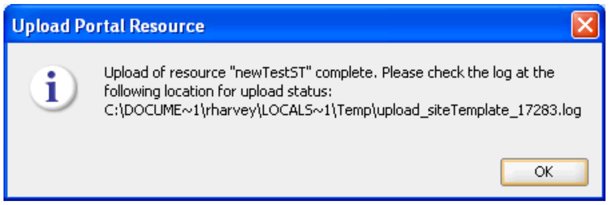
5. Right-click the file associated with the asset you want to upload to WebCenter Portal, and choose **Upload Portal Resource to Server**.

   There is a single file associated with most asset types. The exception is task flow style which has two files: `definition.xml` and `.jsff`. To upload a task flow style you must right-click the `definition.xml` file.

6. If prompted, enter your WebCenter Portal username and password and click **OK**.

   An information message displays to indicate that the upload process is complete and also provides the name and location of the upload log file—`upload_<asset_type_id>.log`.

Figure 55–11 Asset Upload Complete Message



Upload of resource "newTestST" complete. Please check the log at the following location for upload status:
C:\DOCUME~1\rharvey\LOCALS~1\Temp\upload_siteTemplate_17283.log

7. Review the upload log file.

   The following message indicates that the upload was successful.

   ```
   Imported <temp_log_directory>\<asset_type_id>.ear
   ```

   If you do not see this message, refer to Section 55.1.8, "Troubleshooting Asset Round-Trip Development"

8. Log in to WebCenter Portal and verify that the asset is available as expected.

   a. Log in to WebCenter Portal.

b. Navigate to the appropriate Asset page.

   To verify shared assets, navigate to the following URL:

   ```
   http://host:port/webcenter/portal/builder/assets
   ```

   To verify portal assets, navigate to the following URL:

   ```
   http://host:port/webcenter/portal/portalName/admin/assets
   ```

c. Select the appropriate asset type from the panel on the left, and verify that the asset you just uploaded is available and working as expected.

   Dependent images and so on, must be available and accessible on your content server. If an image or file is missing, check that you copied it to the appropriate directory.

55.1.7 Exporting WebCenter Portal Assets to an Archive

If for some reason you do not want or cannot upload your asset directly to WebCenter Portal from JDeveloper, you can export the asset to an archive (`.ear` file) and import the asset at some other time.

To export a WebCenter Portal asset to an archive:

1. In the Application Navigator, navigate to the asset directory and drill down to the asset file (for example, `myskin.css`, `mypagetemplate.jpsx`, `mycatalog.xml`).
2. Click **Export Portal Resource** from the right mouse menu.
3. In the Export Portal Resource dialog, enter or browse for the path and file name for the export archive file. For example: `C:\myskin.ear`
4. Click **OK**.

The steps to upload the asset to WebCenter Portal from the archive are available in the "Uploading an Asset" section in *Building Portals with Oracle WebCenter Portal*.

> **Note:** Artifacts referenced by the asset, such as images, icons, and so on, are not included in the asset archive. If you have not done so already, ensure that all such artifacts are available and accessible on the target content server.

55.1.8 Troubleshooting Asset Round-Trip Development

This troubleshooting section includes the following subsections:

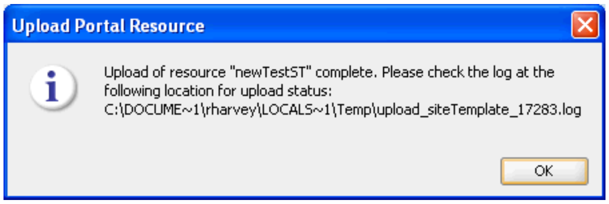
- Examining the Asset Upload Log File
- Unable to Upload Assets to WebCenter Portal - Access Denied
- Unable to Upload Assets to WebCenter Portal - java.lang.Exception

Examining the Asset Upload Log File

When you upload an asset to WebCenter Portal, progress details are recorded in a log file. The name of the log file includes the type of asset you are uploading and a unique ID, in the format—`upload_*asset_type_id*.log`. For example, `upload_siteTemplate_17283.log`.

The location of the log file depends on your local `temp` directory settings. The exact log file location displays in an information message such as this:

Figure 55–12 Asset Upload Log File Location



Upload Portal Resource

Upload of resource "newTestST" complete. Please check the log at the following location for upload status:
C:\DOCUME~1\rharvey\LOCALS~1\Temp\upload_siteTemplate_17283.log

The following log entry indicates that the upload process was successful.

```
Imported <temp_log_directory>\<asset_type_id>.ear
```

Insufficient permissions result in "`Access denied`" or "`java.lang.Exception`" errors, as described below.

Unable to Upload Assets to WebCenter Portal - Access Denied

The following error displays in the *asset upload log file* if you do not have the `monitor` role:

```
Operation: getScopeName(java.lang.String)  Detail: Access denied. Required roles:
Admin, Operator, Monitor, executing subject: principals=[yourusername]
```

The `monitor` role is a Weblogic Server role. This role enables you to run the WLST scripts which upload assets from JDeveloper to WebCenter Portal. Ask your system administrator to grant you this role through the WebLogic Server Administration Console. See also, the "Administrative Users and Roles" section in *Securing Applications with Oracle Platform Security Services*.

Unable to Upload Assets to WebCenter Portal - java.lang.Exception

The following error displays in the *asset upload log file* if you do not have permission to manage any assets in WebCenter Portal or the particular type of asset you are trying to upload:

```
javax.management.MBeanException at
weblogic.rjvm.ResponseImpl.unmarshalReturn(ResponseImpl.java:234)
Root Cause: Caused by: java.lang.Exception at
oracle.webcenter.portalframework.genericsiteresources.model.lifecycle.SiteResource
sHelper.updateResource(SiteResourcesHelper.java)
```

Ask your WebCenter Portal administrator to grant you appropriate permissions through Portal Builder Administration. Or, if the asset you are trying to upload is for a particular portal, contact the portal moderator to request the required permission. See also, Table 55–3, " Permissions to Upload and Manage Assets Through JDeveloper".

55.2 Developing Task Flows, Data Controls, and Managed Beans for WebCenter Portal

This section describes how you can package and deploy your ADF task flows, data controls, and managed beans in your own custom shared libraries (WAR files) for use in WebCenter Portal.

WebCenter Portal provides a JDeveloper template called *WebCenter Portal Server Extension* that enables you to specify one or more custom shared libraries that want to use with WebCenter Portal.

> **Note:** Oracle recommends that you use the *WebCenter Portal Server Extension* template to configure shared libraries for WebCenter Portal (11.1.1.8.0).
>
> For backward compatibility, if you developed and deployed custom shared libraries using `SampleWebCenterSpacesExtension.jws` and `DesignWebCenterSpaces.jws` then this approach continues to work as previously documented. You must only use one approach, you cannot use the WebCenter Portal Server Extension template and `DesignWebCenterSpaces.jws`.

You can also use the same *WebCenter Portal Server Extension* template as a starter template to build and deploy ADF library components, such as task flows, data controls, and managed beans for WebCenter Portal.

This section includes the following subsections:

- Section 55.2.1, "Understanding the WebCenter Portal Server Extension Template"
- Section 55.2.2, "Understanding Shared Library Development for WebCenter Portal"
- Section 55.2.3, "Creating a WebCenter Portal Server Extension Workspace"
- Section 55.2.4, "Registering Additional Shared Libraries With WebCenter Portal"
- Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)"
- Section 55.2.6, "Developing ADF Library Components for WebCenter Portal Using the PortalExtension Project"
- Section 55.2.7, "Troubleshooting WebCenter Portal Shared Library Deployment"

55.2.1 Understanding the WebCenter Portal Server Extension Template

The WebCenter Portal Server Extension template creates a workspace with two projects:

- **PortalSharedLibrary** – A project that when deployed creates `extend.spaces.webapp.war`, a shared library that:
  - References one or more custom shared libraries for WebCenter Portal.
  - Wraps the ADF Library JAR created from the **PortalExtension** project (only if used).

  > **Note:** Do not add any code to this project; this project only contains descriptor files that reference other shared libraries and/or includes ADF Library JARs.

- **PortalExtension** – A starter project in which you create custom ADF components, such as task flows, data controls, and managed beans. You can deploy this project to an ADF Library, which is added to the `extend.spaces.webapp.war` shared library.

  The components you create in a PortalExtension project typically require Java, ADF, and other related software development skills.

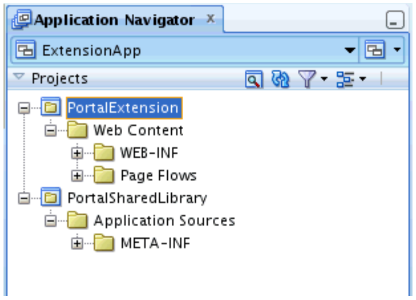
This section describes:

- Section 55.2.1.1, "How the WebCenter Portal Server Extension Workspace Is Organized"
- Section 55.2.1.3, "The PortalExtension Project"
- Section 55.2.1.2, "The PortalSharedLibrary Project"

55.2.1.1 How the WebCenter Portal Server Extension Workspace Is Organized

The WebCenter Portal Server Extension workspace contains two default projects **PortalExtension** and **PortalSharedLibrary** each containing specific libraries and default files (Figure 55–13).

Figure 55–13 WebCenter Portal Server Extension Workspace in Application Navigator



55.2.1.2 The PortalSharedLibrary Project

The **PortalSharedLibrary** project, shown in Figure 55–14, enables you to register one or more custom shared libraries that you want to use in WebCenter Portal and also provides a convenient mechanism for deploying task flows, data controls, and managed beans (developed in the **PortalExtension** project) to a managed server running WebCenter Portal.

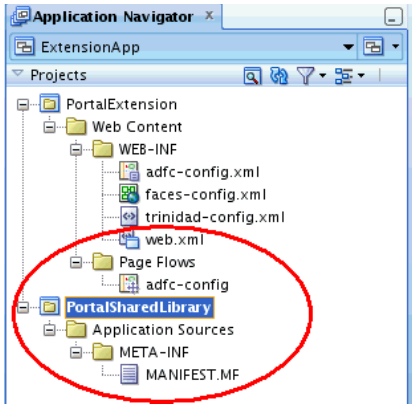
The PortalSharedLibrary project includes a WAR deployment profile called `extend.spaces.webapp`. When you deploy to `extend.spaces.webapp.war`, all the custom shared libraries that you register (in `weblogic.xml`) and any ADF library that you create and using a PortalExtension project are automatically included as dependencies of `extend.spaces.webapp.war`.

See Section 55.2.4, "Registering Additional Shared Libraries With WebCenter Portal" and Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)".

Note: Do not add any code to the **PortalSharedLibrary** project; this project only contains descriptor files that reference other shared libraries or include ADF Library JARs.

For general information on shared libraries, see Section 55.2.2.2, "General Documentation for Shared Library Deployment".

Figure 55–14 PortalSharedLibrary Project



55.2.1.2.1 Versioning extend.spaces.webapp.war The **PortalSharedLibrary** project contains a `MANIFEST.MF` file. Each time you update and deploy `extend.spaces.webapp.war`, edit this `MANIFEST.MF` file to increment the shared library implementation version. With each iteration, you must increment the `Implementation-Version` number in the `MANIFEST.MF` file, as shown in Example 55–1. The default implementation version is 11.1.2.

Example 55–1 Manifest File for extend.spaces.webapp

```
Manifest-Version: 1.0
Archiver-Version: Plexus Archiver
Created-By: Apache Maven
Built-By: builder
Build-Jdk: 1.6.0_20
Extension-Name: extend.spaces.webapp
Implementation-Label: 11.1.1.9.0
Implementation-Title: extend.spaces.webapp
Implementation-Vendor: Oracle
Implementation-Version: 11.1.2
Specification-Title: extend.spaces.webapp
Specification-Vendor: Oracle
Specification-Version: 11.1.1
```

For detailed steps on how to change the implementation version, see Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)".

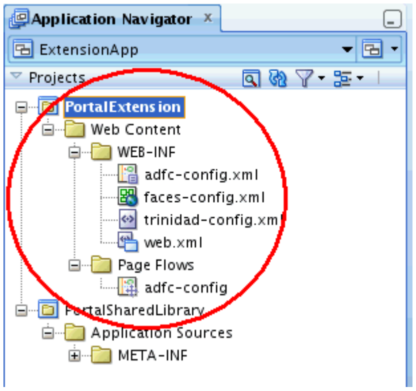
55.2.1.3 The PortalExtension Project

The **PortalExtension** project is a standard ADF project where you can create custom components like task flows, data controls, and managed beans.

A PortalExtension project is deployed to an ADF Library. This library is automatically added as a dependency to the `extend.spaces.webapp.war` shared library file generated from the PortalSharedLibrary project. See Section 55.2.6, "Developing ADF Library Components for WebCenter Portal Using the PortalExtension Project".

For more information on ADF Libraries, see Section 55.2.2.1, "General Documentation for ADF Library Development".

Figure 55–15 The PortalExtension Project

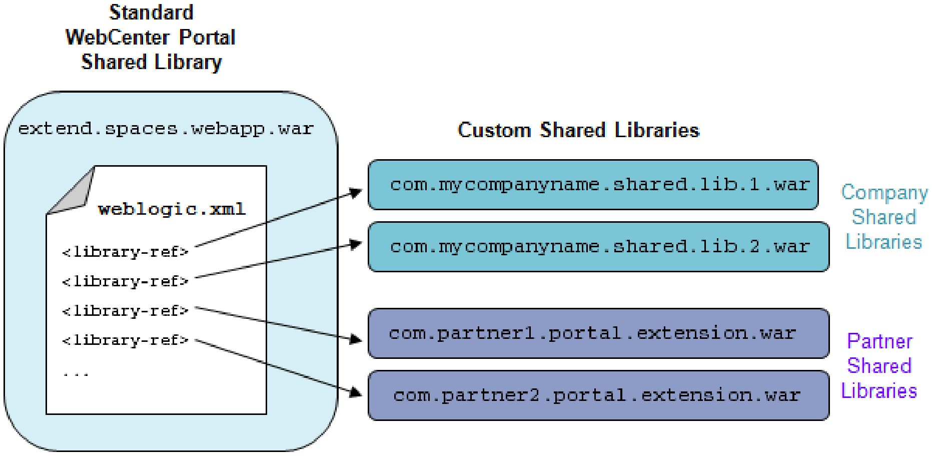


55.2.2 Understanding Shared Library Development for WebCenter Portal

WebCenter Portal includes the standard shared library `extend.spaces.webapp.war`. This WAR file can include a deployment descriptor (`weblogic.xml`) which references other shared libraries containing custom ADF library components.

If you have custom code or task flows deployed in several shared libraries from multiple sources that you want to use in WebCenter Portal you can list them in `extend.spaces.webapp.war`, as illustrated in Figure 55–16.

Figure 55–16 Reference Multiple Custom Shared Libraries in extend.spaces.webapp.war



This development model provides an easy way to utilize additional shared libraries in WebCenter Portal from multiple contributors, including developers, customers, partners.

Whenever you deploy a new shared library that includes extensions for WebCenter Portal you must register the name of your shared library with WebCenter Portal and redeploy `extend.spaces.webapp.war`. For details, see Section 55.2.4, "Registering Additional Shared Libraries With WebCenter Portal".

This Guide does not teach you how to develop ADF task flows, data controls, and managed beans and package them into custom shared libraries as such techniques and procedures are not specific to WebCenter Portal deployments. If you are new to shared library development, Oracle recommends that you familiarize yourself with the documentation listed at:

- Section 55.2.2.1, "General Documentation for ADF Library Development"
- Section 55.2.2.2, "General Documentation for Shared Library Deployment"

This Guide explains how to reference shared libraries that you want to use in WebCenter Portal using the WebCenter Portal Server Extension template. Table 55–5 provides an overview of the ADF library and shared library development processes, highlighting information that is specific to WebCenter Portal and pointing to other documentation where applicable.

Table 55–5 Developing and Deploying ADF Libraries and Shared Libraries for WebCenter Portal

Subject	WebCenter Portal Documentation	General Documentation
Creating ADF library components	WebCenter Portal supports several component types deployed to ADF Library JARs: task flows, data controls, and managed beans Create task flows, data controls, or managed beans for WebCenter Portal the same way as any standard ADF Library component. Alternatively, use the starter project supplied with WebCenter Portal. See Section 55.2.6, "Developing ADF Library Components for WebCenter Portal Using the PortalExtension Project".	The section "Introduction to Reusable Components" in *Fusion Developer's Guide for Oracle Application Development Framework* describes various types of reusable ADF components, such as a task flows, that you can deploy to an ADF Library JAR. Note that the subsection "Extension Libraries" *does not* apply to WebCenter Portal. See also, the section "Creating Reusable Components" in *Fusion Developer's Guide for Oracle Application Development Framework*.
- Naming conventions	Every ADF Library JAR file that you want to use with WebCenter Portal must have a unique file name. You cannot add two ADF Library JAR files with the same name even if their content is completely different.	See also, the section "Naming Conventions" in *Fusion Developer's Guide for Oracle Application Development Framework*.
- Managing connections	If your ADF Library JAR utilizes a connection you must manually register that connection with WebCenter Portal using the same connection name and details (just including the connection within the ADF Library JAR *does not* expose that connection in WebCenter Portal). To create connections for WebCenter Portal, you must use Fusion Middleware Control or WLST commands. To add a WebCenter Portal specific connection, refer to the "Managing Tools and Services" section in *Administering Oracle WebCenter Portal*. To add a database connection, refer to the "Creating and Managing JDBC Data Sources" section in the *Administrator's Guide*. To add a Web Service connection, configure the ADFConnections MBean using the System MBean Browser. Refer to the "System MBean Browser" section in *Administering Oracle WebCenter Portal* and the "Web Service Connection" section in the *Administrator's Guide for Oracle Application Development Framework*.	See also, the section "Naming Considerations for Connections" in Fusion Developer's Guide for Oracle Application Development Framework.
- Including descriptors	Descriptors in custom shared libraries, such as `web.xml` and `application.xml`, merge with corresponding descriptors deployed with the WebCenter Portal application. To avoid corrupting your WebCenter Portal installation, Oracle recommends that you *do not* include descriptor files in your custom shared libraries.	

Table 55–5 (Cont.) Developing and Deploying ADF Libraries and Shared Libraries for WebCenter Portal

Subject	WebCenter Portal Documentation	General Documentation
- Versioning	Each time you redeploy the WebCenter Portal shared library WAR file (`extend.spaces.wepapp.war`) to add an ADF library JAR or to reference a custom shared library you must increment the shared library implementation version number. For details, see Section 55.2.1.2.1, "Versioning extend.spaces.webapp.war" and Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)".	
Packaging components into ADF Library JAR	Package your task flow, data control, or managed bean into a standard ADF Library JAR. Alternatively, use the starter **PortalExtension** project. For details, see Section 55.2.6, "Developing ADF Library Components for WebCenter Portal Using the PortalExtension Project".	The section "Packaging a Reusable ADF Component into an ADF Library" in Fusion Developer's Guide for Oracle Application Development Framework describes how to package a reusable component, such as a task flow, to a ADF Library JAR file. Note that the subsection "How to Place and Access JDeveloper JAR Files" *does not* apply to WebCenter Portal.
Adding ADF library components to a shared library	To use ADF Library components in WebCenter Portal, you must: 1. Deploy your ADF Library components to a shared library WAR file. See, the "Creating Shared Java EE Libraries and Optional Packages" section in *Developing Applications for Oracle WebLogic Server*. 2. Deploy your shared library to the managed server on which WebCenter Portal is deployed. 3. Register your shared library in the WebCenter Portal shared library (`extend.spaces.webapp.war`). 4. Deploy a new version of the WebCenter Portal shared library (`extend.spaces.webapp.war`). 5. Use Fusion Middleware Control or WLST to create any connections that your custom ADF Library components require. 6. Restart the managed server on which WebCenter Portal is deployed. **Note:** You can add ADF Library components directly to the WebCenter Portal shared library WAR (`extend.spaces.webapp.war`) if you want. For details, see Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)".	The section "Adding ADF Library Components into Projects" in Fusion Developer's Guide for Oracle Application Development Framework describes how to deploy ADF library components, such as a task flow, to a project. The information in this section *does not* apply to WebCenter Portal.

Table 55–5 (Cont.) Developing and Deploying ADF Libraries and Shared Libraries for WebCenter Portal

Subject	WebCenter Portal Documentation	General Documentation
Using ADF library components	An ADF Library adapter in WebCenter Portal's resource catalog automatically picks up any task flows, data controls and managed beans that you deploy and reference through `extend.spaces.webapp.war` and adds them to WebCenter Portal's resource registry. Custom components in the resource registry are exposed to WebCenter Portal users through resource catalogs as components that you can drop onto portal pages. **1.** Log in to WebCenter Portal. **2.** Add your custom component to a resource catalog. See, the "Adding a Resource to a Resource Catalog" section in *Building Portals with Oracle WebCenter Portal*. **3.** Open a page with access to the resource catalog. **4.** Add your custom component to the page. See, the "Adding a Component to a Page" section in *Building Portals with Oracle WebCenter Portal*.	The section "What You May Need to Know About Using ADF Library Components" in Fusion Developer's Guide for Oracle Application Development Framework describes how various different ADF Library component types appear in JDeveloper. For WebCenter Portal, only the information pertaining to task flows, data controls, and managed beans applies.
Creating a shared library WAR	The WebCenter Portal Server Extension template provides a deployment profile for the WebCenter Portal shared library WAR `extend.spaces.webapp.war`. For details, see Section 55.2.3, "Creating a WebCenter Portal Server Extension Workspace".	The section "Creating Shared Java EE Libraries" in *Developing Applications for Oracle WebLogic Server* describes how to create a shared library WAR file.
Deploying a shared library WAR	The WebCenter Portal Server Extension template enables you to redeploy the WebCenter Portal shared library WAR `extend.spaces.webapp.war`. For details, see Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)".	The section "Deploying Shared Java EE Libraries and Dependent Applications" in *Developing Applications for Oracle WebLogic Server* describes how to deploy any shared library WAR file.
Reverting to a previous library version	Use the WebLogic Server Administration Console to revert to a previous shared library WAR version or remove unwanted versions. For details, see Section 55.2.5.3, "Reverting to a Previous WebCenter Portal Shared Library Version".	The section "Removing an ADF Library JAR from a Project" in Fusion Developer's Guide for Oracle Application Development Framework describes how remove ADF Library components in JDeveloper. The information in this section *does not* apply to WebCenter Portal.

55.2.2.1 General Documentation for ADF Library Development

- For information about creating ADF task flows, data controls, and managed beans, refer to the *Fusion Developer's Guide for Oracle Application Development Framework*.
- See also, the "Reusing Application Components" section in *Fusion Developer's Guide for Oracle Application Development Framework*.

55.2.2.2 General Documentation for Shared Library Deployment

- For additional information on versioning of shared libraries, see the "Deploying Shared Java EE Libraries and Dependent Applications" section in *Developing Applications for Oracle WebLogic Server*.
- See also, the "Creating Shared Java EE Libraries and Optional Packages" section in *Developing Applications for Oracle WebLogic Server*.

55.2.3 Creating a WebCenter Portal Server Extension Workspace

This section explains how to create a WebCenter Portal Server Extension workspace in JDeveloper in which you can:

- Register one or more custom shared libraries to use with WebCenter Portal.
- Create and deploy a custom ADF component for WebCenter Portal such as a task flow, data control, or managed bean.

To create a WebCenter Portal Server Extension workspace:

1. Download and install Oracle JDeveloper 11g (11.1.1.9.0).

   For details, see Section 2.2.1, "Installing Oracle JDeveloper".

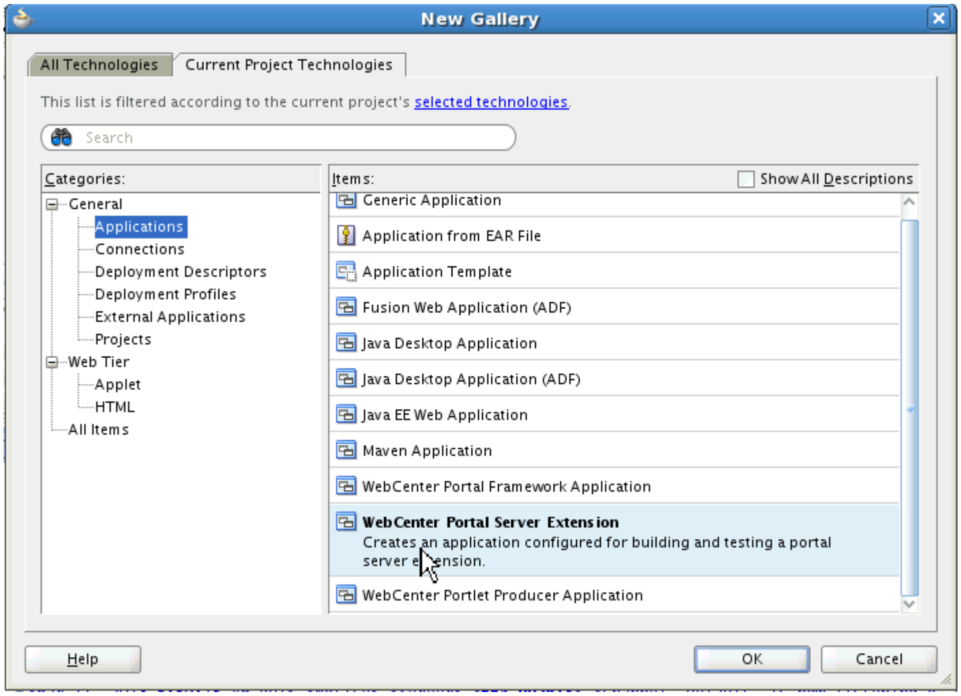
2. Install the WebCenter Portal Extension for JDeveloper (11.1.1.9.0).

   For details, see Section 2.2.2, "Installing the WebCenter Portal Extension for JDeveloper".

3. Open JDeveloper and choose **File** > **New**.
4. In the New Gallery dialog, open the **General** node and select **Applications**.
5. In the Items list, select **WebCenter Portal Server Extension**, and click **OK**.

   See Figure 55–17.

Figure 55–17 New Gallery Dialog



This list is filtered according to the current project's selected technologies.

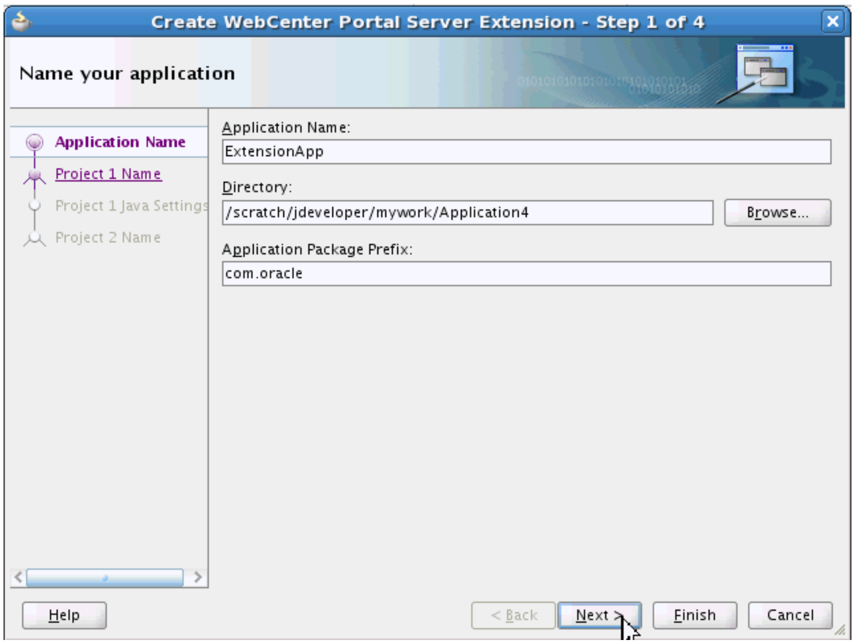
WebCenter Portal Server Extension: Creates an application configured for building and testing a portal server extension.

Note: At this point, you are on the first page of the Create WebCenter Portal Server Extension wizard. The wizard includes four pages, which are explained in the following steps.

---

6. In the Create WebCenter Portal Server Extension dialog, enter a name for the workspace in the **Application Name** field, as shown in Figure 55–18.

Figure 55–18 Create WebCenter Portal Extension Wizard Step 1 of 4



Create WebCenter Portal Server Extension - Step 1 of 4

Name your application

Application Name: ExtensionApp

Directory: /scratch/jdeveloper/mywork/Application4

Application Package Prefix: com.oracle

7. In the **Directory** field, enter a path to the base directory in which to store the workspace, or accept the default path.

   For example:

   ```
   /scratch/jdeveloper/mywork/MyPortalExtension
   ```

   Optionally, click the **Browse** button to navigate to the desired directory.

8. Optionally, enter an **Application Package Prefix**.

   This prefix is used for Java classes, interfaces, and packages created within the workspace. For example, a common prefix pattern is `com.companyDomainName`, like `com.oracle`.

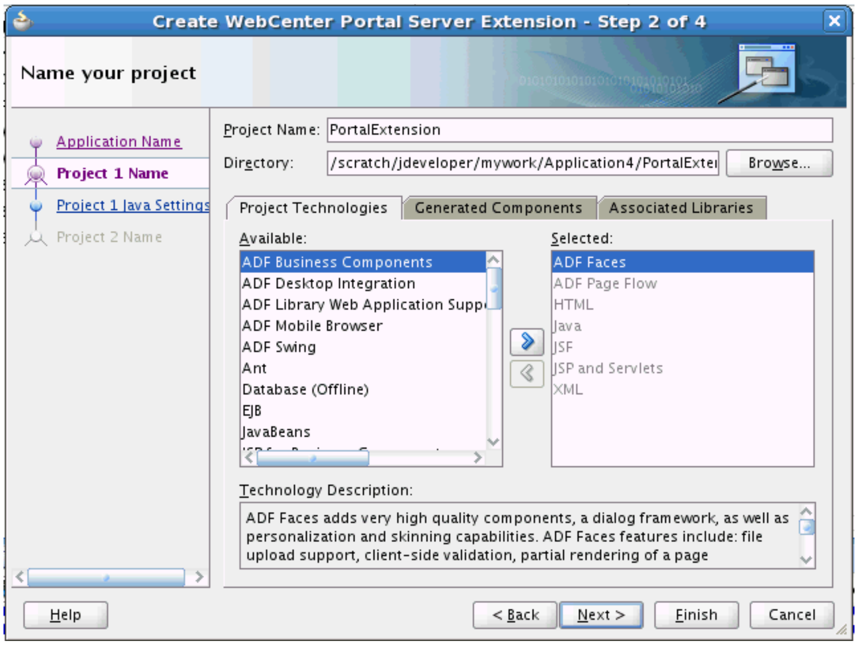
   > **Tip:** At this point, you could click **Finish** to create a project with default portal project names and directories. The following steps continue and review the rest of the wizard pages.

9. Click **Next**.

10. In the **Project 1 Name** part of the wizard, enter a **Project Name**, or keep the default name, **PortalExtension**, as shown in Figure 55–19.

    This project provides all of the project technology components that are required for building and testing custom ADF components for WebCenter Portal (task flows, data controls, and managed beans).

Figure 55–19 Create WebCenter Portal Server Extension Wizard Step 2 of 4



Project Name: PortalExtension

Directory: /scratch/jdeveloper/mywork/Application4/PortalExte

Available:

ADF Business Components
ADF Desktop Integration
ADF Library Web Application Supp
ADF Mobile Browser
ADF Swing
Ant
Database (Offline)
EJB
JavaBeans

Selected:

ADF Faces
ADF Page Flow
HTML
Java
JSF
JSP and Servlets
XML

Technology Description:

ADF Faces adds very high quality components, a dialog framework, as well as personalization and skinning capabilities. ADF Faces features include: file upload support, client-side validation, partial rendering of a page

11. If you want to change the default directory for the project, enter it or use the **Browse** button to select a directory.

12. Optionally add **Project Technologies**.

    Also called technology scopes, project technologies are a collection of libraries and files designed to provide specific functionality within a project.

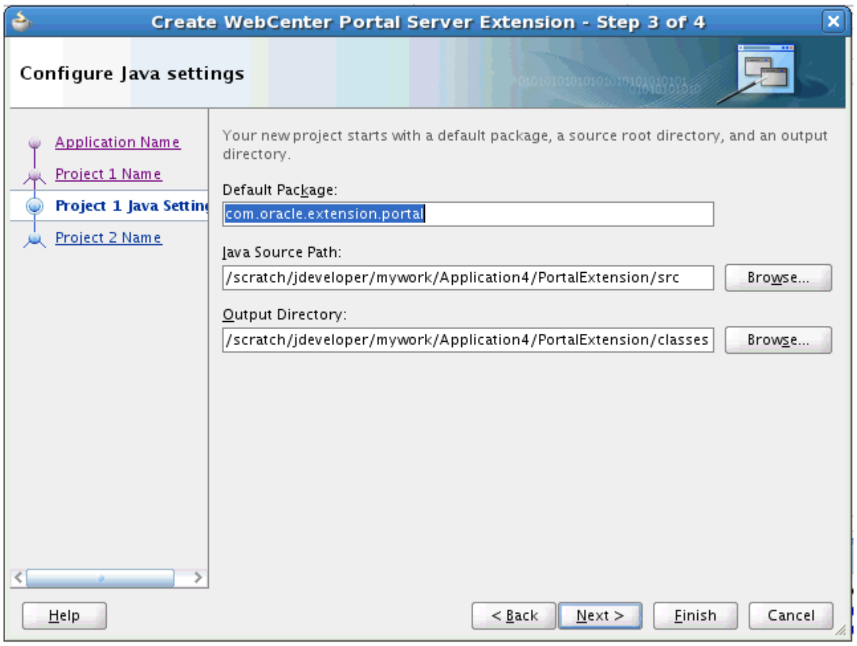
> **Note:** Technology scopes are attributes on the project that can be used to identify the different technologies used for that particular project. These attributes are used only within JDeveloper to assist you as you work. With technology scopes, the choices presented to you in the New Gallery and in the menus and palettes are filtered so that you see only those items that are most relevant to you as you work. Technology scopes have no effect on the data in the project itself. For more information, see refer to JDeveloper Online Help.

13. Optionally, select the **Generated Components** and **Associated Libraries** tabs to view additional configuration files and libraries that will be added to the project.

14. Click **Next**.

15. Optionally, edit the default package name and directories for Java source files and output class files for the project, as shown in Figure 55–21.

Figure 55–20 Create WebCenter Portal Server Extension Wizard Step 3 of 4



Create WebCenter Portal Server Extension - Step 3 of 4

Configure Java settings

Your new project starts with a default package, a source root directory, and an output directory.

Default Package: com.oracle.extension.portal

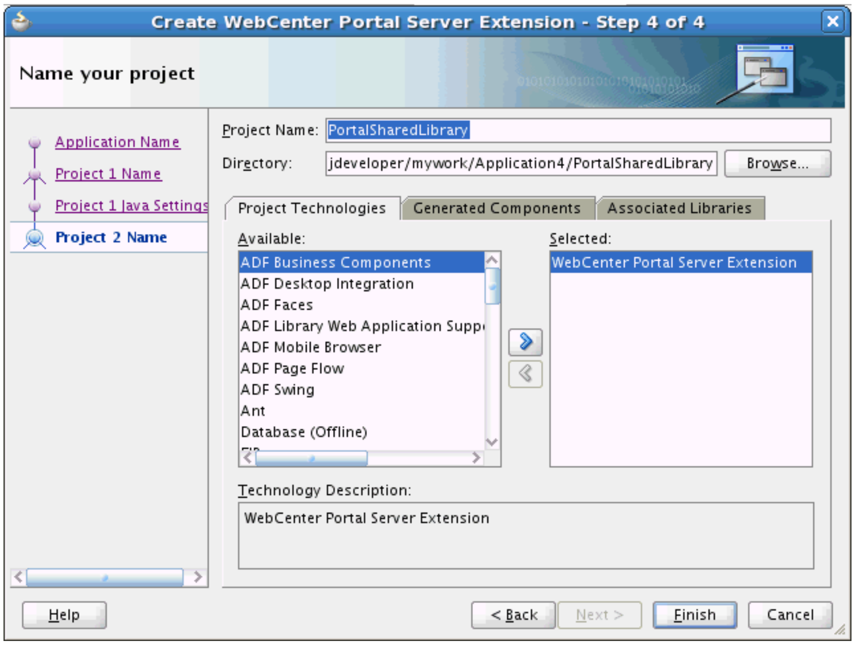
Java Source Path: /scratch/jdeveloper/mywork/Application4/PortalExtension/src

Output Directory: /scratch/jdeveloper/mywork/Application4/PortalExtension/classes

16. In the **Project 2 Name** part of the wizard, enter a project name, or keep the default name, **PortalSharedLibrary**, as shown in Figure 55–21.

    This project allows you to register one or more shared libraries that you want to use in WebCenter Portal, as well as deploy custom ADF components built using the PortalExtension project. See Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)"

Figure 55–21 Create WebCenter Portal Server Extension Wizard Step 4 of 4



Create WebCenter Portal Server Extension - Step 4 of 4

Name your project

Project Name: PortalSharedLibrary

Directory: jdeveloper/mywork/Application4/PortalSharedLibrary

Available:
ADF Business Components
ADF Desktop Integration
ADF Faces
ADF Library Web Application Supp
ADF Mobile Browser
ADF Page Flow
ADF Swing
Ant
Database (Offline)

Selected:
WebCenter Portal Server Extension

Technology Description:
WebCenter Portal Server Extension

17. If you want to change the default directory for the project, enter it or use the **Browse** button to select a directory.

18. Optionally add **Project Technologies**, also called technology scopes.

> **Note:** Technology scopes are attributes on the project that can be used to identify the different technologies used for that particular project. These attributes are used only within JDeveloper to assist you as you work. With technology scopes, the choices presented to you in the New Gallery and in the menus and palettes are filtered so that you see only those items that are most relevant to you as you work. Technology scopes have no effect on the data in the project itself. For more information, see refer to JDeveloper Online Help.

19. Optionally, select the **Generated Components** and **Associated Libraries** tabs to view additional configuration files and libraries that will be added to the project.
20. Click **Finish**.

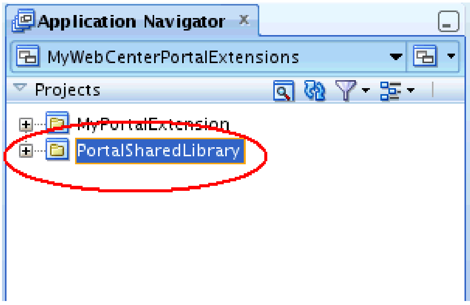
55.2.4 Registering Additional Shared Libraries With WebCenter Portal

If you have one or more shared libraries containing custom task flows, data controls or managed beans that you want to use them in WebCenter Portal, you must register them in the `weblogic.xml` file associated with WebCenter Portal's shared library `extend.spaces.webapp.war`.

1. Select the **PortalSharedLibrary** project (Figure 55–22).

   If you have not created a WebCenter Portal Extension workspace yet, refer to Section 55.2.3, "Creating a WebCenter Portal Server Extension Workspace".

Figure 55–22 PortalSharedLibrary Project



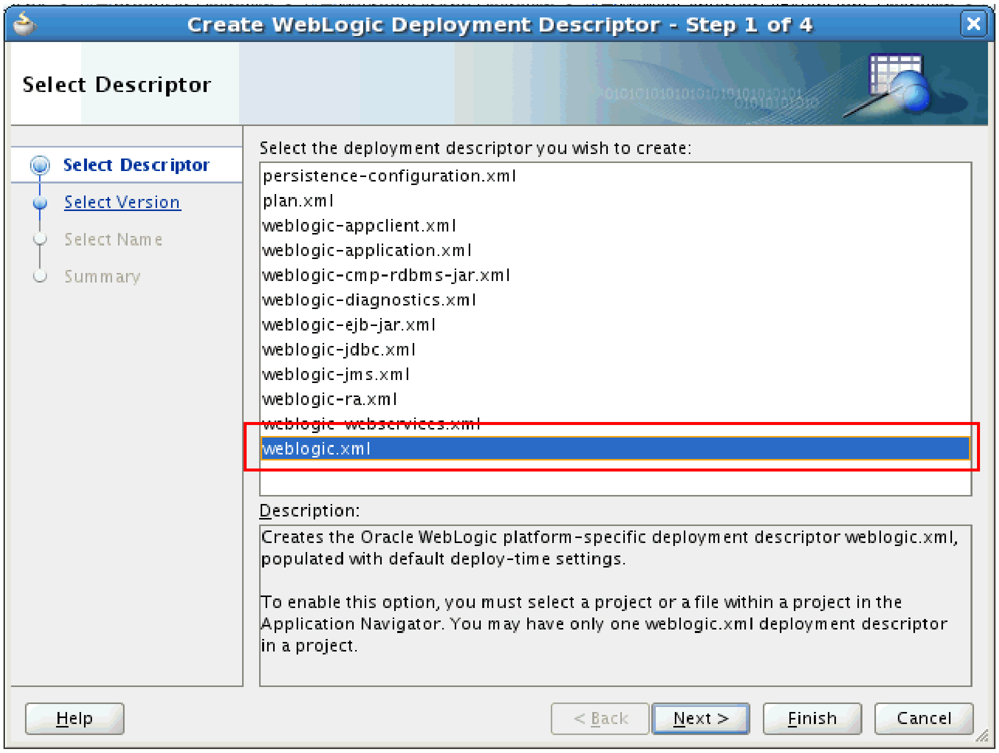
2. If the deployment descriptor **weblogic.xml** does not exist yet under **PortalSharedLibrary\Web Content\WEB-INF**, create the deployment descriptor as follows:

   a. Select **New > Deployment Descriptors > WebLogic Deployment Descriptor**

   b. Select **OK**.

   c. Select **weblogic.xml** from the list (Figure 55–23).

Figure 55–23 Create WebLogic Deployment Descriptor weblogic.xml



Select the deployment descriptor you wish to create:

persistence-configuration.xml
plan.xml
weblogic-appclient.xml
weblogic-application.xml
weblogic-cmp-rdbms-jar.xml
weblogic-diagnostics.xml
weblogic-ejb-jar.xml
weblogic-jdbc.xml
weblogic-jms.xml
weblogic-ra.xml
weblogic-webservices.xml
weblogic.xml

Description:

Creates the Oracle WebLogic platform-specific deployment descriptor weblogic.xml, populated with default deploy-time settings.

To enable this option, you must select a project or a file within a project in the Application Navigator. You may have only one weblogic.xml deployment descriptor in a project.

d. Select **Finish**.

3. Open **weblogic.xml** (under **PortalSharedLibrary\Web Content\WEB-INF**).

   Initially, no additional shared libraries are listed in the file.

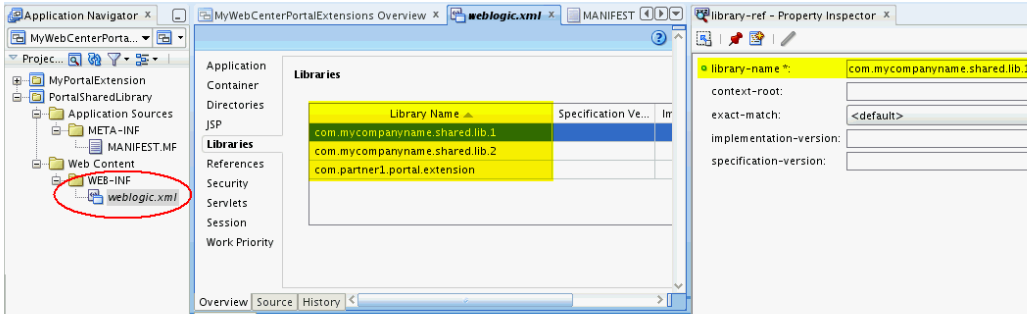
4. In the Overview page, select **Libraries**.

5. Specify the **Library Name** for each shared library that you want to use in WebCenter Portal.

   You can register a single shared library or multiple shared libraries, as shown in Figure 55–24.

   Click the Help icon for more information, if required.

Figure 55–24 weblogic.xml - Multiple Shared Library References



Libraries

Library Name	Specification Ve...	Im
com.mycompanyname.shared.lib.1		
com.mycompanyname.shared.lib.2		
com.partner1.portal.extension		

library-name *: com.mycompanyname.shared.lib.1
context-root:
exact-match: <default>
implementation-version:
specification-version:

6. Ensure each shared library that you reference is deployed on the WebCenter Portal managed server (named `WC_Spaces` by default).

7. Redeploy a new version of the WebCenter Portal shared library WAR (`extend.spaces.webapp.war`) that includes your shared library references.

   Remember to increment the version number in `MANIFEST.MF`. For details, see Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)".

55.2.5 Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)

This section explains how to deploy extensions to the WebCenter Portal shared library (`extend.spaces.webapp.war`) where your extensions are either:

- Existing shared libraries containing task flows, data controls, or managed beans that you have registered in `weblogic.xml`.

  See Section 55.2.4, "Registering Additional Shared Libraries With WebCenter Portal"
- An ADF Library JAR created from the **PortalExtension** project and included in the WebCenter Portal shared library.

  See Section 55.2.6, "Developing ADF Library Components for WebCenter Portal Using the PortalExtension Project"

This section includes the following topics:

- Section 55.2.5.1, "Deploying Extensions Directly to the Portal Server"
- Section 55.2.5.2, "Deploying Extensions to an Archive"
- Section 55.2.5.3, "Reverting to a Previous WebCenter Portal Shared Library Version"

55.2.5.1 Deploying Extensions Directly to the Portal Server

Before deploying extensions to WebCenter Portal from JDeveloper:

- Verify that you have at least the WebLogic `Monitor` role.

  For information on roles, see the "Users, Groups, And Security Roles" section in *Securing Resources Using Roles and Policies for Oracle WebLogic Server*.
- Ensure a connection exists to the managed server that is running WebCenter Portal.

  For information about creating a connection see Chapter 7.3.3.4, "Creating a WebLogic Managed Server Connection."
- Review background information on shared libraries in the "Creating Shared Java EE Libraries and Optional Packages" section in *Developing Applications for Oracle WebLogic Server*.

To deploy extensions for WebCenter Portal from JDeveloper:

1. In JDeveloper, open the workspace containing extensions to be deployed.

   See also Section 55.2.4, "Registering Additional Shared Libraries With WebCenter Portal" and Section 55.2.6, "Developing ADF Library Components for WebCenter Portal Using the PortalExtension Project".
2. In the Application Navigator, navigate to the **PortalSharedLibrary** > **Application Sources** > **META-INF** folder.
3. Open the `MANIFEST.MF` file in a text editor.

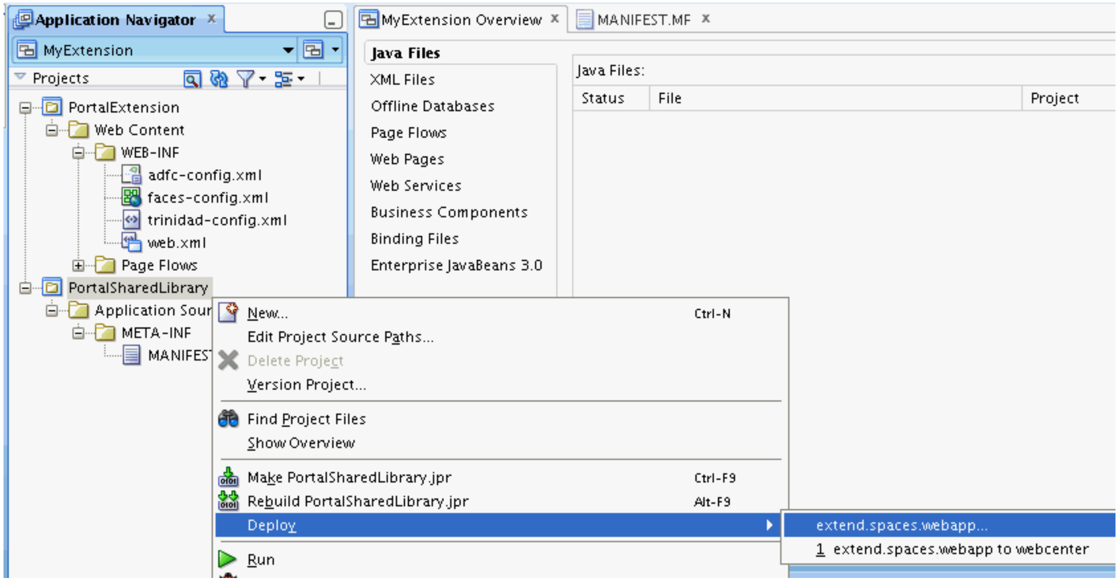
4. Increment the `Implementation-Version` number. The default version is **Implementation-Version: 11.1.2**.

> **Note:** You must increment the shared library `Implementation-Version` number each time you update and redeploy the WebCenter Portal shared library `extend.spaces.webapp.war`. Otherwise, an error is reported from WebLogic Server in the Deployment - Log tab. For more information, see Section 55.2.1.2, "The PortalSharedLibrary Project."

5. In the Application Navigator, right-click the **PortalSharedLibrary** project, select **Deploy**, and then select **extend.spaces.webapp** (Figure 55–25).

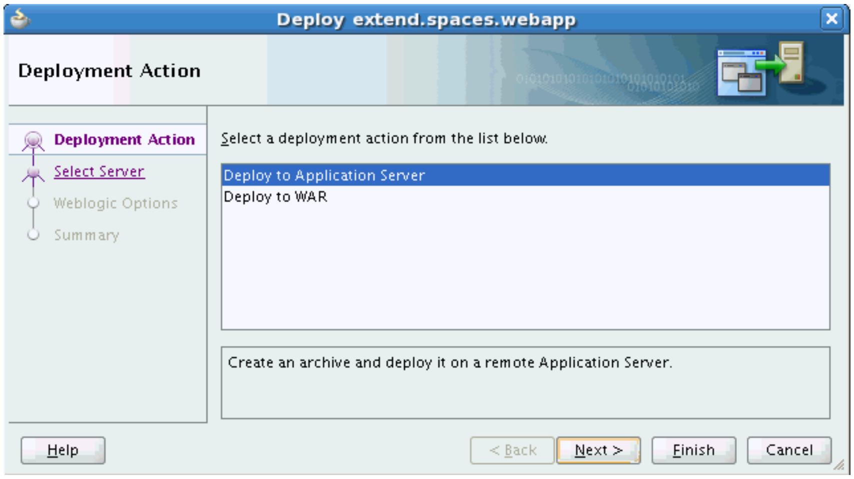
> **Note:** Note that `extend.spaces.webapp` is the name of the deployment profile for the shared library that you are deploying to the server. The shared library created by a subsequent deployment action is called `extend.spaces.webapp.war`.

Figure 55–25 Selecting the Shared Library extend.spaces.webapp



6. In the Deploy dialog, select **Deploy to Application Server** and click **Next** (Figure 55–26).

Figure 55–26 Portal Extension Deployment Actions



Select a deployment action from the list below.

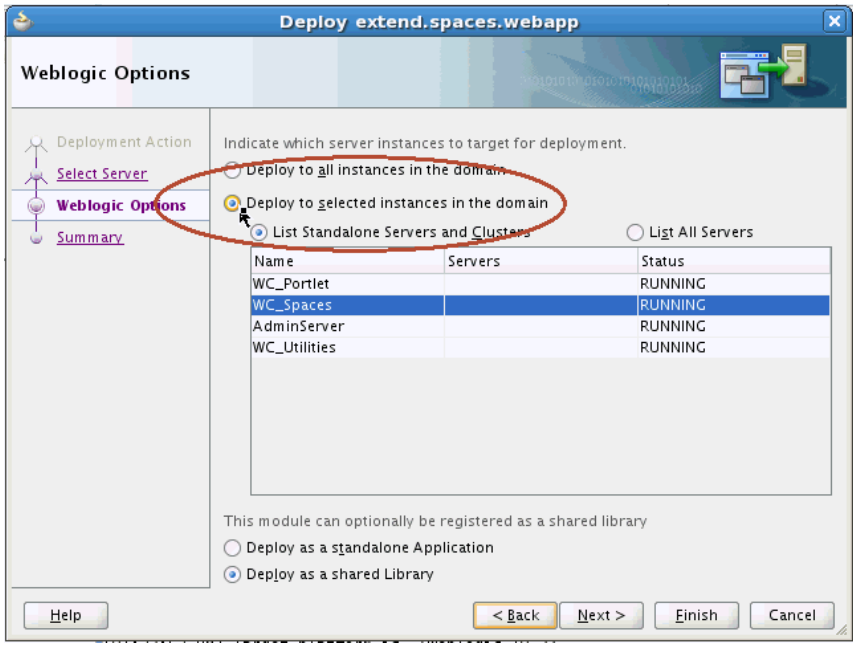
- Deploy to Application Server
- Deploy to WAR

Create an archive and deploy it on a remote Application Server.

7. Select the connection that points to the WebLogic Server where you want to deploy the shared library, for example, `WC_Spaces`, and click **Next**.

8. In the Deploy extend.spaces.webapp dialog, select **Deploy to selected instances in the domain**, as shown in Figure 55–27.

Figure 55–27 Selecting Deployment Option



Indicate which server instances to target for deployment.

○ Deploy to all instances in the domain

● Deploy to selected instances in the domain

● List Standalone Servers and Clusters ○ List All Servers

Name	Servers	Status
WC_Portlet		RUNNING
WC_Spaces		RUNNING
AdminServer		RUNNING
WC_Utilities		RUNNING

This module can optionally be registered as a shared library

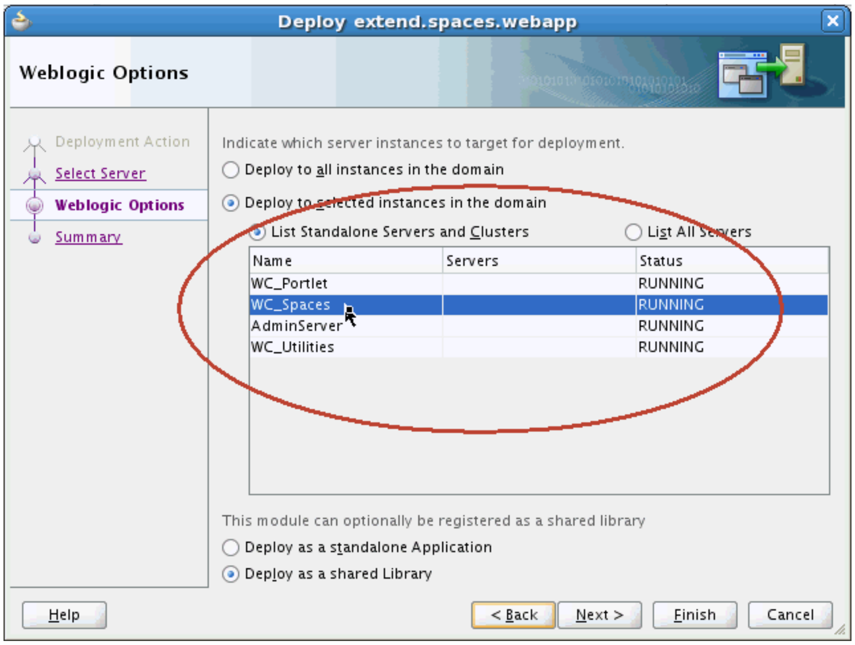
○ Deploy as a standalone Application

● Deploy as a shared Library

9. In the list of servers, select the managed server on which WebCenter Portal is deployed, as shown in Figure 55–28.

Note: The name of the managed server depends on how the system administrator set up the server. By default, the name is `WC_Spaces`; however, this name might be different on your system.

Figure 55–28 Selecting the Managed Server



Deploy extend.spaces.webapp

Weblogic Options

Indicate which server instances to target for deployment.

○ Deploy to all instances in the domain

● Deploy to selected instances in the domain

● List Standalone Servers and Clusters ○ List All Servers

Name	Servers	Status
WC_Portlet		RUNNING
WC_Spaces		RUNNING
AdminServer		RUNNING
WC_Utilities		RUNNING

This module can optionally be registered as a shared library

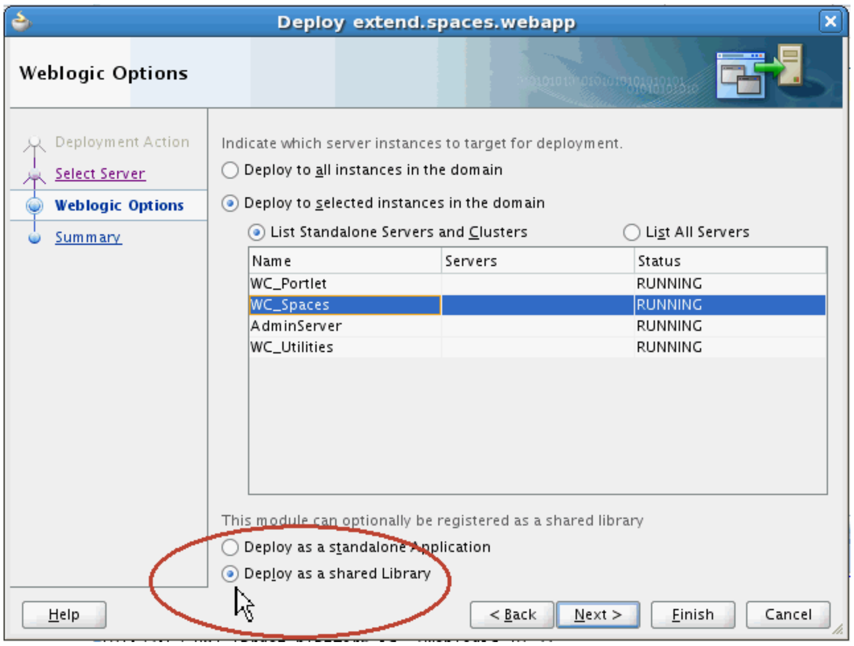
○ Deploy as a standalone Application

● Deploy as a shared Library

10. Select **Deploy as a shared library**, as shown in Figure 55–29

Note: This step is critical: you *must* select **Deploy as a shared library**, otherwise, the deployment will not be successful.

Figure 55–29 Selecting Deploy As Shared Library



Deploy extend.spaces.webapp

Weblogic Options

Indicate which server instances to target for deployment.

○ Deploy to all instances in the domain

● Deploy to selected instances in the domain

● List Standalone Servers and Clusters ○ List All Servers

Name	Servers	Status
WC_Portlet		RUNNING
WC_Spaces		RUNNING
AdminServer		RUNNING
WC_Utilities		RUNNING

This module can optionally be registered as a shared library

○ Deploy as a standalone Application

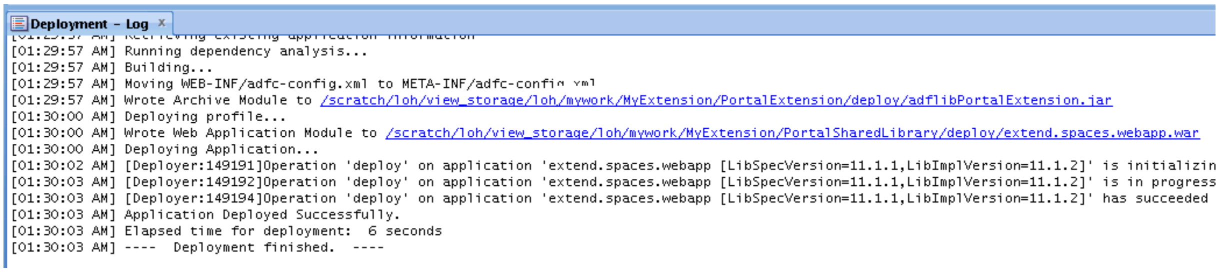
● Deploy as a shared Library

11. Click **Next**.

12. On the Deployment Summary screen, verify the deployment options, and click **Finish** to deploy the portal extension to the server.

13. Open the Deployment -Log tab to examine for any deployment issues. If deployment is successful, you should see this log entry: "`Application Deployed Successfully,`" as shown in Chapter 55–30, "Deployment - Log Tab."

Figure 55–30 Deployment - Log Tab



```
[01:29:57 AM] Retrieving existing application information
[01:29:57 AM] Running dependency analysis...
[01:29:57 AM] Building...
[01:29:57 AM] Moving WEB-INF/adfc-config.xml to META-INF/adfc-config.xml
[01:29:57 AM] Wrote Archive Module to /scratch/loh/view_storage/loh/mywork/MyExtension/PortalExtension/deploy/adflibPortalExtension.jar
[01:30:00 AM] Deploying profile...
[01:30:00 AM] Wrote Web Application Module to /scratch/loh/view_storage/loh/mywork/MyExtension/PortalSharedLibrary/deploy/extend.spaces.webapp.war
[01:30:00 AM] Deploying Application...
[01:30:02 AM] [Deployer:149191]Operation 'deploy' on application 'extend.spaces.webapp [LibSpecVersion=11.1.1,LibImplVersion=11.1.2]' is initializin
[01:30:03 AM] [Deployer:149192]Operation 'deploy' on application 'extend.spaces.webapp [LibSpecVersion=11.1.1,LibImplVersion=11.1.2]' is in progress
[01:30:03 AM] [Deployer:149194]Operation 'deploy' on application 'extend.spaces.webapp [LibSpecVersion=11.1.1,LibImplVersion=11.1.2]' has succeeded
[01:30:03 AM] Application Deployed Successfully.
[01:30:03 AM] Elapsed time for deployment:  6 seconds
[01:30:03 AM] ----  Deployment finished.  ----
```

14. To verify the new deployment, log in to the WebLogic Server Administration Console, navigate to the Deployments Overview page, and check the implementation version displayed.

    a. Log in to the WebLogic Server Administration Console.

    b. Click **Deployments**, and locate **extend.spaces.webapp**.

    c. Note the entries for the `extend.spaces.webapp` shared library and verify the one with the implementation version that you updated previously in the `MANIFEST.MF` file. See also Section 55.2.1.2.1, "Versioning extend.spaces.webapp.war."

    Note: WebLogic Server only uses the latest shared library version when an application starts up. If you go through several "change-build-deploy-test" iterations, incremental versions are retained by default. You can use the Administration Console to remove unwanted shared library versions if you want, but it is recommended that you retain the first version (`extend.spaces.webapp(11.1.1,11.1.1)`) as a backup so you can revert to the default behavior if necessary.

15. (Optional) Create any connections that your custom ADF Library components may require:

    - To add a database connection, refer to the "Creating and Managing JDBC Data Sources" section in *Administrator's Guide*.
    - To add a Web Service connection, configure the ADFConnections MBean using the System MBean Browser in Fusion Middleware Control. Refer to the "System MBean Browser" section in *Administering Oracle WebCenter Portal* and the "Web Service Connection" section in the *Administrator's Guide for Oracle Application Development Framework*.
    - To add a connection type specific to WebCenter Portal, for example to a portlet producer or content repository connection, refer to the "Managing Tools and Services" section in *Administering Oracle WebCenter Portal*.

16. Restart the managed server on which WebCenter Portal is running.

    This step is required for the task flows, data controls, and managed beans in the shared library to show up in the WebCenter Portal Resource Registry. For more information, see the "Starting and Stopping Managed Servers for WebCenter Portal Application Deployments" section in *Administering Oracle WebCenter Portal*.

> **Note:** The name of the managed server depends on how the system administrator set up the server. By default, the name is WC_Spaces; however, this name might be different on your system.

17. Log in to WebCenter Portal and verify that all newly deployed task flows, data controls, or managed beans are available in the Resource Registry.

Once successfully deployed components are added to the Resource Registry, you can add them to resource catalogs where they are made available for drag and drop onto portal pages. See also, the "About the Resource Registry" section in *Building Portals with Oracle WebCenter Portal*.

55.2.5.2 Deploying Extensions to an Archive

If you do not have a connection to the portal server or permissions to deploy the `extend.spaces.webapp` shared library on the portal server, you can deploy extensions to the `extend.spaces.webapp` shared library to an archive (`.war` file) and give the `.war` file to an administrator for deployment to a managed server running WebCenter Portal.

To deploy extensions to the `extend.spaces.webapp` shared library to an archive:

1. In JDeveloper, open the workspace containing extensions to be deployed.

   See also Section 55.2.4, "Registering Additional Shared Libraries With WebCenter Portal" and Section 55.2.6, "Developing ADF Library Components for WebCenter Portal Using the PortalExtension Project".

2. In the Application Navigator, navigate to the **PortalSharedLibrary** > **Application Sources** > **META-INF** folder.

3. Open the `MANIFEST.MF` file in a text editor.

4. If required, increment the `Implementation-Version` number. The default version is **Implementation-Version: 11.1.2**.

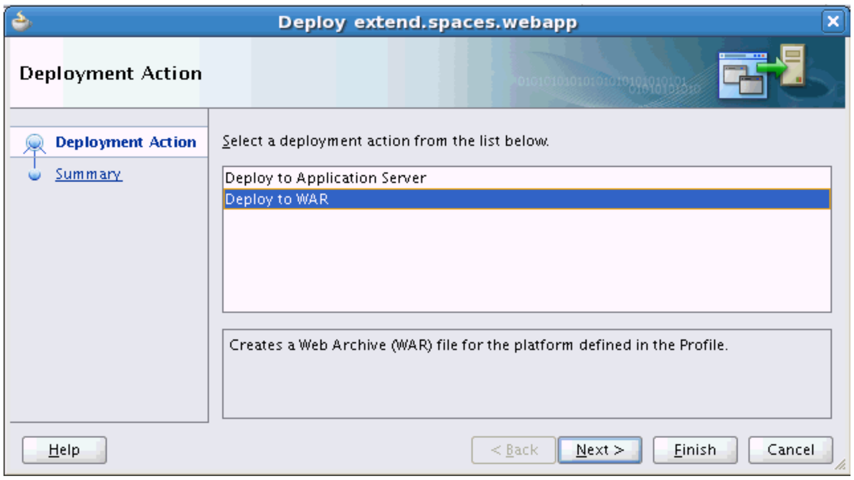
   > **Note:** You do not need to increment the version number every time you generate a new archive (`.war` file). You must however, increment the shared library `Implementation-Version` number each time you deploy a new extension version *to the server* or an error is reported from WebLogic Server in the Deployment - Log tab. For more information, see Section 55.2.1.2, "The PortalSharedLibrary Project."

5. In the Application Navigator, right-click the **PortalSharedLibrary** project, select **Deploy** and then select the deployment profile **extend.spaces.webapp**.

   > **Note:** Note that `extend.spaces.webapp` is the name of the deployment profile for the shared library that you are deploying to a file. The shared library created by a subsequent deployment action is called `extend.spaces.webapp.war`.

6. In the Deploy dialog, select **Deploy to WAR,** and then click **Next** (Figure 55–31).

Figure 55–31 Deployment Actions



Select a deployment action from the list below.

Deploy to Application Server
Deploy to WAR

Creates a Web Archive (WAR) file for the platform defined in the Profile.

7. Review the Summary page and click **Finish**.

   The location of the `.war` file displays in the "Deployment - Log Tab." This new shared library `.war` file version can now be deployed to any server instance on which WebCenter Portal is deployed.

For More Information

See "Deploying Applications" in JDeveloper Online Help. See also the "Creating Shared Java EE Libraries and Optional Packages" section in *Developing Applications for Oracle WebLogic Server*.

55.2.5.3 Reverting to a Previous WebCenter Portal Shared Library Version

If there is a problem with the latest WebCenter Portal shared library or you want to revert to a previous version for some reason, you can undeploy (remove) the current version and revert to the previous version, using the WebLogic Server Administration Console.

You can remove unwanted shared library versions too. If you go through several "change-build-deploy-test" iterations, each incremental version is retained by default. As WebCenter Portal only uses the latest shared library version you can clean up or delete previous versions if you want.

Before undeploying the latest version, you must shut down the managed server on which WebCenter Portal is running. Once you have removed the latest version, you can restart the managed server.

Note: Oracle recommends that you do not delete the original `extend.spaces.webapp` shared library (version 11.1.1) as this enables you to revert to the out-the-box version if necessary.

1. Stop the managed server on which WebCenter Portal is deployed.

   For details, see the "Starting and Stopping Managed Servers for WebCenter Portal Application Deployments" section in *Administering Oracle WebCenter Portal*.

2. Log in to the Weblogic Server Administration Console.
3. Click **Deployments**, then locate and select the latest **extend.spaces.webapp** version you want to remove.
4. Click **Delete** to undeploy the latest shared library version.

To revert to the *original* `extend.spaces.webapp.war` shared library, delete all other shared library versions, except for `extend.spaces.webapp.war` version 11.1.1.

5. Start the managed server on which WebCenter Portal is deployed:

   For details, see the "Starting and Stopping Managed Servers for WebCenter Portal Application Deployments" section in *Administering Oracle WebCenter Portal*.

55.2.6 Developing ADF Library Components for WebCenter Portal Using the PortalExtension Project

Developing an ADF Library for WebCenter Portal is exactly the same as any other ADF Library. If you are not familiar with ADF library development, refer to the documentation links in Section 55.2.2.1, "General Documentation for ADF Library Development".

Development teams typically build and deploy ADF libraries to a set of well defined shared libraries that they can reuse across multiple applications, such as WebCenter Portal.

To help you get started, Oracle provides the *PortalExtension* project in which you can build ADF libraries containing task flows, data controls, and managed beans and deploy them to WebCenter Portal's own shared library `extend.spaces.webapp.war`.

If you want to use the PortalExtension project, follow these steps:

1. Create a WebCenter Portal Server Extension workspace.

   For details, see Section 55.2.3, "Creating a WebCenter Portal Server Extension Workspace".

2. Open the **PortalExtension** project and add the custom code for your ADF library.

   See also Section 55.2.1.3, "The PortalExtension Project".

3. Deploy the ADF Library to the WebCenter Portal shared library `extend.spaces.webapp.war`.

   See also Section 55.2.5, "Deploying Extensions to the WebCenter Portal Shared Library (extend.spaces.webapp.war)".

55.2.7 Troubleshooting WebCenter Portal Shared Library Deployment

- **Changes are not available after deployment even though deployment successful**.

  WebCenter Portal always uses the latest shared library version. Check that the implementation version in `MANIFEST.MF` matches the implementation version displayed in the WebLogic Server Administration Console.

  For example, check the value in `PortalSharedLibrary/Application Sources/META-INF/MANIFEST.MF` is the same as that displayed in the Administration Console under **Deployments> extend.spaces.webapp>Overview**

- **"DeployerException: Task 9 failed" displays:**

  ```
  weblogic.Deployer$DeployerException:
  weblogic.deploy.api.tools.deployer.DeployerException: Task 9 failed:
  [Deployer:149117]deploy library com.mycompanyname.shared.lib
  [LibSpecVersion=11.1.1.2,LibImplVersion=11.1.1.2.5] on AdminServer,WC_Spaces.
  ```

  This error occurs if the implementation version of the new deployment and the existing deployment are the same. Use the Administration Console to verify the current implementation version and if necessary change the version and redeploy the shared library.

- **"java.lang.IllegalArgumentException" displays**:

  Restart the managed server on which WebCenter Portal is deployed.

56 Integrating with WebCenter Portal

This chapter describes how to expose portal functionality in a Portal Framework application, using the WebCenter Portal API. Through this API, you can create new portals, manage portal membership, retrieve portal information, and more, from your Portal Framework applications. This chapter also describes how to expose information from other applications, such as Portal Framework applications in portals.

This chapter includes the following sections:

- Section 56.1, "Exposing Portals in Your Application Using the WebCenter Portal API"
- Section 56.2, "Using the WebCenter Portal REST API"
- Section 56.3, "Exposing Enterprise Applications in Portals"

Note: Custom-built task flows that implement the WebCenter Portal API (described in this chapter) can be deployed on Portal Framework applications, but you cannot deploy them to a WebCenter Portal application.

56.1 Exposing Portals in Your Application Using the WebCenter Portal API

This section includes the following subsections:

- Section 56.1.1, "Introduction to the WebCenter Portal API"
- Section 56.1.2, "Case Study 1: Purchasing Application Uses a Portal to Evaluate Suppliers"
- Section 56.1.3, "Case Study 2: Customer Support Center Application Uses a Portal to Discuss Customer Escalations"
- Section 56.1.4, "How to Set Up Your Framework Application to Use the WebCenter Portal API"
- Section 56.1.5, "Providing WebCenter Portal Functionality in Your Portal Framework Application"
- Section 56.1.6, "How to Handle Exceptions Raised by the WebCenter Portal API"
- Section 56.1.7, "Finding More Information on the WebCenter Portal API"
- Section 56.1.8, "Troubleshooting Issues with the WebCenter Portal API"

56.1.1 Introduction to the WebCenter Portal API

While using your Portal Framework application, users may encounter situations where portal functionality would be useful to help them complete a particular task. In such cases, it would be much less disruptive to remain within the context of the current application, rather than having to switch to WebCenter Portal. To this end, WebCenter Portal provides access to a subset of its functionality through an API. Using the API's classes and methods, you can integrate powerful portal functionality into your Framework application.

You can use the WebCenter Portal API to:

- **Create and manage portals and portal templates.** You can create and delete portals, and add custom attributes. For more information, see Section 56.1.5.1, "Managing Portals and Portal Templates."
- **Manage portal membership.** You can add and remove portal members. For more information, see Section 56.1.5.2, "Managing Portal Membership."
- **Retrieve information about portals and portal templates.** For example, you can retrieve a portal's URL or the URL of a specific portal. You can also retrieve portal and portal template metadata. For more information, see Section 56.1.5.3, "Retrieving Information for Portals and Portal Templates."

Portal methods are contained within several classes. Table 56–1 lists the different classes and describes the purpose of the methods within each class.

Table 56–1 WebCenter Portal API Classes

Class	Contains Methods for	More Information
`GroupSpaceWSClient`	Creating and managing portals and portal templates Managing portal membership Retrieving portal information	Section 56.1.5, "Providing WebCenter Portal Functionality in Your Portal Framework Application"
`GroupSpaceWSContext`	Establishing context before calling other API methods	Section 56.1.4.4, "Setting Up the WebCenter Portal Client Context"
`GroupSpaceWSException`	Managing exceptions raised by the API	Section 56.1.6, "How to Handle Exceptions Raised by the WebCenter Portal API"
`GroupSpaceWSMembers`	Retrieving information about portal members	Section 56.1.5.3, "Retrieving Information for Portals and Portal Templates"
`GroupSpaceWSMetadata`	Retrieving portal information	Section 56.1.5.3, "Retrieving Information for Portals and Portal Templates"

From your perspective, as a Portal Framework developer, here are a couple of case studies describing scenarios where building and working with WebCenter Portal through its API may be useful:

- In a purchasing application, a purchasing manager may create a portal to discuss the suitability of a new supplier. For more information, see Section 56.1.2, "Case Study 1: Purchasing Application Uses a Portal to Evaluate Suppliers."
- In a Customer Support Center application, a support analyst may create a portal to collaborate with other users about a customer escalation. For more information,

see Section 56.1.3, "Case Study 2: Customer Support Center Application Uses a Portal to Discuss Customer Escalations."

56.1.2 Case Study 1: Purchasing Application Uses a Portal to Evaluate Suppliers

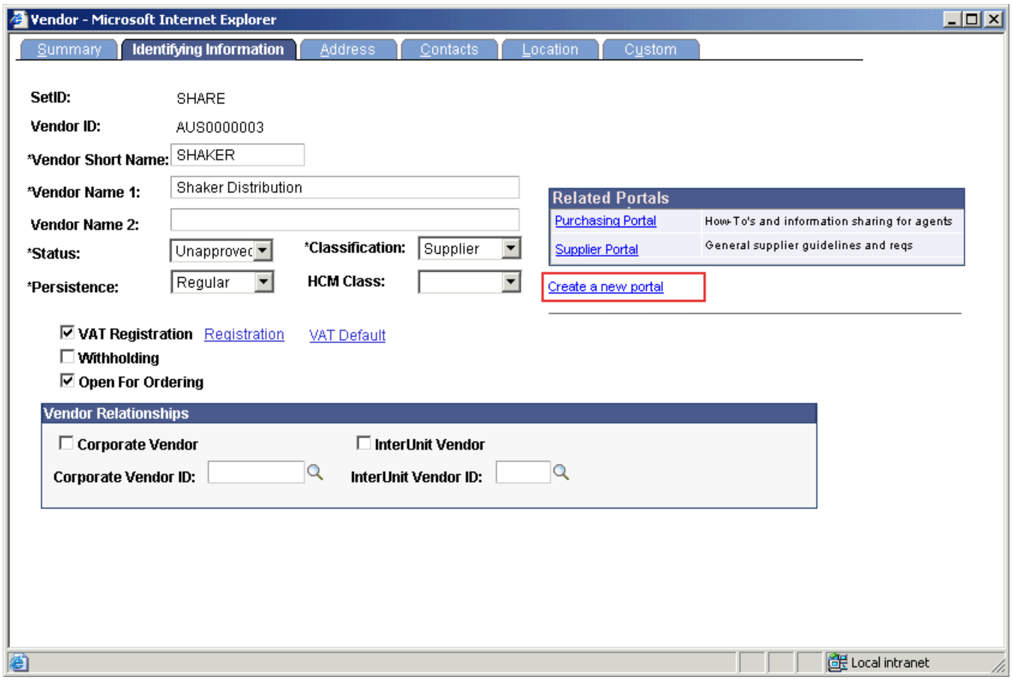
Consider a purchasing application built using the WebCenter Portal Framework. This application tracks suppliers, pricing, lead-time requirements, delivery time estimates, and performance history.

Users of the purchasing application must also be able to select and evaluate supplier candidates. Supplier evaluation is a collaborative process; it requires people from various areas of a company. For example, a design engineer and manufacturing representative must verify that an item being purchased meets the required technical specifications; a purchasing agent can negotiate prices, logistics and contractual issues; and a manager or executive has to approve the deal. How could the purchasing application initiate supplier evaluations?

Typically, the purchasing manager receives a purchase requisition from the manufacturing department. Sometimes the purchase order cannot be completed because the requisition cannot be delivered by the usual supplier in the time frame required by manufacturing. Therefore, a new supplier that can meet delivery and pricing requirements must be determined. The purchasing manager can add a candidate supplier into the system but the purchasing manager needs a way to organize and share information, and collaborate with people in and outside his team so that he can assess the supplier.

A portal can provide this collaborative environment. So the purchasing application includes a call to the `createGroupSpace` method, and this enables the purchasing manager to click a link (**Create a New Portal**) that displays a "Create Portal" dialog, directly from the purchasing application, as shown in Figure 56–1.

Figure 56–1 Purchasing Application Includes a Portal Creation Link



SetID: SHARE

Vendor ID: AUS0000003

*Vendor Short Name: SHAKER

*Vendor Name 1: Shaker Distribution

Vendor Name 2:

*Status: Unapprovec

*Classification: Supplier

*Persistence: Regular

HCM Class:

Related Portals

Purchasing Portal	How-To's and information sharing for agents
Supplier Portal	General supplier guidelines and reqs

Create a new portal

☑ VAT Registration Registration VAT Default

☐ Withholding

☑ Open For Ordering

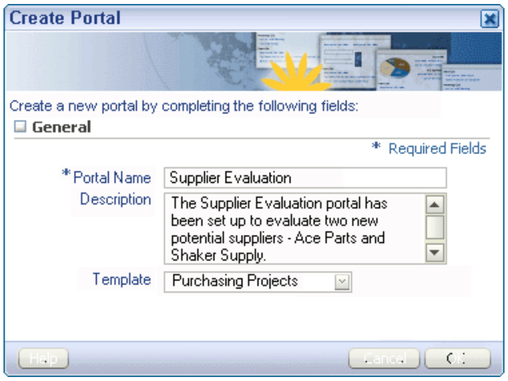
Vendor Relationships

☐ Corporate Vendor ☐ InterUnit Vendor

Corporate Vendor ID: InterUnit Vendor ID:

When the purchasing manager clicks the link a custom dialog prompts him for some information. The purchasing manager enters a name and description for the portal, and also selects a template (Purchasing Projects) as shown in Figure 56–2. The Purchasing Projects template sets up the portal quickly so it is ready to use right away. For example, the template defines which services are required (events, a document library, and so on) and any custom pages that may be required. Because the API enables you to create your own "Create Portal" dialog, you can apply your own look and feel and terminology.

Figure 56–2 Custom Create Portal Dialog



Create Portal

Create a new portal by completing the following fields:

General

* Required Fields

*Portal Name: Supplier Evaluation

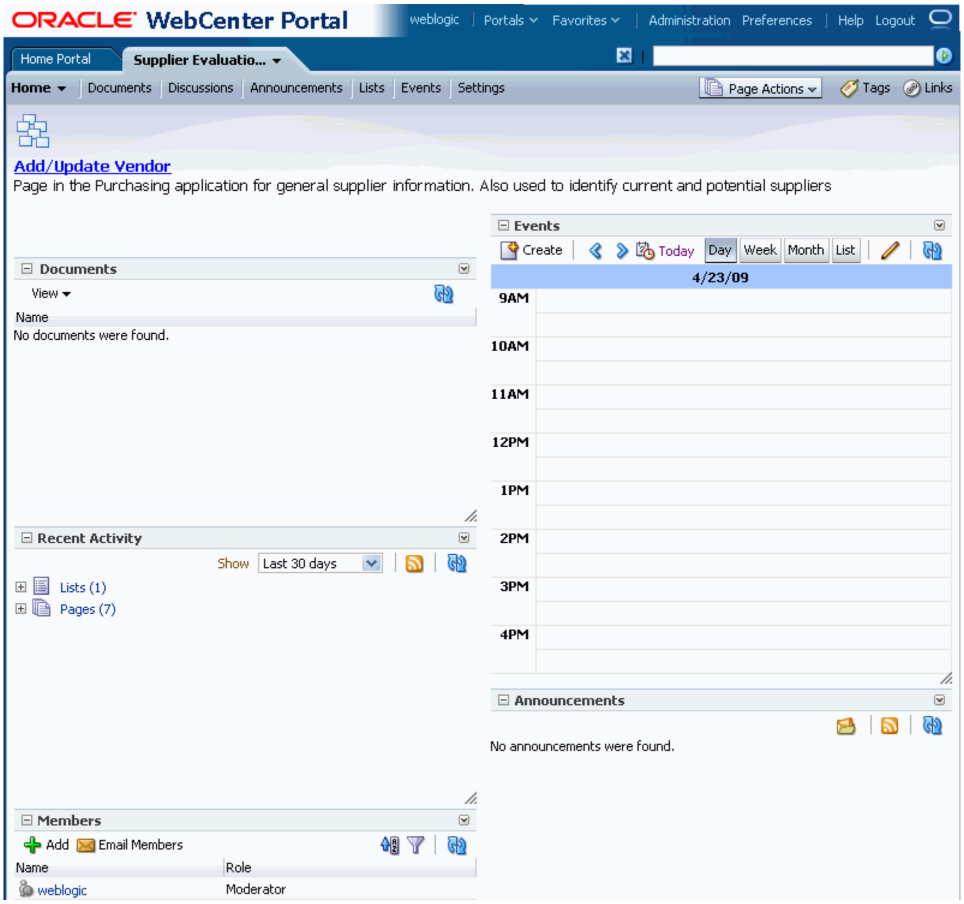
Description: The Supplier Evaluation portal has been set up to evaluate two new potential suppliers - Ace Parts and Shaker Supply.

Template: Purchasing Projects

In this scenario, the purchasing manager chooses the Purchasing Projects template from the template list. Another approach would be to have the purchasing application pass in a default template value. With this additional default, there would be one less thing (determining which template to use) for the purchasing manager to think about. You could even generate the name of the portal from the Supplier ID so that the purchasing manager would not have to enter any details at all. The portal could then be created with just the click of a link.

When the purchasing manager clicks **OK**, the new Supplier Evaluation portal displays, similar to that shown in Figure 56–3.

Figure 56–3 Supplier Evaluation Portal



Add/Update Vendor

Page in the Purchasing application for general supplier information. Also used to identify current and potential suppliers

4/23/09

Name

No documents were found.

Last 30 days

No announcements were found.

Name	Role
weblogic	Moderator

Figure 56–3 shows a Home page for the Supplier Evaluation portal, which includes an events calendar, documents the group may find useful, an area for announcements, and so on. Each of these areas was determined by the Purchasing Projects template. In addition a link to the purchasing application transaction instance from which the portal was created is also provided. Clicking this link (**Add/Update Vendors**) displays the screen Add/Update Vendor Transaction for the supplier Shaker Distribution.

In the portal, the purchasing manager becomes the moderator of the portal automatically. The moderator can add content to the portal, initiate discussions, invite members, and collaborate with interested parties. Once consensus is reached regarding the supplier, the purchasing manager can approve or reject that supplier.

56.1.3 Case Study 2: Customer Support Center Application Uses a Portal to Discuss Customer Escalations

Consider a Customer Support Center application built using the Oracle WebCenter Portal Framework that tracks customer calls and issues.

A support analyst is notified that a customer has escalated the service request that the analyst has been working on. The analyst knows that she can find a quicker resolution to the issue if she can involve other people from different areas of the company. For example:

- The project manager whose team implemented the project can provide more in depth knowledge of the project.

- An account manager who has been in constant touch with the customer can provide specific information about the implementation of the project at the customer site.
- Another support analyst, who has worked on a similar escalation before, can provide information about how that escalation was resolved.

This problem can be solved collaboratively using a portal. The support analyst creates a portal from within the Customer Support Center application and adds the required members. These members are then notified and use the portal to start discussing the customer situation. The support analyst views their updates to the portal inside the support application, navigating to the portal whenever necessary to obtain more specific details. Based on the information she gets from the other members of the portal, she can diagnose the problem and offer the customer a solution very quickly.

56.1.4 How to Set Up Your Framework Application to Use the WebCenter Portal API

Before you can use the WebCenter Portal API you must ensure that WebCenter Portal is up and running and that your project is set up correctly in JDeveloper.

This section includes the following subsections:

- Section 56.1.4.1, "Verifying That WebCenter Portal Is Up and Running"
- Section 56.1.4.2, "Setting Up WebCenter Portal to Use the WebCenter Portal API"
- Section 56.1.4.3, "Securing the Connection Between the Portal Framework Application and WebCenter Portal"
- Section 56.1.4.4, "Setting Up the WebCenter Portal Client Context"

56.1.4.1 Verifying That WebCenter Portal Is Up and Running

If you want to use the WebCenter Portal API, WebCenter Portal must be up and running.

To verify that WebCenter Portal is up and running:

1. Start WebCenter Portal. The URL is:

   ```
   http://host:port/webcenter
   ```

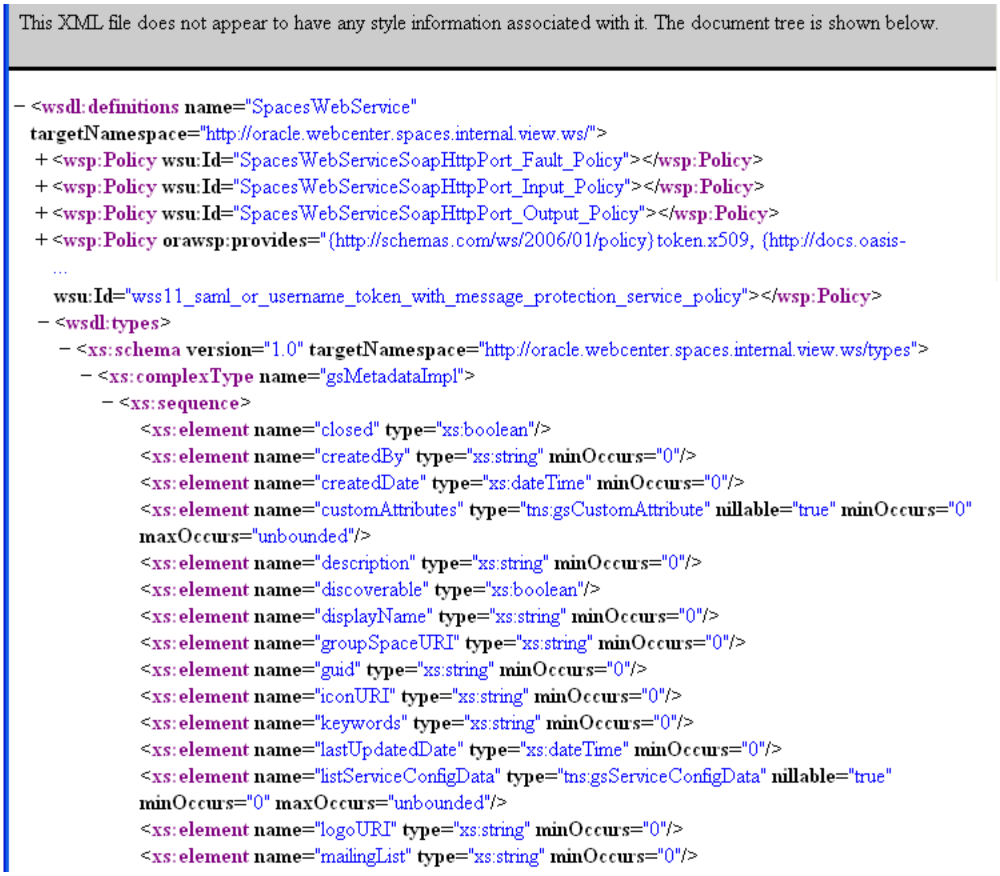
   You do not need to log in.

2. Verify that the WebCenter Portal Web service is up and running. The URL is:

   ```
   http://host:port/webcenter/SpacesWebService?WSDL
   ```

   You should see a page similar to the one shown in Figure 56–4. If you do not see this page, contact your Fusion Middleware administrator.

Figure 56–4 SpacesWebService WSDL



```
This XML file does not appear to have any style information associated with it. The document tree is shown below.

- <wsdl:definitions name="SpacesWebService"
  targetNamespace="http://oracle.webcenter.spaces.internal.view.ws/">
  + <wsp:Policy wsu:Id="SpacesWebServiceSoapHttpPort_Fault_Policy"></wsp:Policy>
  + <wsp:Policy wsu:Id="SpacesWebServiceSoapHttpPort_Input_Policy"></wsp:Policy>
  + <wsp:Policy wsu:Id="SpacesWebServiceSoapHttpPort_Output_Policy"></wsp:Policy>
  + <wsp:Policy orawsp:provides="{http://schemas.com/ws/2006/01/policy}token.x509, {http://docs.oasis-
    ...
    wsu:Id="wss11_saml_or_username_token_with_message_protection_service_policy"></wsp:Policy>
  - <wsdl:types>
    - <xs:schema version="1.0" targetNamespace="http://oracle.webcenter.spaces.internal.view.ws/types">
      - <xs:complexType name="gsMetadataImpl">
        - <xs:sequence>
            <xs:element name="closed" type="xs:boolean"/>
            <xs:element name="createdBy" type="xs:string" minOccurs="0"/>
            <xs:element name="createdDate" type="xs:dateTime" minOccurs="0"/>
            <xs:element name="customAttributes" type="tns:gsCustomAttribute" nillable="true" minOccurs="0"
            maxOccurs="unbounded"/>
            <xs:element name="description" type="xs:string" minOccurs="0"/>
            <xs:element name="discoverable" type="xs:boolean"/>
            <xs:element name="displayName" type="xs:string" minOccurs="0"/>
            <xs:element name="groupSpaceURI" type="xs:string" minOccurs="0"/>
            <xs:element name="guid" type="xs:string" minOccurs="0"/>
            <xs:element name="iconURI" type="xs:string" minOccurs="0"/>
            <xs:element name="keywords" type="xs:string" minOccurs="0"/>
            <xs:element name="lastUpdatedDate" type="xs:dateTime" minOccurs="0"/>
            <xs:element name="listServiceConfigData" type="tns:gsServiceConfigData" nillable="true"
            minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="logoURI" type="xs:string" minOccurs="0"/>
            <xs:element name="mailingList" type="xs:string" minOccurs="0"/>
```

For more information about setting up WebCenter Portal, see the "Getting WebCenter Portal Up and Running" chapter in the *Administering Oracle WebCenter Portal.*

56.1.4.2 Setting Up WebCenter Portal to Use the WebCenter Portal API

Before you can call the WebCenter Portal API in your Portal Framework application, you must ensure that your application contains the correct libraries and that there is a connection to the WebCenter Portal Web service.

To set up your application to use the WebCenter Portal API:

1. Start JDeveloper.
2. In the Application Navigator, expand the application for which you want to provide WebCenter Portal functionality.

   The application should be based on the WebCenter Portal Application template.
3. Right-click the view-controller project and choose **Project Properties.**
4. Select **Libraries and Classpath.**
5. Check that the following libraries are available in your project, adding any as necessary:
   - ADF DVT Faces Runtime
   - ADF Model Generic Runtime
   - ADF Model Runtime

- JAX-RPC Client
- JAX-WS Client
- Oracle JEWT
- WebCenter Portlet Client View (`portlet-client-adf-view.jar`, `portlet-client-adf-diagnostic.jar`)
- WebCenter Portlet Tag Library (`portlet-client-adf-taglib.jar`)
- WebCenter Portlet Skin (`portlet-client-adf-skin.jar`)
- WebCenter Portlet Client Model (`portlet-client-core.jar`, `portlet-client-web.jar`, `portlet-client-wsrp.jar`, `portlet-client-adf-model.jar`, `portlet-client-rc.jar`, `webcenter-portlet.jar`)
- WebCenter Portlet Client Dependencies (`tidy.jar`, `wsrp-types.jar`, `wsrp-jaxb.jar`)
- WebCenter Portlet Client WSRP Stubs (`wsrp-stubs.jar`)
- WebCenter Portlet Designtime (`adfp-portletdt-share.jar`)
- *JDEV_MW_HOME*`/oracle_common/modules/oracle.adf.model_11.1.1/adfm.jar`
- *JDEV_MW_HOME*`/oracle_common/modules/oracle.xdk_11.1.0/xml.jar`

6. Click **OK.**
7. In the Application Resources panel of the Application Navigator, right-click **Connections** and choose **New Connection > URL.**
8. In the **Name** field, enter `SpacesWebServiceEndpoint`.
9. In the **URL Endpoint** field, enter the WebCenter Portal Web service URL:

   ```
   http://host:port/webcenter/SpacesWebService
   ```

10. Click **OK.**

    The connection information is added to the `connections.xml` file in the application's `META-INF` directory, for example:

    ```
    C:\JDeveloper\mywork\mySpacesApplication\.adf\META-INF
    ```

    If the `connections.xml` file does not exist, it is created.

11. Open the `connections.xml` file and verify that the code shown in Example 56–1 appears:

Example 56–1   Portal Web Service Endpoint URL Connection

```
<Reference name="SpacesWebServiceEndpoint"
className="oracle.adf.model.connection.url.HttpURLConnection">
<Factory className="oracle.adf.model.connection.url.URLConnectionFactory"/>
<RefAddresses>
  <XmlRefAddr addrType="SpacesWebServiceEndpoint">
    <Contents>
      <urlconnection name="SpacesWebServiceEndpoint"
      url="http://host:port/webcenter/SpacesWebService"/>
    </Contents>
  </XmlRefAddr>
</RefAddresses>
</Reference>
```

If you need to set the WebCenter Portal Web Service endpoint at runtime, you can use the `setGroupSpaceWebServiceEndpoint` method (Example 56–2). You can write a wrapper method that takes the endpoint as a parameter and then calls `setGroupSpaceWebServiceEndpoint`, passing the parameter. An exception is reported as INFO in the log file if the endpoint is not set in `connections.xml`.

Example 56–2 Setting the WebCenter Portal Web Service Endpoint at Runtime

```
client.setGroupSpacesWebServiceEndpoint("http://xmlns.oracle.com/webcenter/SpacesW
ebService");
```

56.1.4.3 Securing the Connection Between the Portal Framework Application and WebCenter Portal

Before using the WebCenter Portal API in your Portal Framework application, you must ensure that the communication between the application (the consumer) and WebCenter Portal (the producer) is secure. This is so that the identity of the user invoking the API is propagated to WebCenter Portal in a secure manner where the integrity and confidentiality of the communication is maintained.

To do this, the WebCenter Portal API uses a policy of SAML-based token passing with message protection. Your administrator must create a Java keystore and update the credential store so that WebCenter Portal can verify the authenticity of the security tokens received from your application. You must then register this keystore and update the credential store using JDeveloper.

For information about the steps that the administrator must perform, see the "Securing WebCenter Portal for Applications Consuming WebCenter Portal Client API with WS-Security" section in the *Administering Oracle WebCenter Portal*.

56.1.4.4 Setting Up the WebCenter Portal Client Context

Before calling any of the WebCenter Portal API methods in your application code, a few setup steps are required.

To set up the WebCenter Portal client context:

1. Domain-wide configuration settings are used when you call the WebCenter Portal API from an application deployed on WebLogic Server (WLS), unless you specifically choose to override them. To override or set security configuration parameters, use the methods provided by the `GroupSpaceWSContext` class.

   In particular, you must set the SAML issuer name and the public key alias for WebCenter Portal, which are required for data encryption. If the WebCenter Portal Web service endpoint is not set in the `connections.xml` file, you can set this too.

   For example:

   ```
   GroupSpaceWSContext context = new GroupSpaceWSContext();

   context.setEndPoint("endPointUrl");
   context.setSamlIssuerName("samlIssuer");
   context.setRecipientKeyAlias("producer");

   groupSpaceWSClient = new GroupSpaceWSClient(context);
   ```

   Where:

   - *`endPointUrl`* is the WebCenter Portal Web service endpoint, for example, `http://xmlns.oracle.com:8912/webcenter/SpacesWebService`.

- *`samlIssuer`* is the issuer URI of the SAML Authority issuing assertions for this SAML Asserting Party, for example, `www.oracle.com`. Out-of-the-box, `www.oracle.com` is the only trusted SAML issuer.
- *`producer`* is the public key alias for WebCenter Portal, for example, `orakey` if you are using a simple topology.

  For information about the steps that the administrator must perform, see the "Securing WebCenter Portal for Applications Consuming WebCenter Portal Client API with WS-Security" section in the *Administering Oracle WebCenter Portal*.

For a full list of the methods provided by the `GroupSpaceWSContext` class, see *Java API Reference for Oracle WebCenter Portal*.

2. Initialize the WebCenter Portal client by passing the context. For example:

```
GroupSpaceWSClient client = new GroupSpaceWSClient(context);
```

3. Once you have initialized the client, check everything is set up correctly by calling:

```
getWebCenterSpacesURL();
```

If the correct URL is returned, everything is set up correctly and you can start using the WebCenter Portal API.

56.1.5 Providing WebCenter Portal Functionality in Your Portal Framework Application

The WebCenter Portal API enables you to perform common portal-related operations within a Framework application. Most of the API's methods are provided by the `GroupSpaceWSClient` class. The WebCenter Portal API methods can be grouped into three main categories:

- Section 56.1.5.1, "Managing Portals and Portal Templates"
- Section 56.1.5.2, "Managing Portal Membership"
- Section 56.1.5.3, "Retrieving Information for Portals and Portal Templates"

Table 56–2 lists the methods in the `GroupSpaceWSClient` class.

Table 56–2 Methods for Performing Common Portal Operations

Portal Methods	Category	Description
`createGroupSpace`	Managing Portals and Portal Templates	Creates a new portal based on a template. See Section 56.1.5.1.1, "Creating a Portal."
`setCustomAttribute`	Managing Portals and Portal Templates	Creates one or more custom attributes for a portal. See Section 56.1.5.1.2, "Creating a Custom Attribute."
`deleteGroupSpace`	Managing Portals and Portal Templates	Permanently removes a portal from Portal. See Section 56.1.5.1.4, "Deleting a Portal."
`createGroupSpaceTemplate`	Managing Portals and Portal Templates	Creates a new portal template based on an existing portal. See Section 56.1.5.1.3, "Creating a Portal Template."
`addMember`	Managing Portal Membership	Makes a user (or a group) a portal member with a specific role. See Section 56.1.5.2.1, "Adding Members to a Portal."

Table 56–2 (Cont.) Methods for Performing Common Portal Operations

Portal Methods	Category	Description
`inviteMember`	Managing Portal Membership	Invites a list of users to become members of a portal. See Section 56.1.5.2.2, "Inviting Users to Join a Portal."
`removeMember`	Managing Portal Membership	Revokes portal membership. See Section 56.1.5.2.3, "Removing Members from a Portal."
`getRoles`	Managing Portal Membership	Retrieves all the roles for a given portal. See Section 56.1.5.2.4, "Retrieving Role Information."
`getGroupSpaces`	Retrieving Information for Portals and Portal Templates	Retrieves a list of portals for a given query string. See Section 56.1.5.3.1, "Retrieving a List of Portals."
`getPublicGroupSpaces`	Retrieving Information for Portals and Portal Templates	Retrieves a list of public portals for a given query string. See Section 56.1.5.3.2, "Retrieving a List of Public Portals."
`getDiscoverableGroupSpaces`	Retrieving Information for Portals and Portal Templates	Retrieves a list of discoverable portals for a given query string. See Section 56.1.5.3.3, "Retrieving a List of Discoverable Portals."
`getGroupSpaceMetadata`	Retrieving Information for Portals and Portal Templates	Retrieves information (metadata) about the portal. See Section 56.1.5.3.4, "Retrieving Portal Metadata."
`getGroupSpaceMetadataByGuid`	Retrieving Information for Portals and Portal Templates	Retrieves information (metadata) about a portal given the portal's GUID. See Section 56.1.5.3.4, "Retrieving Portal Metadata."
`getGroupSpaceTemplates`	Retrieving Information for Portals and Portal Templates	Retrieves a list of portal templates for a given query string. See Section 56.1.5.3.5, "Retrieving a List of Portal Templates."
`getGroupSpaceTemplateMetadata`	Retrieving Information for Portals and Portal Templates	Retrieves information (metadata) about the portal template. See Section 56.1.5.3.6, "Retrieving Portal Template Metadata."
`getGroupSpaceTemplateMetadataByGuid`	Retrieving Information for Portals and Portal Templates	Retrieves information (metadata) about the portal template given the template's GUID. See Section 56.1.5.3.6, "Retrieving Portal Template Metadata."
`getWebCenterSpacesURL`	Retrieving Information for Portals and Portal Templates	Retrieves the Portal application URL. See Section 56.1.5.3.7, "Retrieving the Portal URL."
`getGroupSpaceURL`	Retrieving Information for Portals and Portal Templates	Retrieves a portal URL. See Section 56.1.5.3.8, "Retrieving a Portal URL."
`getServiceRSSFeedURL`	Retrieving Information for Portals and Portal Templates	Retrieves RSS feed URLs for the specified portal service.
`getServiceRSSFeedURLbyGuid`	Retrieving Information for Portals and Portal Templates	Retrieves RSS feed URL for a given portal by GUID and a given service.

56.1.5.1 Managing Portals and Portal Templates

Use the following WebCenter Portal API methods to manage your portals and portal templates:

- `createGroupSpace`
- `setCustomAttribute`
- `createGroupSpaceTemplate`
- `deleteGroupSpace`

Before you begin

Before using any of these methods, you must complete all the steps listed in Section 56.1.4, "How to Set Up Your Framework Application to Use the WebCenter Portal API."

This section includes the following subsections:

- Section 56.1.5.1.1, "Creating a Portal"
- Section 56.1.5.1.2, "Creating a Custom Attribute"
- Section 56.1.5.1.3, "Creating a Portal Template"
- Section 56.1.5.1.4, "Deleting a Portal"

56.1.5.1.1 Creating a Portal Use the `createGroupSpace` method to create a portal that is based on an existing portal template.

To use this method, specify:

- The internal name of the new portal. This name can contain blank spaces.
- A display name for the new portal.
- A description of the portal. Although this is not mandatory, we recommend that you provide a description to help users identify the portal's purpose.
- The name of the portal template you want to use. This should be the internal name of the template, not the display name.

Optionally, you can provide a comma separated list of keywords to help users locate the portal in searches.

Example 56–3 creates a portal with the name *Databases* that is based on the *CommunityofInterest* template. The example also specifies two search keywords (*databases* and *Oracle*).

Example 56–3 Creating a Portal

```
//create the portal
GroupSpaceWSMetadata gsMetadata =
client.createGroupSpace("Databases", "Databases" "A community for people
interested in databases", "databases, oracle", "CommunityofInterest");
//print the portal GUID to provide confirmation of creation
System.out.println("GUID: " + gsMetadata.getGuid());
```

For an example of how to provide custom attributes for a new portal, see Section 56.1.5.1.2, "Creating a Custom Attribute."

56.1.5.1.2 Creating a Custom Attribute Every portal comes with built-in attributes such as name, description, date created, icon, and so on. In addition, you can define custom attributes that store additional information (metadata) that is unique to the portal and its characteristics.

Use the `setCustomAttribute` method to specify a custom attribute for a portal. To use this method, specify the name of the portal and a name, description, type, and value for the custom attribute.

Example 56–4 creates the Databases portal and then creates a custom attribute for that portal. The attribute is named *Vendors,* with the description *List of vendors.* It takes string values of *Oracle* and *IBM.*

Example 56–4 Creating a Custom Attribute

```
//create the portal
client.createGroupSpace("Databases", "Databases", "A community for people
interested in databases", null, "CommunityofInterest");
//create the custom attribute
client.setCustomAttribute("Databases", "Vendors", "List of vendors",
"java.lang.String", "Oracle, IBM");
```

56.1.5.1.3 Creating a Portal Template Use the `createGroupSpaceTemplate` method to create a portal template based on an existing portal. To use this method specify a name, display name, and description for the template, and the name of the portal to use to create the template.

Example 56–5 creates a portal template based on the *Databases* portal.

Example 56–5 Creating a Portal Template

```
GroupSpaceWSMetadata templMetadata =
client.createGroupSpaceTemplate("DatabasesTemplate", "Databases Template",
"A template based on the Databases portal", "Databases");
//print the template GUID to provide confirmation of creation
System.out.println("GUID: " + templMetadata.getGuid());
```

56.1.5.1.4 Deleting a Portal Use the `deleteGroupSpace` method to permanently delete a portal from WebCenter Portal. To use this method, specify the name of the portal to delete. The method returns a boolean value to indicate whether the deletion was successful.

Example 56–6 deletes the portal with the name *Databases.* The example uses the boolean value returned by the method to print a message about the success or failure of the operation.

Example 56–6 Deleting a Portal

```
//delete the portal
Boolean success = client.deleteGroupSpace("Databases");
//print a message depending on the result of the deletion
if(success)
{
  System.out.println("Operation Succeeded");
}
else
{
  System.out.println(Operation Failed");
}
```

56.1.5.2 Managing Portal Membership

Use the following WebCenter Portal API methods to manage portal membership:

- addMember
- inviteMember
- removeMember
- getRoles

Before you begin

Before using any of these methods, you must complete all the steps listed in Section 56.1.4, "How to Set Up Your Framework Application to Use the WebCenter Portal API."

This section includes the following subsections:

- Section 56.1.5.2.1, "Adding Members to a Portal"
- Section 56.1.5.2.2, "Inviting Users to Join a Portal"
- Section 56.1.5.2.3, "Removing Members from a Portal"
- Section 56.1.5.2.4, "Retrieving Role Information"

56.1.5.2.1 Adding Members to a Portal Use the `addMember` method to give users (and groups) portal membership and assign the new members to a specific role. To use this method, specify the name of the portal, and a list of users/groups. The list must contain objects of type `GroupSpaceWSMembers` that specify the user/group name and the role to give that user/group in the portal.

You must specify the name of a valid user or user group that exists in the WebCenter Portal identity store. For the role, choose one of the default roles (Moderator, Participant, Viewer) or a custom role (if any). To retrieve a list of the available roles for a portal, use the `getRoles` method. For more information, see Section 56.1.5.2.4, "Retrieving Role Information." For more information about roles, see the "Managing Roles and Permissions for a Portal" section in *Using Oracle WebCenter Portal*.

Example 56–7 makes users (of type `GroupSpaceWSMembers`) named *Pat* and *Vicki* and everyone in the *Sales* and *Marketing* user group, members of the *Databases* portal. *Pat* and everyone in *Sales* and *Marketing* are granted the *Viewer* role. *Vicki* is assigned the *Participant* role.

Note: Use `setGroup(true)` to indicate when you are adding a *group of users*.

Example 56–7 Adding Members to a Portal

```
//create the list of users
List addMem = new ArrayList();
//create the GroupSpaceWSMembers objects
GroupSpaceWSMembers mem1 = new GroupSpaceWSMembers("pat", "Viewer");
GroupSpaceWSMembers mem2 = new GroupSpaceWSMembers("vicki", "Participant");
GroupSpaceWSMembers grp1 = new GroupSpaceWSMembers("Sales", "Viewer");
grp1.setGroup(true);
GroupSpaceWSMembers grp2 = new GroupSpaceWSMembers("Marketing", Viewer");
grp2.setGroup(true);
//add the GroupSpaceWSMembers objects to the list of users
addMem.add(mem1);
addMem.add(mem2);
addMem.add(grp1);
addMem.add(grp2);
//add the users to the Portal
client.addMember("Databases", addMem);
//print a list of members to confirm the new members were added
GroupSpaceWSMetadata memMetData = client.getGroupSpaceMetadata("Databases");
for (GroupSpaceWSMembers mems: memMetData.getMembers())
{
  System.out.println(mems.getMember());
  System.out.println(mems.getRole());
}
```

56.1.5.2.2 Inviting Users to Join a Portal Use the `inviteMember` method to invite users to become members of a portal. To use this method, specify the name of the portal and a list of users to invite. The list must contain objects of type `GroupSpaceWSMembers` that specify the user name and the role to give that user in the portal. An invitation to join the portal is sent to each user, and each user can then accept or reject that invitation.

You must specify a valid user name that exists in the WebCenter Portal identity store. For the role, choose one of the default roles (Moderator, Participant, Viewer) or a custom role (if any). To retrieve a list of the available roles for a portal, use the `getRoles` method. For more information, see Section 56.1.5.2.4, "Retrieving Role Information." For more information about roles, see the "Managing Roles and Permissions for a Portal" section in *Using Oracle WebCenter Portal*.

Example 56–8 invites users (of type `GroupSpaceWSMembers`) named *Pat* and *Vicki* to become members of the *Databases* portal with *Viewer* and *Participant* roles respectively.

Example 56–8 Inviting Users to Join a Portal

```
//create the list of users
List inviteMem = new ArrayList();
//create the GroupSpaceWSMembers objects
GroupSpaceWSMembers mem1 = new GroupSpaceWSMembers("pat", "Viewer");
GroupSpaceWSMembers mem2 = new GroupSpaceWSMembers("vicki", "Participant");
//add the GroupSpaceWSMembers objects to the list of users
inviteMem.add(mem1);
inviteMem.add(mem2);
//invite the list of users to join the portal
client.inviteMember("Databases", inviteMem);
```

56.1.5.2.3 Removing Members from a Portal Use the `removeMember` method to revoke portal membership. To use this method, specify the name of the portal, and a list of users. The list must contain objects of type `GroupSpaceWSMembers` that specify the user name. To obtain a list of current portal members, use the `getGroupSpaceMetadata` method. For more information, see Section 56.1.5.3.4, "Retrieving Portal Metadata."

Example 56–9 removes users (of type `GroupSpaceWSMembers`) *Pat* and *Vicki* from the membership of the *Databases* portal.

Example 56–9 Removing Members from a Portal

```
//create the list of users
List remMem = new ArrayList();
//create the GroupSpaceWSMembers objects
GroupSpaceWSMembers mem1 = new GroupSpaceWSMembers("pat");
GroupSpaceWSMembers mem2 = new GroupSpaceWSMembers("vicki");
2 lines
//add the GroupSpaceWSMembers objects to the list of users
remMem.add(mem1);
remMem.add(mem2);

//remove the users from the portal
client.removeMember("Databases", remMem);
//print a list of members to confirm the members were removed
GroupSpaceWSMetadata memMetData = client.getGroupSpaceMetadata("Databases");
for (GroupSpaceWSMembers mems: memMetData.getMembers())
{
  System.out.println(mems.getMember());
  System.out.println(mems.getRole());
}
```

56.1.5.2.4 Retrieving Role Information Use the `getRoles` method to retrieve all the roles for a given portal. This is useful for determining which roles are available when adding or inviting members to a portal. Roles include out-of-the box roles (Moderator, Participant, Viewer) and also custom roles (if any). To use this method, specify the name of the portal.

Example 56–10 retrieves and displays role information for the *Databases* portal.

Example 56–10 Retrieving Role Information

```
//retrieve the list of roles
List<String> roles = client.getRoles("Databases");
//print the list of roles
for (String role: roles)
{
  System.out.println(role);
}
```

56.1.5.3 Retrieving Information for Portals and Portal Templates

Use the following Portal methods to retrieve portal information:

- `getGroupSpaces`
- `getPublicGroupSpaces`
- `getDiscoverableGroupSpaces`
- `getGroupSpaceMetadata`
- `getGroupSpaceMetadataByGuid`
- `getGroupSpaceTemplates`
- `getGroupSpaceTemplateMetadata`
- `getGroupSpaceTemplateMetadataByGuid`
- `getWebCenterSpacesURL`
- `getGroupSpaceURL`

Before you begin

Before using the WebCenter Portal API methods, you must complete all the steps listed in Section 56.1.4, "How to Set Up Your Framework Application to Use the WebCenter Portal API."

This section includes the following subsections

- Retrieving a List of Portals
- Retrieving a List of Public Portals

- Retrieving a List of Discoverable Portals
- Retrieving Portal Metadata
- Retrieving a List of Portal Templates
- Retrieving Portal Template Metadata
- Retrieving the Portal URL
- Retrieving a Portal URL
- Retrieving RSS Feed URLs for WebCenter Portal Tools and Services

56.1.5.3.1 Retrieving a List of Portals Use the `getGroupSpaces` method to obtain a list of portals that match a given query string. To use this method, specify a query string. A null value query string returns a list of *all* portals that are accessible to the current user.

The method returns portals that are accessible to the current user, up to a maximum of 500.

Example 56–11 returns a list of portals containing the string *Database.*

Example 56–11 Retrieving a List of Specific Portals

```
List<String> allGroupSpaces = client.getGroupSpaces("Database");
```

Example 56–12 returns a list of *all* portals to which the current user has access. This is achieved by specifying a *null* query string.

Example 56–12 Retrieving a List of All Portals

```
List<String> allGroupSpaces = client.getGroupSpaces(null)
```

56.1.5.3.2 Retrieving a List of Public Portals Use the `getPublicGroupSpaces` method to obtain a list of public portals that match a given query string. To use this method, specify a query string. A null value query string returns a list of *all* public portals.

The method returns portals that are accessible to all users, even those who are not logged in to the WebCenter Portal application, up to a maximum of 500.

Example 56–13 returns a list of public portals containing the string *Database*.

Example 56–13 Retrieving a List of Specific Public Portals

```
List<String> allPublicGroupSpaces = client.getPublicGroupSpaces("Database");
```

Example 56–14 returns a list of *all* public portals. This is achieved by specifying a *null* query string.

Example 56–14 Retrieving a List of All Public Portals

```
List<String> allPublicGroupSpaces = client.getPublicGroupSpaces(null)
```

56.1.5.3.3 Retrieving a List of Discoverable Portals Use the `getDiscoverableGroupSpaces` method to obtain a list of discoverable portals that match a given query string. To use this method, specify a query string. A null value query string returns a list of *all* discoverable portals.

The method returns portals that are accessible to all users who are logged into WebCenter Portal, up to a maximum of 500.

Example 56–13 returns a list of discoverable portals containing the string *Database*.

Example 56–15 Retrieving a List of Discoverable portals

```
List<String> allDiscoverableGroupspaces =
client.getDiscoverableGroupspaces("Database");
```

Example 56–14 returns a list of *all* discoverable portals. This is achieved by specifying a *null* query string.

Example 56–16 Retrieving a List of All Discoverable Portals

```
List<String> allDiscoverableGroupSpaces = client.getDiscoverableGroupSpaces(null)
```

56.1.5.3.4 Retrieving Portal Metadata Use the `getGroupSpaceMetadata` or `getGroupSpaceMetadataByGuid` methods to obtain information (metadata) about a particular portal. This includes information such as the description of the portal, the name of the user who created it, the date on which it was last updated, and so on.

To use the `getGroupSpaceMetadata` method, specify the name of the portal. To use the `getGroupSpaceMetadataByGuid` method, specify the GUID of the portal. Note that while the portal name may be changed during the existence of the portal, the GUID always remains the same. You can obtain the GUID of a portal as follows:

```
getGroupSpaceMetadata("spaceName").getGuid();
```

Both methods return a bean object that contains more methods that you can then use for retrieving the portal metadata. These methods are provided by the `GroupSpaceWSMetadata` class. Table 56–3 lists the methods returned by the bean object:

Table 56–3 Methods for Retrieving Portal Metadata

Portal Methods	Description
`getCreatedBy`	Returns the name of the person who created the portal.
`getSpaceAttributes`	Returns the custom attributes for a portal.
`getDescription`	Returns the description of the portal.
`getDisplayName`	Returns the display name of the portal.
`getGroupSpaceState`	Returns the state of the portal: active, offline, deleted.
`getGuid`	Returns the GUID of the portal.
`getIconURL`	Returns the location of the portal icon.
`getKeywords`	Returns a comma separated list of keywords used to describe the portal.
`getLastUpdated`	Returns the date the portal was last updated.
`getLogoURL`	Returns the location of the portal logo.
`getMailingList`	Returns the mailing list for the portal.
`getMembers`	Returns the current list of portal members.
`getName`	Returns the internal name of the portal.
`isDiscoverable`	Returns if the portal is returned in searches made by users who are not members of the portal.
`isPublic`	Returns if the portal is available to users who are not logged in.

Example 56–17 retrieves the *Description*, *Keywords*, and *Last Updated Date* information for the *Databases* portal given the portal's name.

Example 56–17 Retrieving Portal Metadata Using the Portal Name

```
//get the exact name of the portal
List<String> myGroupSpace = client.getGroupSpaces("Databases");
//check that the API returns a single result
if(myGroupSpace.size() == 1)
{
  //retrieve the metadata
  GroupSpaceWSMetadata metadata = client.getGroupSpaceMetadata(myGroupSpace);
  //get portal description
  System.out.println("Description: " + metadata.getDescription());
  //get portal keywords
  System.out.println("Keywords: " + metadata.getKeywords());
  //get the date the portal was last updated
  System.out.println("Last Updated Date: "+ metadata.getLastUpdated().toString());
}
```

Example 56–18 retrieves the *Display Name, Creator,* and *Last Updated Date* information for the *Databases* portal given the portal GUID.

Example 56–18 Retrieving Portal Metadata Using Portal GUID

```
GroupSpaceWSMetadata metadata = client.getGroupSpaceMetadataByGuid("Guid");
//get portal display name
System.out.println("Display Name: " + metadata.getDisplayName());
//get the name of the user who created the portal
System.out.println("Created By: " + metadata.getCreatedBy());
//get the date the portal was last updated
System.out.println("Last Updated Date: " + metadata.getLastUpdated().toString());
```

Example 56–19 retrieves the *Name, Description, Type,* and *Value* for every custom attribute associated with the *Databases* portal.

Example 56–19 Retrieving Custom Attribute Metadata

```
//get the exact name of the portal
List<String> myGroupSpace = client.getGroupSpaces("Databases");
//check that the API returns a single result
if(myGroupSpace.size() == 1)
{
  //retrieve the metadata
  GroupSpaceWSMetadata metadata = client.getGroupSpaceMetadata(myGroupSpace);
  //get list of custom attributes
  List<GSCustomAttribute> attributes = metadata.getCustomAttributes();
  //get name, description, type, and value for each custom attribute
  for(GSCustomAttribute attribute: attributes)
  {
    System.out.println("Name :" + attribute.getName());
    System.out.println("Description :" + attribute.getDescription());
    System.out.println("Type :" + attribute.getType());
    System.out.println("value.toString() :" + attribute.getValue().toString());
  }
}
```

Example 56–20 retrieves a list of members of the *Databases* portal.

Example 56–20 Retrieving Membership Information

```
//get the exact name of the portal
List<String> myGroupSpace = client.getGroupSpaces("Databases");
//check that the API returns a single result
```

```
if(myGroupSpace.size() == 1)
{
  //retrieve the metadata
  GroupSpaceWSMetadata metadata = client.getGroupSpaceMetadata(myGroupSpace);
  //get the list of members
  for(String member: metadata.getMembers())
  {
    System.out.println("Member UID: " + member);
  }
}
```

56.1.5.3.5 Retrieving a List of Portal Templates Use the `getGroupSpaceTemplates` method to obtain a list of portal templates that match a given query string. To use this method, specify a query string. A null value query string returns a list of *all* templates that are accessible to the current user.

The method returns templates that are accessible to the current user, up to a maximum of 500.

Example 56–21 returns a list of portal templates containing the string *Interest*.

Example 56–21 Retrieving a List of Specific Portal Templates

```
List<String> allGroupSpaceTemplates = client.getGroupSpaceTemplates("Interest");
```

Example 56–22 returns a list of *all* portal templates to which the current user has access. This is achieved by specifying a *null* query string.

Example 56–22 Retrieving a List of All Portal Templates

```
List<String> allGroupSpaceTemplates = client.getGroupSpaceTemplates(null);
```

56.1.5.3.6 Retrieving Portal Template Metadata Use the `getGroupSpaceTemplateMetadata` and `getGroupSpaceTemplateMetadataByGuid` methods to obtain information (metadata) about a particular portal template. This includes information such as the description of the template, the name of the user who created it, and so on.

To use the `getGroupSpaceTemplateMetadata` method, specify the name of the template. To use the `getGroupSpaceTemplateMetadataByGuid` method, specify the GUID of the template. Note that while the portal template name may be changed during the existence of the template, the GUID always remains the same.

Both methods return a bean object that contains more methods that you can then use for retrieving the portal template metadata. These methods are provided by the `GroupSpaceWSMetadata` class. Table 56–4 lists the methods returned by the bean object:

Table 56–4 Methods for Retrieving Portal Template Metadata

Portal Methods	Description
`getCreatedBy`	Returns the name of the person who created the template.
`getDescription`	Returns the description of the template.
`getDisplayName`	Returns the display name of the template.
`getGuid`	Returns the GUID of the template.
`getIconURL`	Returns the location of the template icon.
`getKeywords`	Returns a comma separated list of keywords used to describe the template.

Table 56–4 (Cont.) Methods for Retrieving Portal Template Metadata

Portal Methods	Description
`getLogoURL`	Returns the location of the template logo.
`getName`	Returns the internal name of the template.

Example 56–23 retrieves the *GUID*, *Description*, and *Created By* information for the *CommunityofInterest* portal template given the template name.

Example 56–23 Retrieving Template Metadata Using the Template Name

```
GroupSpaceWSMetadata metadata =
client.getGroupSpaceTemplateMetadata(myGroupSpaceTemplate);
//get the exact name of the portal template
List<String> myGroupSpaceTemplate =
client.getGroupSpaceTemplates("CommunityofInterest");
//check that the API returns a single result
if(myGroupSpaceTemplate.size() == 1)
{
  //retrieve the metadata -- get GUID
  System.out.println("GUID: " + metadata.getGuid());
  //get template description
  System.out.println("Description: " + metadata.getDescription());
  //get name of user who created the template
  System.out.println("Keywords: " + metadata.getCreatedBy());
}
```

Example 56–24 retrieves the *name* of a portal template given the template GUID.

Example 56–24 Retrieving Template Metadata Given the Template GUID

```
GroupSpaceWSMetadata templGuidMetadata =
client.getGroupSpaceTemplateMetadataByGuid("Guid");
System.out.println("Template Name: " + templGuidMetadata.getName());
```

56.1.5.3.7 Retrieving the Portal URL Use the `getWebCenterSpacesURL` method to obtain the URL of the WebCenter Portal instance.

Example 56–25 retrieves the URL of the currently running instance of WebCenter Portal.

Example 56–25 Retrieving the WebCenter Portal URL

```
String myWebCenterSpacesURL = client.getWebCenterSpacesURL();
```

56.1.5.3.8 Retrieving a Portal URL Use the `getGroupSpaceURL` method to obtain the URL of a specific portal. This is useful for when you want to construct a hyperlink for a portal or you have a relative URL that you need to make into an absolute URL. To use this method, specify the name of the portal.

Example 56–26 retrieves the URL of the *Databases* portal.

Example 56–26 Retrieving a Portal URL

```
String myGroupSpaceURL = client.getGroupSpaceURL("Databases");
```

Example 56–27 prints a list of portals as hyperlinks.

Example 56–27 Printing a List of Portals as Hyperlinks

```
//get the list of portals
List<String> spaces = client.getGroupSpaces("");
//print the list of portals as hyperlinks
for (String spaceName : spaces)
{
  print("<a href =""" + client.getGroupSpaceURL(spaceName) + "">" + spaceName +
"</a><br>");
}
```

To construct the URL of a particular page in a portal, retrieve the portal URL and then add the page information. For information about how to create pretty URLs for portal pages, see the "WebCenter Portal Pretty URLs" section in *Building Portals with Oracle WebCenter Portal*.

56.1.5.3.9 Retrieving RSS Feed URLs for WebCenter Portal Tools and Services WebCenter Portal members can find out what is happening in a portal through various RSS news feeds. The following portal RSS feeds are available:

- Announcements RSS - View portal announcements
- Discussions RSS - Track contributions to discussion forums
- Lists RSS - Watch for revisions to lists
- Recent Activity RSS - Monitor recent activities

You can retrieve the RSS feed URLs from WebCenter Portal, using the following WebCenter Portal API methods:

- `getServiceRSSFeedURL`
- `getServiceRSSFeedURLbyGuid`

To obtain an RSS feed URL, you must identify the portal (by name or GUID) and specify the service required (using a service ID). Service IDs are available as constants in `GroupSpaceWSClient` as follows:

- Announcements - `GroupSpaceWSClient.ANNOUNCEMENT_SERVICE_ID`
- Discussions - `GroupSpaceWSClient.DISCUSSION_FORUM_SERVICE_ID`
- Lists - `GroupSpaceWSClient.LIST_SERVICE_ID`
- Recent Activities - `GroupSpaceWSClient.RECENT_ACTIVITY_SERVICE_ID`

Retrieving Portal RSS News Feed URLs Using `getServiceRSSFeedURL`

Use the `getServiceRSSFeedURL` method to obtain service-related RSS news feed URLs for a particular portal by specifying the portal name.

To retrieve the RSS news feed URL for a service using `getServiceRSSFeedURL`, use the following:

```
String service_URL = client.getServiceRSSFeedURL("groupspace_name",service_ID);
```

Where:

service_URL refers to the service parameter being retrieved

groupspace_name is the name of the portal

service_ID is the ID of the service for which you want to retrieve the RSS news feed URL. Use one of the following: `ANNOUNCEMENT_SERVICE_ID`, `DISCUSSION_FORUM_SERVICE_ID`, `RECENT_ACTIVITY_SERVICE_ID`, or `LIST_SERVICE_ID`.

Therefore, depending on the service required, you can use the following:

- `String` *service_URL* `= client.getServiceRSSFeedURL("`*groupspace_name*`", GroupSpaceWSClient.ANNOUNCEMENT_SERVICE_ID)`
- `String` *service_URL* `= client.getServiceRSSFeedURL("`*groupspace_name*`", GroupSpaceWSClient.DISCUSSION_FORUM_SERVICE_ID)`
- `String` *service_URL* `= client.getServiceRSSFeedURL("`*groupspace_name*`", GroupSpaceWSClient.LIST_SERVICE_ID)`
- `String` *service_URL* `= client.getServiceRSSFeedURL("`*groupspace_name*`", GroupSpaceWSClient.RECENT_ACTIVITY_SERVICE_ID)`

Example 56–28 retrieves the recent activity RSS feed URL for a portal named Finance_Project:

Example 56–28 Retrieving the RSS Feed URL for Recent Activity

```
String recentActivityURL = client.getServiceRSSFeedURL("Finance_Project",
GroupSpaceWSClient.RECENT_ACTIVITY_SERVICE_ID);
```

Retrieving RSS News Feed URLs Using `GetServiceRSSFeedURLbyGuid`

Use the `getServiceRSSFeedURLbyGuid` method to obtain service-related RSS news feed URLs for a particular portal by specifying the portal's GUID.

To retrieve the RSS news feed URL for a service using `getServiceRSSFeedURLbyGuid`, use the following:

```
String service_URL = client.getServiceRSSFeedURLbyGuid("groupspace_GUID",service_ID);
```

Where:

service_URL refers to the service parameter being retrieved

groupspace_GUID is a portal GUID. For information about obtaining a portal's GUID, see Section 56.1.5.3.4, "Retrieving Portal Metadata."

service_ID is the ID of the service for which you want to retrieve the RSS news feed URL. Use one of the following: `ANNOUNCEMENT_SERVICE_ID`, `DISCUSSION_FORUM_SERVICE_ID`, `RECENT_ACTIVITY_SERVICE_ID`, or `LIST_SERVICE_ID`.

Example 56–29 retrieves the recent activity RSS feed URL for a portal with the GUID: s2201fa44_b441_4bdd_950e_47307f6f9800:

Example 56–29 Retrieving the RSS Feed URL for Recent Activity

```
String recentActivityURL = client.getServiceRSSFeedURLbyGuid("s2201fa44_b441_4bdd_
950e_47307f6f9800", GroupSpaceWSClient.RECENT_ACTIVITY_SERVICE_ID);
```

56.1.6 How to Handle Exceptions Raised by the WebCenter Portal API

The `GroupSpaceWSException` class provides methods for handling exceptions raised by WebCenter Portal API methods.

Table 56–5 Portal Methods in the GroupSpaceWSException Class

Method	Class	Description
`getLocalizedMessage`	GroupSpaceWSException	Composes the localized error message.

Table 56–5 (Cont.) Portal Methods in the GroupSpaceWSException Class

Method	Class	Description
`printStackTrace`	GroupSpaceWSException	Prints the exception and its back trace to the standard error stream.

This section includes the following subsections:

- Section 56.1.6.1, "Providing Localized Error Messages"
- Section 56.1.6.2, "Listing the Error Stack"

56.1.6.1 Providing Localized Error Messages

Sometimes you may find that the default error messages provided by the WebCenter Portal API is not specific enough for your particular application. In these cases you can provide your own error messages.

Use the `getLocalizedMessage` method to compose application-specific error messages.

Example 56–30 shows a servlet that includes code to create a portal. If any exceptions are raised during the creation process, a localized message is printed.

Example 56–30 Printing a Localized Error Message

```
servlet1.java

doGet()
{
...
  print("<b>Output</b>");
  try
    {
      GroupSpaceWSClient client = new GroupSpaceWSClient(context);
      client.createGroupSpace("Databases", "Databases, "A community for people
interested in databases", "databases, oracle", "CommunityofInterest");
      print("Successfully created portal");
    }
  catch(GroupSpaceWSException ex)
//For example:
    {
      if(ex instanceof GroupSpaceNameNullException)
        print(ex.getLocalizedMessage());
      else if (ex instanceof GroupSpaceDescNullException)
        print(ex.getLocalizedMessage());
    }
...
}
```

56.1.6.2 Listing the Error Stack

For debugging purposes, it is often useful to see which errors ultimately led to the failure of a particular operation to discover the underlying cause of the problem. Use the `printStackTrace` method to list all the errors that caused a particular exception.

Example 56–31 prints the exception and all the errors leading up to it.

Example 56–31 Listing the Error Stack

```
servlet1.java
```

```
doGet()
{
...
  print("<b>Output</b>");
  try
    {
      GroupSpaceWSClient client = new GroupSpaceWSClient(context);
      client.createGroupSpace("Databases", "Databases", "A community for people
interested in databases", "databases, oracle", "CommunityofInterest");
      print("Successfully created portal");
    }
  catch(GroupSpaceWSException ex)
    {
      ex.printStackTrace();
    }
...
}
```

56.1.7 Finding More Information on the WebCenter Portal API

API Reference Documentation

For detailed syntax information for the WebCenter Portal API, see *Java API Reference for Oracle WebCenter Portal*.

56.1.8 Troubleshooting Issues with the WebCenter Portal API

If you experience issues with the WebCenter Portal API, check the following:

1. Verify that the credential stores for both WebCenter Portal and the client Framework application are configured correctly.

   See the "Configuring the Policy and Credential Store" section in *Administering Oracle WebCenter Portal*.

2. Ensure the WebCenter Portal client context is set up correctly in the Portal Framework application by checking the alias passed in the `context.setRecipientKeyAlias`. The alias should be the public key alias of the producer (Portal), for example:

   ```
   GroupspaceWSContext context = new GroupspaceWSContext();
   context.setEndPoint(endPointUrl);
   context.setRecipientKeyAlias("orakey");
   groupspaceInternalWSClient = new GroupspaceWSInternalClient(context);
   ```

   In this example, the public key alias of the producer is **orakey**. See also, Section 56.1.4.4, "Setting Up the WebCenter Portal Client Context."

3. Check that keystores exist at both ends of the connection. For example:

   - `webcenter.jks` (copied to Portal end)

   - `clientapi.jks` (copied to Portal Framework application end)

   For example, the following commands generate `clientapi.jks` and `webcenter.jks` for a simple topology:

   ```
   keytool -genkeypair -keyalg RSA -dname "cn=spaces,dc=example,dc=com"
   -alias orakey -keypass mypassword -keystore webcenter.jks -storepass mypassword
   -validity 360
   keytool -exportcert -v -alias orakey -keystore webcenter.jks
   ```

```
-storepass mypassword -rfc -file webcenter.cer
keytool -importcert -alias webservice_client_api
-file webcenter.cer -keystore clientapi.jks -storepass mypassword
keytool -genkeypair -keyalg RSA -dname "cn=clientapi,dc=example,dc=com"
-alias clientapi -keypass mypassword -keystore clientapi.jks -storepass
mypassword -validity 360
keytool -exportcert -v -alias clientapi -keystore clientapi.jks -storepass
mypassword -rfc -file clientapi.cer
keytool -importcert -alias clientapi -file clientapi.cer -keystore
webcenter.jks -storepass mypassword
```

See also, Section 56.1.4.3, "Securing the Connection Between the Portal Framework Application and WebCenter Portal."

56.2 Using the WebCenter Portal REST API

WebCenter Portal provides a REST API to support various portal-related operations. You can use REST API methods to perform the following actions in the portal:

- List all portals in the application, list public portals only, list joined portals, list discoverable portals.
- View details for a single portal.
- List members of a portal.
- List role assignments for portal members.
- List custom attributes defined for a portal.
- View the details of a particular custom attribute.
- View and add lists for a portal.
- View and update list items (rows) for a list.
- View, update, and delete list item details (columns).

This section describes the Portal REST API. It contains the following subsections:

- Section 56.2.1, "Portal Entry Point"
- Section 56.2.2, "Portal Resource Type Taxonomy"
- Section 56.2.3, "Portal Security Considerations"
- Section 56.2.4, "Portal Resource Types"

For an introduction to the REST API, see Section 53, "Using Oracle WebCenter Portal REST APIs."

56.2.1 Portal Entry Point

Each REST service has a link element within the Resource Index that provides the entry point for that service. To find the entry point for the WebCenter Portal REST API, find the link element with a `resourceType` of:

```
urn:oracle:webcenter:spaces
```

The corresponding `href` or `template` element provides the URI entry point which returns a list of portals accessible to the current user. The client sends HTTP requests to this entry point to work with WebCenter Portal.

For more information about the Resource Index, see Section 53.5.1, "Using the Resource Index".

For more information about resource types, see Section 53.5.2.1, "Resource Type."

56.2.2 Portal Resource Type Taxonomy

When the client has identified the entry point, it can then navigate through the resource type taxonomy to perform the required operations. For more information about the individual resource types, see the appropriate section in Section 56.2.4, "Portal Resource Types."

The taxonomy for Portal is:

```
urn:oracle:webcenter:spaces
urn:oracle:webcenter:spaces:siteresources
urn:oracle:webcenter:spaces:resource:templates
urn:oracle:webcenter:spaces:resource:template
   urn:oracle:webcenter:space:attributes
   urn:oracle:webcenter:space:roles
   urn:oracle:webcenter:space
   urn:oracle:webcenter:space:icon
   urn:oracle:webcenter:space:members
      urn:oracle:webcenter:space:member
   urn:oracle:webcenter:space:attributes
      urn:oracle:webcenter:space:attribute
   urn:oracle:webcenter:space:roles
      urn:oracle:webcenter:space:role
   urn:oracle:webcenter:space:resourceindex
      urn:oracle:webcenter:space:lists
      urn:oracle:webcenter:space:list
         urn:oracle:webcenter:space:rows
            urn:oracle:webcenter:space:row
         urn:oracle:webcenter:space:columns
            urn:oracle:webcenter:space:column
```

56.2.3 Portal Security Considerations

There are no specific security considerations for this service. For general security considerations, see Section 53.8, "Security Considerations for WebCenter Portal REST APIs."

56.2.4 Portal Resource Types

The following sections provide all the information you need to know about each resource type:

- Section 56.2.4.1, "urn:oracle:webcenter:spaces"
- Section 56.2.4.2, "urn:oracle:webcenter:siteresources"
- Section 56.2.4.3, "urn:oracle:webcenter:spaces:resource:templates"
- Section 56.2.4.4, "urn:oracle:webcenter:space"
- Section 56.2.4.5, "urn:oracle:webcenter:space:resourceindex"
- Section 56.2.4.6, "urn:oracle:webcenter:space:roles"
- Section 56.2.4.9, "urn:oracle:webcenter:space:attributes"
- Section 56.2.4.10, "urn:oracle:webcenter:space:attribute"
- Section 56.2.4.11, "urn:oracle:webcenter:space:members"
- Section 56.2.4.12, "urn:oracle:webcenter:space:member"

- Section 56.2.4.13, "urn:oracle:webcenter:space:lists"
- Section 56.2.4.14, "urn:oracle:webcenter:space:list"
- Section 56.2.4.15, "urn:oracle:webcenter:space:list:rows"
- Section 56.2.4.16, "urn:oracle:webcenter:space:list:row"
- Section 56.2.4.17, "urn:oracle:webcenter:space:list:columns"
- Section 56.2.4.18, "urn:oracle:webcenter:space:list:column"

56.2.4.1 urn:oracle:webcenter:spaces

Use this resource type to identify the URI to use to view a list of portals (`GET`) and to create a new portal (`POST`). The response from a `GET` operation includes each portal, and each portal includes links to operate on that portal.

Navigation Paths to portals

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
```

Supported Methods for spaces

The following methods are supported by this resource:

- `GET` – Returns information on all portal.
  - **request - body:** None
  - **query parameters:**
    - `startIndex`
    - `itemsPerPage`
    - `projection` - Allowed values are `summary` and `details`. The default is `summary`.
    - `visibility` - Determines which portals are included in the list: all portals, public portals only, joined portals, or discoverable portals.

      Allowed values are `all`, `public`, `joined` and `discoverable`. The default is `joined`.
  - **response - body:** collection of portals
- `POST` – Creates a new portal.
  - **request - body:** space

```
<space>
   <name>aName</name>
   <description>aDescription</description>
   <templateName>aTemplate</templateName>
</space>
```

Note: The `templateName` parameter must be a valid template name returned from urn:oracle:webcenter:spaces:resource:templates. For example, the default template names are:

```
Basic
CommunityOfInterest
ProjectSpace
```

Resource Types Linked to from spaces

Table 56–6 lists the resource types that the client can link to from this resource.

Table 56–6 Related Resource Types for urn:oracle:webcenter:spaces

rel	resourceType
self	`urn:oracle:webcenter:spaces` `urn:oracle:webcenter:space`

56.2.4.2 urn:oracle:webcenter:siteresources

Use this resource type to identify the URI to use to retrieve a list of Site Resources (`GET`). The response from a `GET` operation includes a list of all site resource names. The main purpose of retrieving site resource names is to know what all resources is available in the portal.

The returned list includes the resources that are found under the Resources tab of the WebCenter Portal Administration console, and include resources like page templates, navigations, skins, page styles, and others.

Navigation Paths to siteresources

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      siteresources
```

Supported Methods for siteresources

The following methods are supported by this resource:

- `GET`
  - **request - body:** None
  - **query parameters:**
    - * `projection` - Allowed values are `summary` and `details`. The default is `summary`.
    - * `q` - You can search on `siteResourceType` and/or `seeded`.

      If `siteResourceType` is specified, the query returns all site resource names for that site resource type.

      The format is: `q = siteResourceType:equals:`<*value*>

      The possible values are `siteTemplate`, `contentPresenter`, `pageStyle`, `navigation`, `resourceCatalog`, or `skin`.

      Example:

`q=siteResourceType:equals:siteTemplate`

If `seeded` is specified as `true`, the query returns all site resources names that are seeded.

The format is: `q=seeded:equals:`<*value*>.

The possible values are `true` or `false`.

Example:

`q=seeded:equals:false` (returns all non-seeded resources)

If a non-seeded site template is required, the query is:

`siteResourceType:equals:siteTemplate;seeded:equals:false`

– **response - body:** list of all site resource names for all the site resource types for the specified scope. If the `siteResourceType` is specified, returns all the site resource names for that site resource type.

Read-Only Elements for siteresources

Table 56–7 lists the read-only elements for siteresources.

Table 56–7 Read-Only Elements for urn:oracle:webcenter:siteresources

Element	Type	Description
guid	String	Global ID for the site resource.
displayName	String	Name of the site resource as displayed to end users.
name	String	The name of the site resource. A complete list of all of the site resources, by name, is provided in Table 56–8.
description	String	Description of the site resource.
siteResourceType	String	Type of the site resource.
scopeName	String	Either the name of the space or the default scope at the application level.
seeded	Boolean	Set to true if the site resource is pre-populated.
visible	Boolean	Set to true if this site resource is visible in the user interface.
createdBy	String	Username of the user who created the site resource.
createdDate	Date	Date the site resource was created.
modifiedBy	String	Username of the user who updated the site resource.
modifiedDate	Date	Date on which the site resource was modified.
version	String	Version of the site resource.

List of Site Resources by Name

Table 56–8 lists the site resources by name, and gives the type and description of each resource.

Table 56–8 List of Site Resources by Name Provided by WebCenter Portal

Name	Type	Description
Accordion View	contentPresenter	Displays multiple content items in an accordion (stacked) format. When an item is clicked, the other items collapse to reveal the selected items details.
Blank	pageStyle	Blank Page Style
Blank	taskFlowStyle	Blank
Blog	pageStyle	Blog Page Style
Bulleted View	contentPresenter	Displays multiple content items as a bulleted list. Only content items are displayed; sub-folders are omitted.
Bulleted with Folder Label View	contentPresenter	Displays multiple content items as a bulleted list. The name of the parent folder is displayed as a label above the list. Only content items are displayed; sub-folders are omitted.
Carousel View	contentPresenter	Displays multiple content items in a carousel format. Users browse through items using a slider bar from left to right.
Default Document Details View	contentPresenter	Displays detailed information about a single content item, including creation date, modification date, creator, user who last modified the item, and path, as well as any comments.
Default Home Portal Catalog	resourceCatalog	Used when editing application-level pages and task flows in your Home portal.
Default List Item View	contentPresenter	Used by a single content item view to display a single line with an icon and item name as a link that either displays or downloads the item when clicked.
Default List Item View for Folders	contentPresenter	Used by a single content item view to display a single line with an icon and item name as a link that either displays or downloads the item when clicked.
Default Page Template Catalog	resourceCatalog	Used when editing page templates
Default Portal Catalog	resourceCatalog	Used when editing portal-level pages and task flows
Default View	contentPresenter	Displays a single content item. Image and HTML content items are displayed directly in the browser. For other item types, details are displayed, along with a link to download the associated file.
Fusion FX	skin	
Fusion Side Navigation	siteTemplate	Stretching Page Layout with Side Navigation. Use Fusion FX Skin.
Fusion Top Navigation	siteTemplate	Stretching Page Layout with Top Navigation. Use Fusion FX Skin.
Home Page	pageStyle	Home Page style
Icon View	contentPresenter	Displays multiple content items in a tiled format, using icons to represent sub-folders and content items.

Table 56–8 (Cont.) List of Site Resources by Name Provided by WebCenter Portal

Name	Type	Description
Left Narrow	pageStyle	Left Narrow Page Style
List View	contentPresenter	Displays multiple content items in a simple list.
List with Details Panel View	contentPresenter	Displays multiple content items in a list on the left. A panel on the right displays the details of a selected item.
Parameter Form	taskFlowStyle	
Right Narrow	pageStyle	
Sortable Table View	contentPresenter	Displays multiple content items in a sortable table that includes the document name, date created, and date modified.
Html Page	pageStyle	HTML page style
Spaces Default Navigation Model	navigation	Navigation model that displays current pages in a portal
Portals Navigation with Blogs/Wikis/Lists Submenus	navigation	Navigation model that displays current pages and submenus for blogs, wikis and lists
Stretch	taskFlowStyle	
Tabbed View	contentPresenter	Displays multiple content items as tabs. Clicking a tab displays the associated item's details.
Three Column	pageStyle	Three Column Page Style
Web Page	pageStyle	Web Page Page Style
Public-Pages Template	siteTemplate	Default Page Template for Public pages.
Collaborative with Top Navigation	siteTemplate	Page Template for Collaborative Portals, with Flowing Layout and Top Navigation. Use WebCenter Portals FX Skin.
Portal FX	skin	Portal FX Skin
Portal-centric with Top Navigation	siteTemplate	Page Template for Portal-centric Sites, with Flowing Layout and Top Navigation. Use Portal FX Skin.
Side Navigation	siteTemplate	Flowing Page Layout with Side Navigation. Use Portal FX Skin.
Side Navigation (Stretch)	siteTemplate	Stretching Page Layout with Side Navigation. Use Portal FX Skin.
Top Navigation	siteTemplate	Default Page Template with Flowing Layout and Top Navigation. Use Portal FX Skin.
Top Navigation (Stretch)	siteTemplate	Stretching Page Layout with Top Navigation. Use Portal FX Skin.
Wiki	pageStyle	Wiki Page Style

Writeable Elements for siteresources

There are no writeable elements for this resource.

56.2.4.3 urn:oracle:webcenter:spaces:resource:templates

Use this resource type to identify the URI to use to retrieve a list of portal templates (`GET`). The response from a `GET` operation includes a list of template names. The main purpose of retrieving template names is to provide a value for the `templateName` parameter for the create portal command.

Navigation Paths to templates

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      resource
         templates
```

Supported Methods for templates

The following methods are supported by this resource:

- `GET`
  - **request - body:** None
  - **query parameters:**
    - `startIndex`
    - `projection` - Allowed values are `summary` and `details`. The default is `summary`.
    - `q` - Performs searches.
    - `itemsPerPage`
  - **response - body:** list of template names

For more information about query parameters, see Section 53.5.2.5, "Templates."

Resource Types Linked to from templates

Table 56–9 lists the resource types that the client can link to from this resource.

Table 56–9 Related Resource Types for urn:oracle:webcenter:spaces

rel	resourceType
self	`urn:oracle:webcenter:spaces:resource:templates`

56.2.4.4 urn:oracle:webcenter:space

Use this resource type to identify the URI to use to view details for a single portal (`GET`), create a nested portal (`POST`), or delete a portal (`DELETE`). The response from a `GET` operation includes the specific portal identified by the URI, including its creator, description, members, and custom attributes.

> **Note:** The response from this resource also includes a link to the portal's message board.

Navigation Paths to space

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      space
```

Supported Methods for space

The following methods are supported by this resource:

- GET
  - **request - body:** None
  - **query parameters:**
    - `projection` - Allowed values are `summary`, and `details`. The default is `details`. Choose `summary` to exclude member and custom attribute details.
  - **response - body:** Space
- POST – Creates a new portal that is a child of the named portal (a subportal). This feature supports creating hierarchical or nested portals.
  - **request - body:** Space

```
<space>
   <name>FooSpace</name>
   <description>foobar</description>
   <templateName>CommunityOfInterest</templateName>
</space>
```

Note: The `templateName` parameter must be a valid template name returned from urn:oracle:webcenter:spaces:resource:templates. For example, the default template names are:

```
Basic
CommunityOfInterest
ProjectSpace
```

- DELETE – Deletes the named portal.
  - **request - body:** None

    On delete, a 204 status code is returned. If the portal does not exist or the user does not have permissions to delete the portal, a 403 Forbidden status is returned.

For more information about query parameters, see Section 53.5.2.5, "Templates."

Writable Elements for space

Table 56–10 lists the writable elements for this resource.

Table 56–10 Writable Elements for urn:oracle:webcenter:space

Element	Type	Description
description	String	Description of the portal.
name	String	Internal name for the portal.

Table 56–10 (Cont.) Writable Elements for urn:oracle:webcenter:space

Element	Type	Description
templateName	String	Must be a valid template name returned from urn:oracle:webcenter:spaces:resource:templates. For example, the default template names are: Basic CommunityOfInterest ProjectSpace

Read-only Elements for space

Table 56–11 lists the read-only elements for this resource.

Table 56–11 Read-only Elements for urn:oracle:webcenter:space

Element	Type	Description
guid	String	Global ID for the portal.
creator	String	ID of the user who created the portal.
author	personReference	User information about the user who created the portal, including GUID, ID, display name, and a link to the profile icon (same user as creator).
displayName	String	Name of the portal as displayed to members.
iconUrl	String	Fully qualified URL for the portal's icon image.
logoUrl	String	Relative URL for the portal's logo image.
isOffline	Boolean	Indicates whether the portal is offline or online.
isDiscoverable	Boolean	Specifies whether the portal is discoverable.
isPublic	Boolean	Specifies whether the portal is public.
keywords	String	Lists keywords for the portal.
mailingList	String	Lists the mailing list email for the portal if it has one.
parentDisplayName	String	Shows the parent display name if the portal is a child portal and has a parent. In this case, there will also be an isInheritFromParent boolean element that signifies whether the permissions of the parent portal are inherited by the child portal or not. Specifically, members of the parent portal will be inherited.
serviceDataCopied	String	List of service ids whose data is to be copied to new portals/templates when created based off this portal.
defaultLanguage	String	The default language.
landingPage	String	URI to the portal landing page if specified.
isTemplate	Boolean	Specifies whether or not this is a Template.

Table 56–11 (Cont.) Read-only Elements for urn:oracle:webcenter:space

Element	Type	Description
`isUnsubscriptionApprovalRequired`	Boolean	Specifies whether or not you need approval to unsubscribe.
`isPublishRss`	Boolean	Specifies whether or not the portal has an associated RSS feed.
`isClosed`	Boolean	Specifies whether or not the portal is closed.
`isBlockAllAccess`	Boolean	Specifies whether or not all access to portal is blocked (not sure how this happens).
`members`	String	Returns the members element for the portal.
`attributes`	String	Returns the attributes element for the portal.

Resource Types Linked to from space

Table 56–12 lists the resource types that the client can link to from this resource.

Table 56–12 Related Resource Types for urn:oracle:webcenter:space

rel	resourceType

self	`urn:oracle:webcenter:space`
	`urn:oracle:webcenter:space:attributes`
	`urn:oracle:webcenter:space:members`
	`urn:oracle:webcenter:space:roles`
	`urn:oracle:webcenter:space:icon`
	`urn:oracle:webcenter:activities:stream`
	`urn:oracle:webcenter:messageBoard`

56.2.4.5 urn:oracle:webcenter:space:resourceindex

Use this resource type to identify the URI to use to view the Portal resource index.

Navigation Paths to resourceindex

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      space
```

Supported Methods for resourceindex

The following methods are supported by this resource:

- GET
  - **request - body:** None
  - **query parameters:** None
  - **response - body:** resource index

Resource Types Linked to From resourceindex

Table 56–13 lists the resource types that the client can link to from this resource.

Table 56–13 Related Resource Types for urn:oracle:webcenter:space:resourceindex

rel	resourceType
	`urn:oracle:webcenter:space:lists`
	`urn:oracle:webcenter:discussions:forum`

56.2.4.6 urn:oracle:webcenter:space:roles

Use this resource type to get a list of roles for the named portal (`GET`). The results returned from this call can be used to add a new member to a portal with urn:oracle:webcenter:space:members.

Navigation Paths to space:roles

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      space
         roles
```

Supported Methods for roles

The following methods are supported by this resource:

- `GET` – Returns the list of roles assigned to the named portal.

Resource Types Linked to from roles

Table 56–14 lists the resource types that the client can link to from this resource.

Table 56–14 Related Resource Types for urn:oracle:webcenter:spaces:roles

rel	resourceType
self	`urn:oracle:webcenter:space:roles`
	urn:oracle:webcenter:space:role
urn:oracle:webcenter:parent	`urn:oracle:webcenter:space`

56.2.4.7 urn:oracle:webcenter:space:role

Use this resource type to get a named role (`GET`).

Use this resource type to get a list of roles for the named portal (`GET`). The results returned from this call can be used to add a new member to a portal with urn:oracle:webcenter:space:members.

Navigation Paths to space:role

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      space
         role
```

Supported Methods for role

The following methods are supported by this resource:

- `GET` – Returns the named role.

Resource Types Linked to from role

Table 56–14 lists the resource types that the client can link to from this resource.

Table 56–15 Related Resource Types for urn:oracle:webcenter:spaces:roles

rel	resourceType
self	`urn:oracle:webcenter:space:role` urn:oracle:webcenter:space:role
urn:oracle:webcenter:parent	`urn:oracle:webcenter:space`

56.2.4.8 urn:oracle:webcenter:space:icon

Use this resource type to get the icon used for the named portal (`GET`).

> **Note:** This resource type is used for portal references, not for portal responses. This resource can be used anywhere a portal is referenced, like in an activity stream or a portal event.

Navigation Paths to space:icon

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      space
         icon
```

Supported Methods for icon

The following methods are supported by this resource:

- `GET` – Returns the icon used for the named portal.

Resource Types Linked to from icon

Table 56–14 lists the resource types that the client can link to from this resource.

Table 56–16 Related Resource Types for urn:oracle:webcenter:spaces:roles

rel	resourceType
self	`urn:oracle:webcenter:space:icon`
urn:oracle:webcenter:parent	`urn:oracle:webcenter:space`

56.2.4.9 urn:oracle:webcenter:space:attributes

Use this resource type to identify the URI to use to view a list of custom attributes defined for a portal (`GET`). The response from a `GET` operation includes each custom attribute for the portal, and each attribute includes links to operate on that attribute. Also use this resource type to add custom attributes to a portal (`POST`).

Navigation Paths to attributes

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      space
         attributes
```

Supported Methods for attributes

The following methods are supported by this resource:

- GET
  - **request - body:** None
  - **query parameters:** None
  - **response - body:** collection of attributes
- POST – Adds a custom attribute to the named portal.
  - **request - body:**

```
<attribute>
   <name>anAttribute</name>
   <value>aValue</value>
</attribute>
```

Writeable Elements for attributes

Table 56–17 lists the writeable elements for this resource.

Table 56–17 Writeable Resources for space:attributes

Element	Type	Description
name	String	Attribute name.
value	String	Attribute value.

Resource Types Linked to From attributes

Table 56–18 lists the resource types that the client can link to from this resource.

Table 56–18 Related Resource Types for urn:oracle:webcenter:space:attributes

rel	resourceType
self	urn:oracle:webcenter:space:attributes
	urn:oracle:webcenter:space:attribute
urn:oracle:webcenter:parent	urn:oracle:webcenter:space

56.2.4.10 urn:oracle:webcenter:space:attribute

Use this resource type to identify the URI to use to view the name and value of single portal attribute (GET). The response from a GET operation includes the specific attribute identified by the URI.

Navigation Paths to attribute

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      space
         attributes
```

Supported Methods for attribute

The following methods are supported by this resource:

- GET
  - **request - body:** None
  - **query parameters:** None
  - **response - body:** attribute

Read-only Elements for attribute

Table 56–19 lists the read-only elements for this resource.

Table 56–19 Read-only Elements for urn:oracle:webcenter:space:attribute

Element	Type	Description
name	String	Name of the custom attribute.
description	String	Description of the custom attribute.
type	String	Data type of the custom attribute.
value	String	Value of the custom attribute.

Resource Types Linked to From attribute

Table 56–20 lists the resource types that the client can link to from this resource.

Table 56–20 Related Resource Types for urn:oracle:webcenter:space:attribute

rel	resourceType
self	`urn:oracle:webcenter:space:attribute`
urn:oracle:webcenter:parent	`urn:oracle:webcenter:space`

56.2.4.11 urn:oracle:webcenter:space:members

Use this resource type to identify the URI to use to view a list of members (enterprise users and groups) for the portal (GET). The response from a GET operation includes each member of the portal, each member includes links to operate on that member.

Navigation Paths to members

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      space
```

Supported Methods for members

The following methods are supported by this resource:

- GET
  - **request - body:** None

  - **query parameters:** None
  - **response - body:** collection of members
- POST – Adds a member (user or group) to the portal.
  - **request - body:** member

    To grant the participant role to the Sales group, use:

    ```
    <member>
        <name>sales</name>
        <role>Participant</role>
        <group>true</group>
    </member>
    ```

    To grant the participant role to the user Vicki, use:

    ```
    <member>
        <name>vicki</name>
        <role>Participant</role>
        <group>false</group>
    </member>
    ```

- DELETE – Removes the named member (user or group) from the portal. You can obtain the member guid with urn:oracle:webcenter:space:member.
  - **request - body:** None

  ```
  DELETE
  http://hostname:portnum/rest/api/spaces/spacename/members/member_guid
  ```

Writeable Elements of spaces:space:members

Table 56–21 Writeable Elements of spaces:space:members

Element	Type	Description
name	String	The member's name.
role	String	The member's role. Obtain this value from urn:oracle:webcenter:space:roles.

Resource Types Linked to From members

Table 56–22 lists the resource types that the client can link to from this resource.

Table 56–22 Related Resource Types for urn:oracle:webcenter:space:members

rel	resourceType
self	urn:oracle:webcenter:space:members urn:oracle:webcenter:space:member
urn:oracle:webcenter:parent	urn:oracle:webcenter:space

56.2.4.12 urn:oracle:webcenter:space:member

Use this resource type to identify the URI to use to view details for a portal member and their current role assignments (GET). The response from a GET operation includes the specific member identified by the URI, including a hyperlink to the member's profile.

Navigation Paths to member

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      space
         members
```

Supported Methods for member

The following methods are supported by this resource:

- GET
  - **request - body:** None
  - **query parameters:** None
  - **response - body:** member

Read-only Elements for member

Table 56–23 lists the read-only elements for this resource.

Table 56–23 Read-only Elements for urn:oracle:webcenter:space:member

Element	Type	Description
guid	String	Global ID for the portal member.
name	String	User ID of the portal member.
role	String	Role assigned to the member.
displayName	String	Display name of the member.

Resource Types Linked to From member

Table 56–24 lists the resource types that the client can link to from this resource.

Table 56–24 Related Resource Types for urn:oracle:webcenter:space:member

rel	resourceType
self	`urn:oracle:webcenter:space:member`
	`urn:oracle:webcenter:people:person`
urn:oracle:webcenter:people:icon	`urn:oracle:webcenter:people:person`

56.2.4.13 urn:oracle:webcenter:space:lists

Use this resource type to identify the URI to use to view (`GET`) and add (`POST`) lists for the portal. The response from a `GET` operation includes each list in the portal, and each list includes links used to operate on that list. The response from a `POST` operation includes the list that was created in this collection of lists and a link to operate on that list.

Navigation Paths to lists

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      resourceindex
```

```
space
   lists
```

Supported Methods for lists

The following methods are supported by this resource:

- `GET`
  - **request - body:** None
  - **query parameters:**
    - * `startIndex`
    - * `itemsPerPage`
    - * `q`

      You can search on `name`, `title`, `description`, `creator`, `created`, `modifier`, and `modified`.

      For string type elements (that is, `name`, `title`, `description`, `creator`, and `modifier`), you can use the following supported operands: `equals`, `not.equals`, and `contains`. For example:

      ```
      q=name:contains:issues
      q=creator:equals:monty
      ```

      For date type elements (that is, `created` and `modified`), you can use the following supported operands: `equals`, `not.equals`, `greater.than`, `greater.than.or.equals`, `less.than`, `less.than.or.equals`. For example:

      ```
      q=created:greater.than:10-SEP-2009
      ```

    - * `projection` - Allowed values are `summary` and `details`. The default is `summary`.
  - **response - body:** collection of lists
- `POST`
  - **request - body:** list
  - **response - body:** list

For more information about query parameters, see Section 53.5.2.5, "Templates."

Resource Types Linked to From lists

Table 56–25 lists the resource types that the client can link to from this resource.

Table 56–25 Related Resource Types for urn:oracle:webcenter:space:lists

rel	resourceType
self	`urn:oracle:webcenter:space:lists` `urn:oracle:webcenter:space:list`

56.2.4.14 urn:oracle:webcenter:space:list

Use this resource type to identify the URI to use to view (`GET`), update (`PUT`), and delete (`DELETE`) a list belonging to a portal. The response from a `GET` operation includes the specific list identified by the URI. The response from a `PUT` operation includes the modified version of the list identified by the URI. The response to a `DELETE` operation is a 204 status code.

Navigation Paths to list

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      resourceindex
         lists
             list
```

Supported Methods for list

The following methods are supported by this resource:

- `GET`
  - **request - body:** None
  - **query parameters:** None
  - **response - body:** list
- `PUT`
  - **request - body:** list
  - **response - body:** list
- `DELETE`
  - **request - body:** None
  - **response - body:** None

Writable Elements for list

Table 56–26 lists the writable elements for this resource.

Table 56–26 Writable Elements for urn:oracle:webcenter:space:list

Element	Type	Required	Constraints	Description
name	String	Yes	1 or more characters	Name of the portal list.
description	String	No	0 or more characters	Description of the list.
columns	urn:oracle:webcenter:space:list:columns	Yes	1 or more characters	Columns that make up the list.

Read-only Elements for list

Table 56–27 lists the read-only elements for this resource.

Table 56–27 Read-only Elements for urn:oracle:webcenter:list

Element	Type	Description
id	String	ID of the list.
name	String	Name of the list.
description	String	Description of the list.

Table 56–27 (Cont.) Read-only Elements for urn:oracle:webcenter:list

Element	Type	Description
scopeguid	String	Global ID of the parent portal.
scopename	String	Name of the parent portal.
creator	String	ID of the user that created the list.
author	personReference	User information about the user that created the list, including GUID, ID, display name, and a link to the profile icon (same user as `creator`).
created	Date	Date the list was created.
modifier	String	ID of the user that last modified the list.
modifiedByUser	personReference	User information about the user that last modified the list, including GUID, ID, display name, and a link to the profile icon (same user as `modifier`).
modified	Date	Date the list was last modified.
columns	String	Columns that make up the list.

Resource Types Linked to From list

Table 56–28 lists the resource types that the client can link to from this resource.

Table 56–28 Related Resource Types for urn:oracle:webcenter:space:list

rel	resourceType

self	`urn:oracle:webcenter:space:list`
	`urn:oracle:webcenter:space:list:rows`
	`urn:oracle:webcenter:space:list:columns`

56.2.4.15 urn:oracle:webcenter:space:list:rows

Use this resource type to identify the URI to use to view (`GET`) and create (`POST`) list rows (list items). The response from a `GET` operation includes each row in this list, each row includes links to operate on that row. The response from a `POST` operation includes the row that was created in this list and a link to operate on that row.

Navigation Paths to rows

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      resourceindex
        lists
           list
              rows
```

Supported Methods for rows

The following methods are supported by this resource:

- `GET`
  – **request - body:** None

  - **query parameters:**
    - * `startIndex`
    - * `itemsPerPage`
    - * `q`

      You can search on `name`, `title`, `description`, `creator`, `created`, `modifier`, and `modified`.

      For string type elements (that is, `name`, `title`, `description`, `creator`, and `modifier`), you can use the following supported operands: `equals`, `not.equals`, `contains`, and `starts.with`. For example:

      ```
      q=name:contains:issues
      q=creator:equals:monty
      ```

      For date type elements (that is, `created` and `modified`), you can use the following supported operands: `equals`, `not.equals`, `greater.than`, `greater.than.or.equals`, `less.than`, `less.than.or.equals`. For example:

      ```
      q=created:greater.than:10-SEP-2009
      ```

  - **response - body:** collection of rows
- POST
  - **request - body:** row
  - **response - body:** row

For more information about query parameters, see Section 53.5.2.5, "Templates."

Resource Types Linked to From rows

Table 56–29 lists the resource types that the client can link to from this resource.

Table 56–29 Related Resource Types for urn:oracle:webcenter:space:list:rows

rel	resourceType
self	`urn:oracle:webcenter:space:list:rows`
parent	`urn:oracle:webcenter:space:list`
	`urn:oracle:webcenter:space:list:row`

56.2.4.16 urn:oracle:webcenter:space:list:row

Use this resource type to identify the URI to use to view (`GET`), update (`PUT`), and delete (`DELETE`) a list row (list item). The response to a `GET` operation includes the specific row identified by the URI. The response to a `PUT` operation includes the modified version of the row identified by the URI. The response to a `DELETE` operation is a 204 status code.

Navigation Paths to row

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      resourceindex
         lists
            list
```

```
rows
   row
```

Supported Methods for row

The following methods are supported by this resource:

- GET
  - **request - body:** None
  - **query parameters:** None
  - **response - body:** row
- PUT
  - **request - body:** row
  - **response - body:** row
- DELETE
  - **request - body:** None
  - **response - body:** None

For more information about query parameters, see Section 53.5.2.5, "Templates."

Writable Elements for row

Table 56–30 lists the writable elements for this resource.

Table 56–30 Writable Elements for urn:oracle:webcenter:space:list:row

Element	Type	Required	Constraints	Description
columns.column.id	String	Yes	1 or more characters	ID of the column (containing list item detail).
columns.column.name	String	No	1 or more characters	Name of the column.
columns.column.value	String	Yes	1 or more characters	Value of the column.

Read-only Elements for row

Table 56–31 lists the read-only elements for this resource.

Table 56–31 Read-only Elements for urn:oracle:webcenter:space:list:row

Element	Type	Description
id	String	ID of the row (list item).
listId	String	ID of the list.
scope	String	Global ID of the parent portal.
creator	String	ID of the user that created the list item.
author	personReference	User information about the user that created the list item, including GUID, ID, display name, and a link to the profile icon (same user as `creator`).
created	Date	Date the list item was created.
modifier	String	ID of the user that last modified the list item.

Table 56–31 (Cont.) Read-only Elements for urn:oracle:webcenter:space:list:row

Element	Type	Description
modifiedByUser	personReference	User information about the user that last modified the list item, including GUID, ID, display name, and a link to the profile icon (same user as `modifier`).
modified	Date	Date the list item was last modified.

Resource Types Linked to From row

Table 56–32 lists the resource types that the client can link to from this resource.

Table 56–32 Related Resource Types for urn:oracle:webcenter:space:list:row

rel	resourceType
self	`urn:oracle:webcenter:space:list:row`

56.2.4.17 urn:oracle:webcenter:space:list:columns

Use this resource type to identify the URI to use to view (`GET`) and create (`POST`) list columns (list item detail). The response from a `GET` operation includes each column in this list, each column includes link to operate on that column. The response from a `POST` operation includes the column created in this list and a link to operate on that column.

Navigation Paths to columns

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      resourceindex
        lists
           list
              columns
```

Supported Methods for columns

The following methods are supported by this resource:

- `GET`
  - **request - body:** None
  - **query parameters:**
    - `startIndex`
    - `itemsPerPage`
    - `q` - Search parameters `STARTS.WITH` and `END.WITH` are not supported.
  - **response - body:** collection of columns
- `POST`
  - **request - body:** column
  - **response - body:** column

For more information about query parameters, see Section 53.5.2.5, "Templates."

Resource Types Linked to From columns

Table 56–33 lists the resource types that the client can link to from this resource.

Table 56–33 Related Resource Types for urn:oracle:webcenter:space:list:columns

rel	resourceType
self	`urn:oracle:webcenter:space:list:columns`
parent	`urn:oracle:webcenter:space:list`
	`urn:oracle:webcenter:space:list:column`

56.2.4.18 urn:oracle:webcenter:space:list:column

Use this resource type to identify the URI to use to view (`GET`), update (`PUT`), and delete (`DELETE`) a list column (list item detail). The response from a `GET` operation includes the specific column identified by the URI. The response from a `PUT` operation includes the modified version of the column identified by the URI. The response from a `DELETE` operation is a 204 status code.

Navigation Paths to column

This section shows how the client can navigate through the hypermedia to access this resource:

```
resourceindex
   spaces
      resourceindex
         lists
            list
               columns
                 column
```

Supported Methods for column

The following methods are supported by this resource:

- `GET`
  - **request - body:** None
  - **query parameters:** None
  - **response - body:** column
- `PUT`
  - **request - body:** column
  - **response - body:** column
- `DELETE`
  - **request - body:** None
  - **response - body:** None

Writable Elements for column

Table 56–34 lists the writable elements for this resource.

Table 56–34 Writable Elements for urn:oracle:webcenter:space:list:column

Element	Type	Required	Constraints	Description
columns.column.id	String	Yes	1 or more characters	ID of the column (containing list item detail).
columns.column.name	String	No	1 or more characters	Name of the column.
columns.column.value	String	Yes	1 or more characters	Value of the column.

Read-only Elements for column

Table 56–35 lists the read-only elements for this resource.

Table 56–35 Read-only Elements for urn:oracle:webcenter:space:list:column

Element	Type	Description
id	String	ID of the column (list item detail).

Resource Types Linked to From column

Table 56–28 lists the resource types that the client can link to from this resource.

Table 56–36 Related Resource Types for urn:oracle:webcenter:space:list:column

rel	resourceType
self	`urn:oracle:webcenter:space:list:column`

56.3 Exposing Enterprise Applications in Portals

You can expose various enterprise applications inside a portal, including:

- Portal Framework applications—applications developed using the WebCenter Portal Framework.
- Other portals in the WebCenter Suite—for example, Oracle Portal.
- Oracle Applications Unlimited products—for example, E-Business Suite, Siebel, PeopleSoft, and JDEdwards.
- Other custom applications—applications developed using non-Oracle platforms.

Technologies such as WSRP, Oracle JSF Portlet Bridge, ADF task flows, and WebCenter Portal support for external applications, enable the WebCenter Portal to consume and present application data in a unified way. The following sections tell you how.

This section includes the following subsections:

- Section 56.3.1, "Exposing Portal Framework Applications in Portals"
- Section 56.3.3, "Exposing Non-Oracle Applications in Portals"

56.3.1 Exposing Portal Framework Applications in Portals

You can expose Portal Framework applications, built using the WebCenter Portal Framework, as portlets and task flows in a portal:

- **Portlets:** Web components that are deployed inside a container and generate dynamic content. For more information, see Chapter 57, "Introduction to Portlets."

- **Oracle JSF Portlet Bridge:** A technology that enables you to easily expose existing ADF applications and task flows as JSR 168 portlets. For more information, see Chapter 58, "Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge."
- **Task flows:** ADF navigational components that define the transition between states and activities using call methods on managed beans, evaluating an EL expression, and so on. For more information see the "Getting Started with ADF Task Flows" section in *Fusion Developer's Guide for Oracle Application Development Framework*.

56.3.2 Exposing Other Oracle Applications in WebCenter Portal

You can expose Oracle Applications Unlimited products, for example, E-Business Suite, Siebel, PeopleSoft, and JDEdwards, in WebCenter Portal using:

- **Web services and ADF:** Enterprise applications like Siebel expose various Web service interfaces. You can leverage these Web service interfaces to build data controls, ADF task flows, and portlets that can be consumed in WebCenter Portal.
- **Prebuilt portlets:** Enterprise applications such as Oracle E-Business Suite ship portlets out of the box that you can register with WebCenter Portal and consume in the same way as any other portlet.

For more information about integrating Oracle Applications Unlimited in WebCenter Portal and Portal Framework applications, see Chapter 54, "Integrating Other Oracle Applications."

56.3.3 Exposing Non-Oracle Applications in Portals

You can expose Web applications developed using non-Oracle platforms in the WebCenter Portal, as follows:

- **Support for external applications:** External applications enable credential stores to pass mapped user identities to Web applications that require their own authentication. For more information, see the "Registering External Applications" section in *Administering Oracle WebCenter Portal*, and the "Working with External Applications" chapter in *Using Oracle WebCenter Portal*.
- **Composer iframe-level integration:** The Composer *Web Page* page style and component displays any Web page content, including pages from applications built using a different Web technology. For more information, see the "Working with the Web Page Component" section in *Building Portals with Oracle WebCenter Portal*.
- **Raw HTML markup injection in Composer:** The Composer *HTML Markup* layout component injects HTML or JavaScript snippets into pages in Portal. You can use this component to display content from an external source. For more information see the "Working with the HTML Markup Component" section in *Building Portals with Oracle WebCenter Portal*.
- **OmniPortlet:** A portlet that publishes data from various data sources using a variety of layouts. For more information, see Chapter 64, "Creating Portlets with OmniPortlet."

Part X

Working with Portlets and Pagelets

Part X contains the following chapters:

57 Introduction to Portlets

This chapter provides an overview of portlets and describes their uses. It explains portlet anatomy and the resources you can use to create portlets. This chapter also explains the features, technologies, and tools to help you decide which portlet building technology best suits your needs.

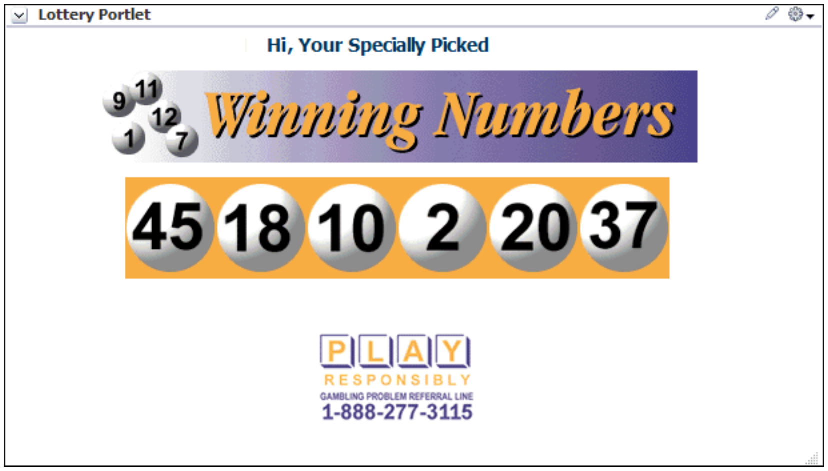
This chapter includes the following topics:

- Section 57.1, "Introduction to Portlets"
- Section 57.2, "Portlet Anatomy"
- Section 57.3, "Portlet Resources"
- Section 57.4, "Portlet Development"

57.1 Introduction to Portlets

A *portlet* is a reusable web component that can draw content from many different sources. Portlets can contain anything from static HTML content to Java controls to complex web services and process-heavy applications.

Figure 57–1 The Lottery Sample Portlet



Lottery Portlet

Hi, Your Specially Picked

Portlets provide a means of presenting data from multiple sources in a meaningful and related way. Portlets can display excerpts of other web sites, generate summaries of key information, perform searches, and access assembled collections of information from a variety of data sources. Because several different portlets can be placed on a single page, users benefit from a single-source experience even though, in reality, the content may be derived from multiple sources.

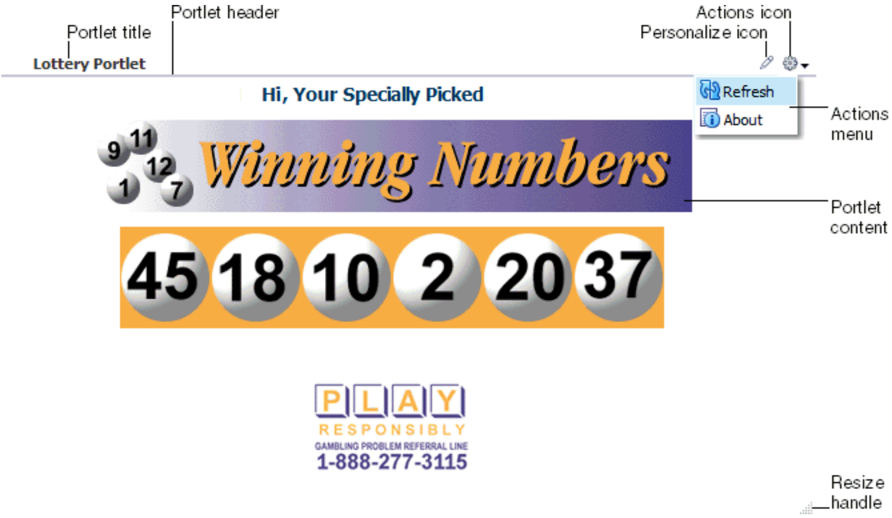
Portlets can communicate with each other using events and other techniques. A single portlet can also have multiple instances—in other words, it can appear on a variety of different pages within a single portal, or even across multiple portals. Page designers can customize portlets to meet the needs of their specific audience. With the correct privileges, individual end users can further personalize portlets for their own particular requirements.

Oracle WebCenter Portal supports the development of portlets using JSR 286, an industry standard. You can also create portlets from existing JSF applications using the Oracle JSF Portlet Bridge. For more information, see Section 57.3, "Portlet Resources."

57.2 Portlet Anatomy

Portlet anatomy is the visual representation of the portlet on a page. Figure 57–2 shows some aspects of portlet anatomy that you might expect to see in a typical portlet in a WebCenter Portal Framework application. Note that the same portlet displayed in a different application could look different.

Figure 57–2 A Sample Portlet Showing Typical Portlet Anatomy



Aspects of portlet anatomy (some, but not all, of which are illustrated in Figure 57–2) include:

- **Portlet chrome**—A collective term for the different types of decoration that surround the portlet, including the header, shadow, resize handle, Actions menu, and icons.
- **Portlet header**—The area of the portlet that displays the portlet icon, title, **Actions** menu, and **Customize** and **Personalize** icons.
- **Portlet icon**—A small image in the portlet header used to visually identify the portlet.
- **Portlet title**—Text in the portlet header that indicates the purpose of the portlet. End users may be able to personalize this title at runtime to make it more meaningful to their particular usage.

- **Personalize icon—**An icon in the portlet header that enables end users to make changes to the portlet that only they can see.

  The **Personalize** icon is displayed only to authenticated users (that is, users who are logged in). It does not display to public users or unauthenticated users. You must implement some form of application security for users to be able to personalize their portlet views.

- **Customize icon—**An icon in the portlet header that enables application administrators to make changes to the default settings of the portlet at runtime. These changes are visible to all users.

  A typical customization setting is the portlet title. At runtime, the application administrator can determine what title should appear in the portlet header.

- **Actions icon—**An icon in the portlet header that displays the **Actions** menu when clicked.

- **Actions menu—**A menu that lists various actions that users can perform on the portlet. The actions listed depend on whether the user is logged in, what privileges that user has, the functionality provided by the portlet, and the options specified when the portlet was added to the page at design time. Actions include **Move**, **Remove**, **Refresh**, **Move Up**, and **Move Down**. The **Actions** menu also provides access to other portlet modes available for the portlet, such as About, Help, Configure, and Print.

  If the user who added the portlet to the page chose to not display the portlet header, the **Actions** menu is displayed on a fade in/fade out toolbar that displays on mouse rollover.

- **Resize handle—**An area at the bottom right of the portlet that enables users to change the size of the portlet.

- **Scroll bars—**Display when the portlet content does not fit the width and height specified for the portlet, providing access the content that is not initially displayed.

- **Portlet content—**The actual content of the portlet as determined by the portlet logic.

The portlet anatomy rendered on the page is controlled by two factors:

- The portlet's own logic, as determined by the portlet developer. This includes which portlet modes are supported by the portlet.

- The attributes of the portlet tag that binds the portlet to the page, as determined by the application developer who added the portlet to the page at design time.

For example, when designing the portlet, the portlet developer may implement Help mode for the portlet. When an application developer adds the portlet to the page, he or she can determine, using the portlet tag attribute `isHelpModeAvailable`, whether or not to include the **Help** command in the portlet's **Actions** menu. If the application developer sets `isHelpModeAvailable` to false, the **Help** command is not included in the **Actions** menu even though it is provided in the portlet logic. Conversely, if the portlet developer has not implemented Help mode for a portlet, the **Help** command is not displayed in the **Actions** menu, even if `isHelpModeAvailable` is set to `true`.

For information about the different attributes available for the portlet tag, see Section 63.6, "Setting Attribute Values for the Portlet Tag."

57.3 Portlet Resources

The portlets in your applications can come from a variety of sources, including other Oracle products and third-party vendors. Portlet resources also include custom built Java portlets built using WebCenter Portal's Java portlet wizard for JSR 286. Each of these resources offers different product features and are targeted toward users with different levels of experience.

This section includes the following topics:

- Section 57.3.1, "Prebuilt Portlets"
- Section 57.3.2, "Java Server Faces (JSF) Portlets"
- Section 57.3.3, "Custom Java Portlets"
- Section 57.3.4, "OmniPortlet"
- Section 57.3.5, "Web Clipping Portlet"
- Section 57.3.6, "Portlet Technologies"
- Section 57.3.7, "When To Use Portlets Versus Task Flows?"

57.3.1 Prebuilt Portlets

What Are They?

Oracle provides integration with other Oracle applications by enabling you to expose functionality as portlets:

- **Peoplesoft**—You can expose Peoplesoft applications as WSRP portlets. For more information, see Section 54.5, "Integrating PeopleSoft Applications."
- **JD Edwards**—You can expose JD Edwards standalone regions as portlets. For more information, see Section 54.4, "Integrating JD Edwards Applications."
- **Oracle E-Business Suite**—Oracle E-Business Suite provides several prebuilt portlets, such as Applications Navigator, Favorites, and Worklist, that you can add to your Portal Framework applications. For more information, see Section 54.3, "Integrating E-Business Suite Applications."

Other prebuilt portlets are available through Oracle's partnerships with leading system integrators, software vendors, and content providers.

Who Is the Intended User?

Fully developed, downloadable portlets are best suited for use by application developers who understand how to download, install, and register producers in WebCenter Portal. They are available for use by all levels of experience.

When Should They Be Used?

Use prebuilt portlets when your needs are met by the functions the portlets offer and the level of personalization readily available is sufficient to complete the desired task.

Consider alternatives when you want to extend or personalize the portlet, for example, when you need a different user interface or when the functionality you require is not available out of the box.

57.3.2 Java Server Faces (JSF) Portlets

What Are They?

JSF portlets are created from JSF applications using the *Oracle JSF Portlet Bridge*. The Oracle JSF Portlet Bridge enables application developers to expose their existing JSF applications and task flows as JSR 286 Java portlets. The Oracle JSF Portlet Bridge simplifies the integration of JSF applications with WSRP portlet consumers, such as WebCenter Portal.

JSF portlets do not require separate source code from that of the JSF application. Since these portlets are created using the Oracle JSF Portlet Bridge, you need only maintain one source for both your application and your portlets. Similarly, when you deploy your portletized JSF application, the JSF portlets are also deployed with it. Therefore, using the Oracle JSF Portlet Bridge eliminates the requirement to store, maintain, and deploy your portlets separately from your application.

For more information about creating JSF portlets, see Chapter 58, "Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge."

Who Is the Intended User?

Application developers with knowledge of Faces.

When Should They Be Used?

JSF portlets are best suited when application developers intend to display content from a JSF application, or from individual task flows within the application, as a portlet without hosting the entire application, or without separately building a portlet for the same. When portletized, the consumption of the portlet is the same as registering any WSRP producer.

57.3.3 Custom Java Portlets

Custom Java portlets are portlets that you write yourself, in Java, using the Java Portlet Specification 2.0 (JSR 286). WebCenter Portal provides a declarative wizard in JDeveloper for simplifying the creation of standards-based JSR 286 Java portlets. This wizard assists in the construction of the framework within which you create the portlet.

Note: You can consume legacy JSR 168 and WSRP 1.0 portlets in your applications, for example from Oracle WebLogic Portal. There is no need to convert these portlets to JSR 286 first. However, when creating new Java portlets we recommend using JSR 286 to take advantage of features such as public render parameters and portlet events.

Who Is the Intended User?

Use of the wizard is easy, but creation of the portlet logic is best performed by experienced and knowledgeable Java developers who are comfortable with JSR 286 and who understand the configuration of producers.

When Should They Be Used?

Consider using custom Java portlets when you cannot find a prebuilt portlet or existing JSF application to address your requirements.

Use custom Java portlets when you have very specialized business rules or logic, or when you require personalized authentication, granular processing of dynamic results, or complete user interface control.

For more information about creating custom Java portlets, see Chapter 59, " Building Standards-Based Java Portlets Using JSR 286."

57.3.4 OmniPortlet

OmniPortlet is a declarative portlet-building tool that enables you to build portlets against a variety of data sources, including XML files, character-separated value files (CSV, for example, spreadsheets), web services, databases, and web pages. OmniPortlet users can also choose a prebuilt layout for the data. Prebuilt layouts include tabular, news, bullet, form, chart, or HTML. HTML layout enables OmniPortlet users to write their own HTML and inject the data into the HTML.

Who Is the Intended User?

Business users with a minimum knowledge of the URLs to their targeted data and limited programming skills may find OmniPortlet a valuable tool.

When Should It Be Used?

Use OmniPortlet when you want to build portlets rapidly against a variety of data sources with a variety of layouts. Consider alternatives when you want complete control of the design and functionality of the portlet.

For more information about OmniPortlet, see Chapter 64, "Creating Portlets with OmniPortlet."

As an alternative to OmniPortlet, if you want to expose data from a SQL database or web service, you should consider using Data Presenter. For more information, see the "Working with Data Presenter" chapter in *Building Portals with Oracle WebCenter Portal*.

57.3.5 Web Clipping Portlet

> **Note:** Instead of using the Web Clipping portlet, consider using a clipper pagelet using Oracle WebCenter Portal's Pagelet Producer. For more information, see the "Managing the Pagelet Producer" chapter in *Administering Oracle WebCenter Portal*.

What Is It?

The Web Clipping portlet is a browser-based declarative tool that enables the integration of any web application with a Framework application. The Web Clipping portlet is designed to provide quick integration by leveraging the web application's existing user interface. The Web Clipping portlet has been implemented as an Oracle PDK-Java portlet.

To create a Web Clipping portlet, the Framework application developer uses a web browser to navigate to a web page that contains desired content. Through the Web Clipping Studio, the application developer can drill down through a visual rendering of the target page to choose the desired content.

Who Is the Intended User?

The Web Clipping portlet is best suited for use by application developers and component developers who want to leverage an existing web page for rapid portlet development. This portlet can be added to a page by any user with the appropriate privileges.

When Should It Be Used?

Use Web Clipping when you want to repurpose live content and functionality from an existing web page and expose it in your Framework application as a portlet. Consider alternatives to change the way information is presented in the clipped portlet. That is, you do not want to control the User Interface (UI) or application flow, and you are accessing web-based applications. For a greater level of control, use OmniPortlet's Web Page data source instead of the Web Clipping portlet. (For more information, see Section 57.3.4, "OmniPortlet.")

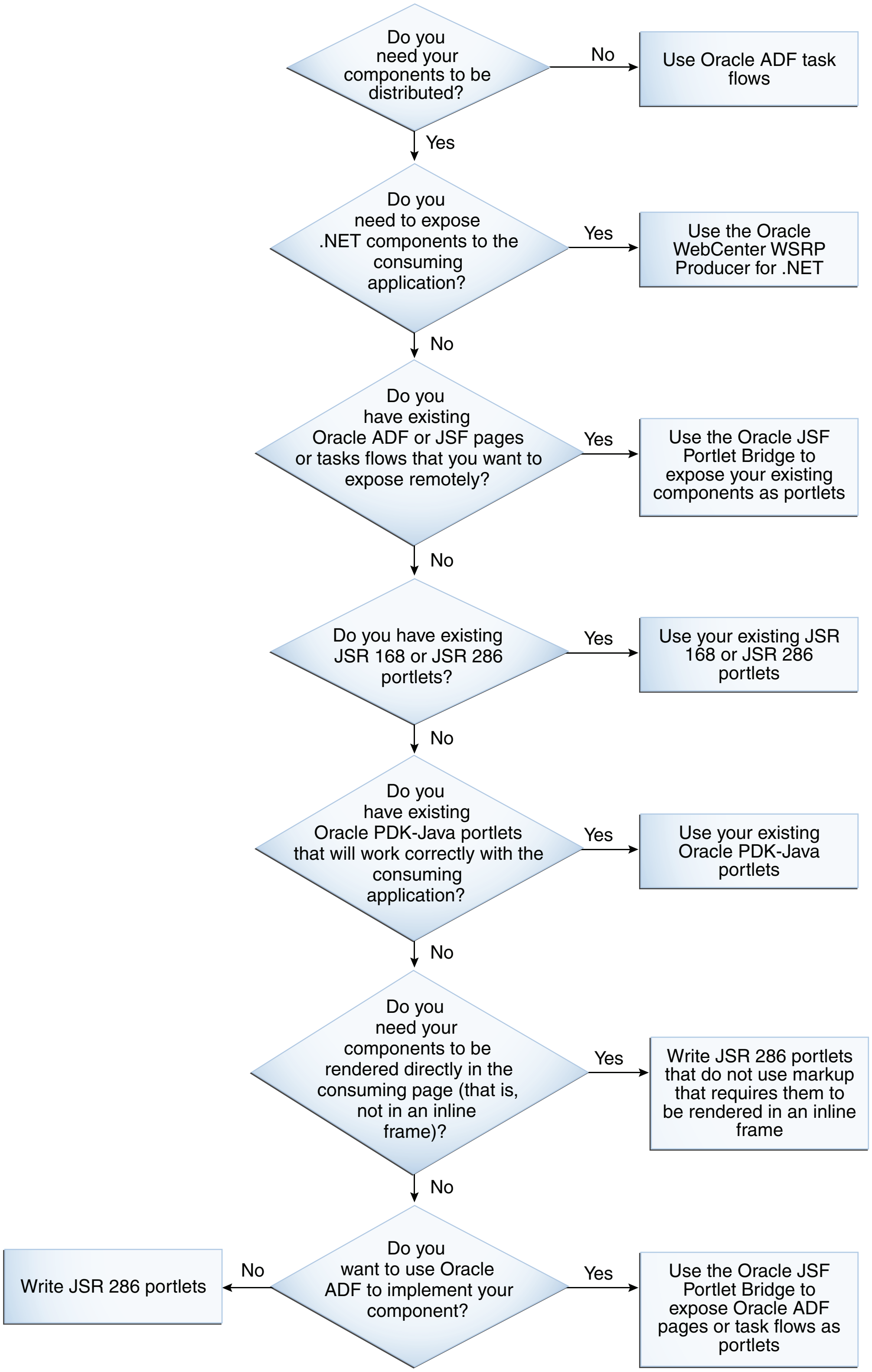
For more information about using the Web Clipping portlet, see Chapter 65, "Creating Content-Based Portlets with Web Clipping."

57.3.6 Portlet Technologies

When creating new portlets, there are several different technologies you can use. The technology you use depends on several factors.

Figure 57–3 provides a decision tree to enable you to determine which portlet implementation technology best fits your environment and requirements. The list below Figure 57–3 presents the same information in a non-graphical format and provides additional notes.

Figure 57–3 Decision Tree for Portlet Technologies


Do you need your components to be distributed?
No
Use Oracle ADF task flows
Yes
Do you need to expose .NET components to the consuming application?
Yes
Use the Oracle WebCenter WSRP Producer for .NET
No
Do you have existing Oracle ADF or JSF pages or tasks flows that you want to expose remotely?
Yes
Use the Oracle JSF Portlet Bridge to expose your existing components as portlets
No
Do you have existing JSR 168 or JSR 286 portlets?
Yes
Use your existing JSR 168 or JSR 286 portlets
No
Do you have existing Oracle PDK-Java portlets that will work correctly with the consuming application?
Yes
Use your existing Oracle PDK-Java portlets
No
Do you need your components to be rendered directly in the consuming page (that is, not in an inline frame)?
Yes
Write JSR 286 portlets that do not use markup that requires them to be rendered in an inline frame
No
Do you want to use Oracle ADF to implement your component?
No
Write JSR 286 portlets
Yes
Use the Oracle JSF Portlet Bridge to expose Oracle ADF pages or task flows as portlets

1. Do you need your components to be distributed?
   - **Yes**—Go to Question 2.

- **No**—You don't need portlets. Use Oracle ADF task flows (or some other technology) that are local to your consuming application. For more information, see the "Creating ADF Task Flows" part in the *Fusion Developer's Guide for Oracle Application Development Framework*.

Having a distributed environment results in a more complicated deployment and potentially makes it more difficult to track down issues. However, it also means that you can spread the processing load across multiple servers and enables your components to be used by several different consumers.

2. Do you need to expose .NET components to the consuming application?

- **Yes**—Use the Oracle WebCenter WSRP Producer for .NET. For more information see the *Developer's Guide for Oracle WebCenter WSRP Producer for .NET*.
- **No**—Go to Question 3.

The Oracle WebCenter WSRP Producer for .NET allows any .NET application to act as a WSRP producer.

3. Do you have existing Oracle ADF or JSF pages or task flows that you want to expose remotely?

- **Yes**—Use the Oracle JSF Portlet Bridge to expose your existing components. For more information, see Chapter 58, "Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge."
- **No**—Go to Question 4.

Using existing Oracle ADF components in this way provides a very convenient way of developing portlets, but be aware of the implications of using Oracle ADF to implement portlets, as outlined in Table 57–1.

4. Do you have existing JSR 168 or JSR 286 portlets?

- **Yes**—Use your existing JSR 168 or JSR 286 portlets. For more information, see Chapter 63, "Consuming Portlets."
- **No**—Go to Question 5.

WebCenter Portal exposes JSR 168 and JSR 286 portlets over WSRP, which are fully compatible with the WebCenter consumer, assuming such portlets do not make assumptions that are specific to a particular consumer.

5. Do you have existing Oracle PDK-Java portlets that will work correctly with the WebCenter Portal consumer?

- **Yes**—Use your existing PDK-Java portlets. For more information, see Chapter 63, "Consuming Portlets."
- **No**—Go to Question 6.

6. Do you have a requirement for your components to be rendered directly in the consumer page (that is, not in an inline frame)?

- **Yes**—Write JSR 286 portlets that do not use markup that requires them to be rendered in an inline frame. For more information, see Chapter 59, " Building Standards-Based Java Portlets Using JSR 286."
- **No**—Go to Question 7.

See Section 63.5.4, "What You May Need to Know About Inline Frames" for considerations relating to the use of inline frames to render portlets.

7. Do you want to use Oracle ADF to implement your component?

- **Yes**—Use the Oracle JSF Portlet Bridge to expose Oracle ADF pages or task flows as portlets. For more information, see Chapter 58, "Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge."
- **No**—Write JSR 286 portlets. For more information, see Chapter 59, " Building Standards-Based Java Portlets Using JSR 286."

The decision of whether to use Oracle ADF for implementing portlets is broadly the same as whether you would choose to use it for implementing a normal web application. However, the additional network hop (for markup, resource, and PPR) and consumer processing that is inherent when using remote portlets may make Oracle ADF a less attractive option than it is in the non-portlet case.

Also, see the Oracle ADF Overview white paper on OTN for specific benefits of using Oracle ADF to develop Java EE applications. Another benefit of using an Oracle ADF task flow is that you can later run the same task flow locally if you encounter any issues running in an inline frame.

Table 57–1 outlines the implications of choosing a particular portlet technology for implementing components for use with WebCenter Portal against various criteria.

Table 57–1 Portlet Building Technologies Comparison Matrix

Local Oracle ADF Pages and Task Flows	WebCenter WSRP Producer for .NET	JSR 286 Portlets	JSF Portlets
Distributed Architecture			
No.	Yes, using WSRP SOAP/HTTP.	Yes, using WSRP SOAP/HTTP.	Yes, using WSRP SOAP/HTTP.
Data Access Support			
Full support for working with databases, web services, and legacy systems.	No restrictions. This leverages the underlying .NET framework, which provides data access to a wide variety of data repositories.	No restrictions, but must be implemented by the portlet developer, possibly using a third party framework.	Full support for working with databases, web services, and legacy systems.
Navigation/Control Flow Support			
Provides comprehensive support for declarative navigation.	Provides comprehensive support for declarative navigation.	No restrictions, but must be implemented by the portlet developer, possibly using a third party framework.	Provides comprehensive support for declarative navigation.
Richness of UI			
Provides a rich, web-based UI with many AJAX-enabled components.	No restrictions. Supports both standard AJAX and ASP.NET AJAX toolkit.	No restrictions, but must be implemented by the portlet developer, possibly using a third party framework.	Provides a rich, web-based UI with many AJAX-enabled components.
Security			

Table 57–1 (Cont.) Portlet Building Technologies Comparison Matrix

Local Oracle ADF Pages and Task Flows	WebCenter WSRP Producer for .NET	JSR 286 Portlets	JSF Portlets
Fully integrated with the application	User identity propagated using WS-Security or asserted by consumer using WSRP. Authorization checks must be implemented by the developer. User profile information can be passed using WSRP user profile items.	User identity propagated using WS-Security or asserted by consumer using WSRP. Authorization checks must be implemented by the developer. User profile information can be passed using WSRP user profile items.	User identity propagated using WS-Security. Authorization is implemented by Oracle ADF.
Inter-Component Communication (Events)			
ADF contextual events enable task flows to communicate.	We provide samples to show how it can be accomplished client-side. Current version does not support WSRP server-side eventing model.	Full support for JSR 286 events, including automatic event delivery between portlets and event mapping between portlet events and ADF contextual events in the consumer.	As per JSR 286 portlets in addition to ADF contextual events allowing task flows to communicate as in the local case.
Consumer to Component Interaction (Parameters)			
Task flow input parameters can take values from various sources.	Full support for WSRP portlet parameters. All parameters can be passed from the consumer application.	Full support for JSR 286 parameters, including passing public parameter values to and from the consumer and automatic sharing of parameter values between portlets.	As per JSR 286 portlets in addition to task flow input parameters taking values from various sources in the consumer application as in the local case.
Performance and Caching			
No additional network hop since the component runs on the local server.	Remote component requires additional network hop. Configuration parameters allow for resources (CSS, JavaScript, and `.axd` resource files) to be proxied via the consumer or direct access to reduce load and take advantage of browser caching.	Remote component requires additional network hop. Resources should be proxied by the consumer. Component performance depends on implementation. Expires and validation based caching are supported and controlled by the portlet developer.	Remote component requires additional network hop. Many resources are proxied via the consumer. Heavyweight nature of framework means simple applications are likely to suffer performance-wise versus handcrafted JSR 286 equivalents. However, for applications offering more complex functionality, the performance benefits of using the framework (for example, partial page rendering) become more apparent. JavaScript, CSS, and other resources are cached in the browser. Caching is controlled by the framework.
Concurrency			
Multiple task flows are invoked sequentially.	Portlets are invoked in parallel.	Portlets are invoked in parallel.	Portlets are invoked in parallel.

Table 57–1 (Cont.) Portlet Building Technologies Comparison Matrix

Local Oracle ADF Pages and Task Flows	WebCenter WSRP Producer for .NET	JSR 286 Portlets	JSF Portlets
Geometry Management			
Components are rendered directly in the containing page.	Portlets are automatically rendered in a proxied inline frame and resized accordingly. The slider bars are hidden from view.	Portlet geometry and inline versus framed rendering is controlled by the portlet developer. Complex UIs are more likely to require rendering in an inline frame.	Portlets must be rendered in an inline frame.
Use of JavaScript			
JavaScript used heavily as a fundamental part of the framework to provide a rich user experience. Developer does not generally need to write JavaScript.	JavaScript used heavily as a fundamental part of the framework to provide a rich user experience. Developer does not generally need to write JavaScript, but samples are provided to show how JavaScript can be used. All scripts can be proxied via the consumer.	Level of JavaScript use and packaging are controlled by the portlet developer. Developers must be aware of special considerations regarding the use of JavaScript if portlets are to be rendered inline.	JavaScript used heavily as a fundamental part of the framework to provide a rich user experience. Developer does not generally need to write JavaScript. All scripts must be proxied via the consumer.
Skills Requirements/Ease of Development			
Requires knowledge of ADF and possibly Java. ADF provides an integrated framework across all layers. JDeveloper provides a fully integrated environment for developing ADF applications. This includes declarative options for all layers of the framework.	Requires knowledge of .NET web parts development or ASP.NET web application development.	Requires knowledge of Java, Java portlets, and any other frameworks used to implement components. Development time comparable with that required to develop a servlet-based component.	Requires knowledge of ADF and possibly Java. Development time is likely to be reduced (versus handcrafted portlets) for all but the most simple of applications due to the rich UI and control framework provided by ADF. ADF provides an integrated framework across all layers. JDeveloper provides a fully integrated environment for developing ADF applications. This includes declarative options for all layers of the framework.
Debugging			
JDeveloper provides a comprehensive solution for debugging application code.	.NET framework provides a comprehensive solution for debugging application code and network trace for SOAP and HTTP traffic. Log4net plug-in for WSRP consumer-producer debug messages.	Made more difficult by remote nature of deployment. Producer provides tool for monitoring consumer-producer communication. JDeveloper provides a comprehensive solution for debugging application code.	Made more difficult by remote nature of deployment. Producer provides tool for monitoring consumer-producer communication. JDeveloper provides a comprehensive solution for debugging application code.
Deployment			

Table 57–1 (Cont.) Portlet Building Technologies Comparison Matrix

Local Oracle ADF Pages and Task Flows	WebCenter WSRP Producer for .NET	JSR 286 Portlets	JSF Portlets
Components are deployed as part of the client application. Entire application can be packaged into a single EAR file and deployed.	Deployment requires copying .NET applications under a particular folder hierarchy and filling out a configuration XML file. Components can easily be run standalone under this folder hierarchy if required.	Made more complex by distributed nature of deployment and multiple applications.	Made more complex by distributed nature of deployment and multiple applications. Components can easily be run standalone if required.
Level of Support			
The ADF framework is an Oracle product and is supported as such.	The WebCenter WSRP Producer for .NET is an Oracle product and is supported as such.	The JSR 286 producer is an Oracle product and is supported as such.	The ADF framework, Oracle JSF Portlet Bridge, and JSR 286 producer are Oracle products and are supported as such.

57.3.7 When To Use Portlets Versus Task Flows?

Portlets are reusable Web components that can draw content from many different sources. Portlets can manage and display anything from static HTML to Java controls to complex web services and process-heavy applications.

A single portlet can also have multiple instances—in other words, it can appear on a variety of different pages within a single portal, or even across multiple portals if the portlet is enabled for Web Services for Remote Portlets (WSRP). You can customize portlets to meet the needs of specific users or groups.

Task flows let you build customizable applications with reusable units of business logic. They represent a modular approach for defining control flow in an application. Each task flow represents a reusable piece of business logic. With isolated memory and transaction scopes, task flows are decoupled from the surrounding application. This decoupling allows task flows to be included in Oracle WebCenter Portal's Composer, for instance.

A task flow encapsulates control flow rules, activities, and managed beans to implement business modules. Task flows are easily reusable within portals built with WebCenter Portal. You can drag and drop task flows onto any customizable WebCenter Portal portal page. In this sense, you can think of a task flow as a "local portlet" that can be reused and dropped into any ADF application.

While task flows are high-level implementations of business processes, they do not host data-access or business logic. Task flows must interact with data controls and declarative bindings for these purposes. These data controls and bindings in turn interact with the ADF Business Components framework.

Following the Oracle-submitted standard JSR 329, you can expose your task flows as standards based portlets. When you revise your application, the portlets are naturally and automatically updated right along with it, rather than requiring a separate development project. To support JSR 329, the Oracle WebCenter Portal Framework provides the Oracle JSF Portlet Bridge. For more information about the Oracle JSF Portlet Bridge, see Chapter 58, "Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge."

In addition to consuming task flows as portlets, you can consume task flows as shared libraries in a JSF application to enable you to embed these JSF fragments directly. You can wrap the transactions around the task flows along with the other functionality in their application. For more information, see the "Getting Started with ADF Task Flows" chapter in the *Fusion Developer's Guide for Oracle Application Development Framework.*

For more information about when to use portlets versus task flows, see the "Oracle WebCenter & ADF Architecture Team" blog.

57.4 Portlet Development

This section includes the following topics:

- Section 57.4.1, "Portlet Producer Applications"
- Section 57.4.2, "Portlet Modes"
- Section 57.4.3, "Interportlet Communication"
- Section 57.4.4, "Portlet Personalization and Customization"
- Section 57.4.5, "Portlet Performance"
- Section 57.4.6, "Multilanguage Portlets"
- Section 57.4.7, "Portlet Deployment"

57.4.1 Portlet Producer Applications

A portlet producer application is an application specifically configured for building and deploying Java portlets.

To readily find and use the appropriate components in your portlet producer application, you must ensure that the appropriate technology scopes are set, tag libraries added, and required Java classes are added to the class path. Once you do this, relevant components are included in the Component Palette and relevant context menus become available in JDeveloper.

JDeveloper provides an application template to ensure that scopes are set properly and the right tag and Java libraries are added to create portlet producer applications. The WebCenter Portlet Producer Application template provides a way of easily creating an application with a single project scoped for the creation of Java portlets.

To create an application using the WebCenter Portlet Producer Application template:

1. Access the Create WebCenter Portlet Producer Application wizard in any of the following ways:

   - From the **File** menu, choose **New**. In the New Gallery dialog, expand **General**, select **Applications** then **WebCenter Portlet Producer Application**, and then click **OK**.

   - From the **Application** menu, choose **New**. In the Create Generic Application wizard, in the **Application Template** list select **WebCenter Portlet Producer Application**.

   - If you have an existing application open, in the Application Navigator, click the application name and choose **New Application**. In the Create Generic Application wizard, in the **Application Template** list select **WebCenter Portlet Producer Application**.

   - If you have an existing application open, then in the Application Navigator, right-click the application name and choose **New**. In the New Gallery dialog, expand **General**, select **Applications** then **WebCenter Portlet Producer Application**, and then click **OK**.

2. In the Name your application page of the creation wizard, in the **Application Name** field, enter a name for the application.
3. In the **Directory** field, accept the default path or enter a path to the directory where the application should be stored.

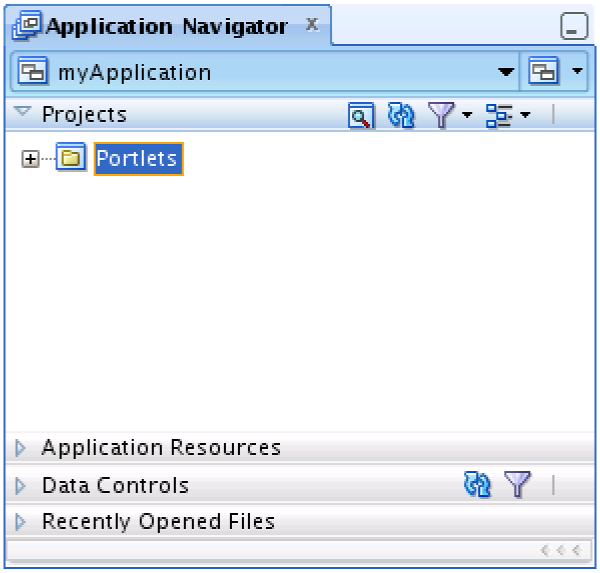
   For example:

   ```
   C:\JDeveloper\mywork\myApplication
   ```

   Optionally, click the **Browse** button to navigate to the desired directory.
4. If required, in the **Application Package Prefix** field, enter a prefix to use for packages to be created within the application.
5. Click **Finish** to create the portlet producer application with default project configurations.

Figure 57–4 shows a newly created portlet producer application, with its single Portlets project, in the Application Navigator.

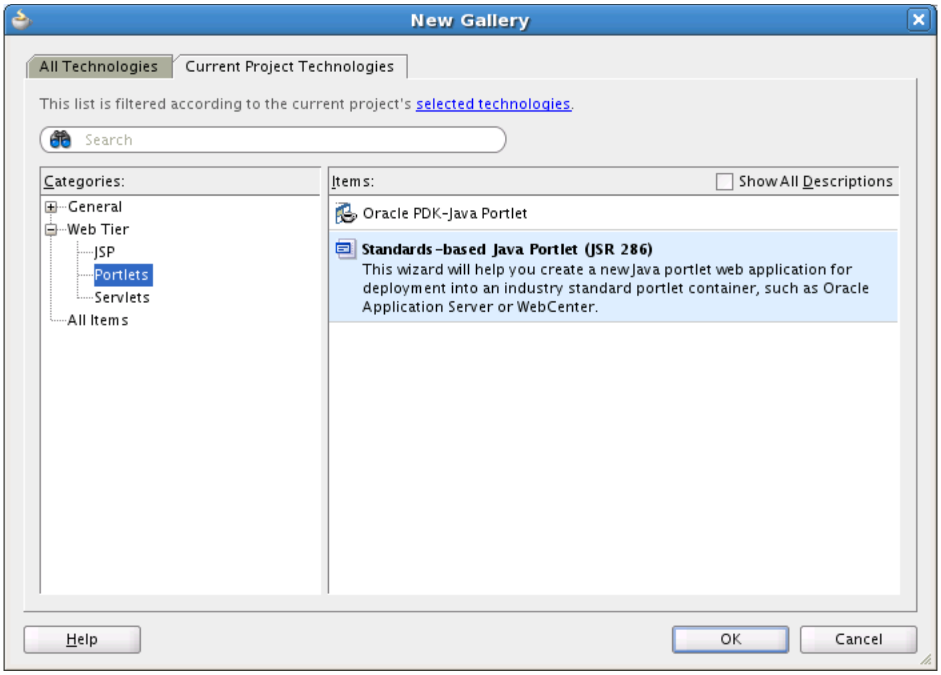
Figure 57–4 New Portlet Producer Application in the Application Navigator



Options exposed in the JDeveloper user interface are limited to those appropriate for developing portlets.

When you right-click the **Portlets** project and choose **New**, options to create Java portlets are provided in the New Gallery (Figure 57–5).

Figure 57–5 Portlet Creation Options in the New Gallery



This list is filtered according to the current project's selected technologies.

This wizard will help you create a new Java portlet web application for deployment into an industry standard portlet container, such as Oracle Application Server or WebCenter.

For information about how to create portlets within this application, see Chapter 59, " Building Standards-Based Java Portlets Using JSR 286."

57.4.2 Portlet Modes

Portlet modes exhibit the runtime functionality seen by users. WebCenter Portal supports the following standard portlet modes:

- View mode
- Edit mode
- Edit Defaults mode
- Help mode
- About mode

WebCenter Portal defines an extended set of modes that it supports. Different modes are available to JSR 286 portlets. For example, the Create JSR 286 Java Portlet Wizard includes Print mode, which you can use to provide a printer-friendly version of the portlet.

If you are coding portlets to JSR 286, then you can also declare your own custom portlet modes in the `portlet.xml` file. You can use these to accommodate any other functionality you may want the portlet to provide.

Defining custom portlet modes is especially useful if the portlet must interoperate with portal implementations from other vendors. You can offer any of these modes to users. In fact, it is recommended that some modes like Edit Defaults are offered.

> **Note:** Third party portal products may have their own set of extended modes (JSR 286 custom modes) that producers can offer. In Portal Framework applications, the chrome UI for portlets shows only the custom modes that are defined in WebCenter Portal. Arbitrary custom modes that a third party or custom portlet producer offers are ignored and therefore are not supported.

This section includes the following topics:

- Section 57.4.2.1, "View Mode"
- Section 57.4.2.2, "Edit Mode"
- Section 57.4.2.3, "Edit Defaults Mode"
- Section 57.4.2.4, "Help Mode"
- Section 57.4.2.5, "About Mode"

57.4.2.1 View Mode

A portlet uses *View mode* to appear on a page with other portlets. This is the mode most people think about when they envision a portlet. A JSR 286 portlet must have a View mode, other modes are optional.

When developing portlets, you must consider all of the factors that may influence the portlet's appearance on the page, such as the portlet's containing object and the other portlets with which your portlet shares the page. For example, suppose you choose to place your portlet inside an HTML table cell. The portlet should display only content that can be rendered within a table cell. Furthermore, the actual size of the table cell may vary depending on end user settings, the browser width, and the amount and style of content in the portlet.

57.4.2.1.1 HTML Guidelines for Rendering Portlets Plain HTML is the most basic way to render portlets and provides a great deal of flexibility to portlet developers. You can use almost any standard HTML paradigm, such as links, forms, images, and tables, if it can display within an HTML table cell. Improperly written HTML may appear inconsistently across different browsers and, in the worst case, could cause parts of your page to not appear at all. Ensure that you adhere to the following rules:

- **Use standard HTML**—The official HTML specification is available from the W3C. For more information, see `http://www.w3c.org/`.

- **Avoid lengthy, complex HTML**—The HTML you use affects the perceived performance of your site. Users judge performance based on how long it takes for them to see the page they requested, and browsers require time to interpret and display HTML. If portlets must render complex HTML or wait for external resources, such as third party applications, then it can greatly slow down the rendering of the page.

- **Avoid unterminated and extraneous tags**—The behavior of pages with improperly terminated tags is unpredictable because it depends on what the browser chooses to do.

- **Consider restrictions imposed by container objects**—If your portlet is contained inside an HTML element, such as a table cell, then you must ensure that your portlet can be rendered within that container. For example, if you place a portlet in a table cell, then you cannot use frames in the portlet because they do not appear when inserted in a table.

- **Keep portlet content concise—**Do not try to take full screen content and expose it through a small portlet. You may end up with portlet content too small or cramped for smaller monitors.
- **Do not create fixed-width HTML tables in portlet—**You have no way to tell how wide a column your portlet has on a user's page. If your portlet requires more room than given, then it might overlap with another portlet in some browsers.
- **Avoid long, unbroken lines of text—**The result is similar to what happens with fixed-width tables. Your portlet might overlap other portlets in some browsers.
- **Check behavior when resizing the page—**Test your portlet's behavior when the browser window is resized to ensure that it works in different browser window sizes.
- **Check behavior when the default browser font changes—**End users may choose whatever font size they want and they can change it at any time. Your portlet should handle these situations gracefully.

57.4.2.1.2 CSS Guidelines for Rendering Portlets The fonts and colors of every portlet on a page should match the style settings chosen by the user. To accomplish this goal, these style selections are embedded automatically using Cascading Style Sheets (CSS). The portlets access these settings for their fonts and colors, either directly or using the Application Programming Interface (API).

While different browsers have implemented varying levels of the full CSS specification, WebCenter Portal uses a very basic subset of this specification to allow for consistent fonts and colors. CSS implementation levels should not affect the consistency of your pages across browsers. Consider the following guidelines for using CSS:

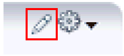
- **Use CSS instead of hard coding—**Hard coding fonts and colors is not advised. If you hard code fonts and colors, then your portlet may look out of place if the end user changes the page style settings. Since you have no way of knowing the end user's font and color preferences, you might also choose to hard code a font color that turns out to be the same as the user's chosen background color, in which case your portlet's content will not be visible to that user.
- **Avoid using CSS for absolute positioning—**Since users may be able to personalize pages, you cannot guarantee that your portlet can appear in a particular spot on the page.
- **Follow accessibility standards—**You should ensure that you code your style sheets according to existing accessibility standards. For more information, see `http://www.w3c.org/TR/WCAG10-CSS-TECHS`.

57.4.2.2 Edit Mode

A portlet uses *Edit mode* to enable users to *personalize* the behavior of the portlet. Personalizations are visible only to the user who performs them, not to other users. Edit mode provides a list of settings that the user can change. These settings may include the title, type of content, formatting, amount of information, defaults for form elements, and anything else that affects the appearance or content of the portlet.

Users typically access a portlet's Edit mode by clicking the **Personalize** icon in the portlet header (Figure 57–6).

Figure 57–6 The Personalize Icon for Accessing a Portlet's Edit Mode



When users click **Personalize**, a new page appears in the same browser window. The portlet typically creates a web page representing a dialog to choose the portlet's settings. After applying the settings, users automatically return to the original page.

57.4.2.2.1 Guidelines for Edit Mode Operations The following guidelines should govern what you expose to users in Edit mode:

- **Enable users to personalize the title of the portlet**—The same portlet may be added to the same page several times. Enabling the end user to personalize the title helps alleviate confusion.
- **If using caching, invalidate the content**—If personalizations cause a change in portlet display or content, then you must ensure that the portlet content is regenerated from the cache. If you do not do this, the user may see incorrect content.
- **Do not use Edit mode as an administrative tool**—Edit mode is meant to give end users a way of changing the behavior of portlets. If you want to change producer settings or perform other administrative tasks, then you should create secured portlets specifically for these tasks.

57.4.2.2.2 Guidelines for Buttons in Edit Mode For consistency and user convenience, Edit mode should implement the following buttons in the order listed:

- **OK**—Saves the end user's personalizations and returns the portlet to View mode.
- **Apply**—Saves the end user's personalizations and reloads the current page.
- **Cancel**—Returns the portlet to View mode without saving changes.

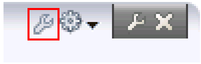
57.4.2.3 Edit Defaults Mode

A portlet uses *Edit Defaults mode* to enable application administrators to customize the default behavior of a particular portlet instance at runtime. Edit Defaults mode provides a list of settings that the application administrator can change. These settings may include the title, type of content, formatting, amount of information, defaults for form elements, or anything that affects the appearance or content of the portlet.

Whereas personalizations affect a portlet instance for an individual user, *customizations* made in Edit Defaults mode affect the portlet instance for all users. Because Edit Defaults mode defines the system-level defaults for what a portlet displays and how it displays it, this mode should not be used as an administrative tool or for managing other portlets.

Application administrators access Edit Defaults mode, when editing a page, by clicking the **Customize** icon in the portlet header (Figure 57–7).

Figure 57–7 The Customize Icon for Accessing a Portlet's Edit Defaults Mode



When users click **Customize**, a new page appears in the same browser window. The portlet typically creates a web page representing a dialog to customize the portlet instance settings. After applying the settings, users are automatically returned to the original page.

57.4.2.3.1 Guidelines for Edit Defaults Mode Operation The following guideline should govern what you expose to application administrators in Edit Defaults mode:

- **Do not use Edit Defaults mode as an administrative tool**—Edit Defaults mode gives application administrators a way of changing the behavior of their portlets. If you want to change producer settings or do other administrative tasks, then you should create secured portlets specifically for those tasks.

57.4.2.3.2 Guidelines for Buttons in Edit Defaults Mode For consistency and user convenience, Edit Defaults mode should implement the following buttons in the order listed:

- **OK**—Saves the application administrator's customizations and returns the portlet to View mode.
- **Apply**—Saves the application administrator's customizations and reloads the current page.
- **Cancel**—Returns the portlet to View mode without saving changes.

57.4.2.3.3 Guidelines for Rendering Customization Values When you show the forms used to change customization settings, you should default the values so that the application administrator does not have to constantly reenter settings. When rendering customization values, use the following sequence to provide consistent behavior:

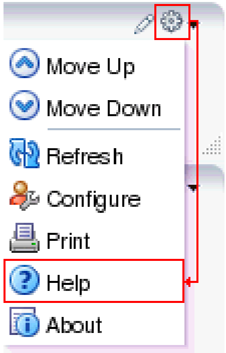
- **Instance preferences**—Query and display system defaults for the portlet instance.
- **Portlet defaults**—If no system default customizations are found, then display general portlet defaults, which may be blank. General portlet defaults are sometimes hard coded into the portlet but should be overwritten by system defaults.

57.4.2.4 Help Mode

A portlet uses *Help mode* to display information about the functionality of the portlet and how to use it. The user should be able to find useful information about the portlet, its contents, and its capabilities with this mode.

Users access a portlet's Help mode by choosing the **Help** option in the **Actions** menu (Figure 57–8).

Figure 57–8 The Help Option in the Portlet Actions Menu



57.4.2.4.1 Guidelines for Help Mode The following guideline should govern what you expose in Help mode:

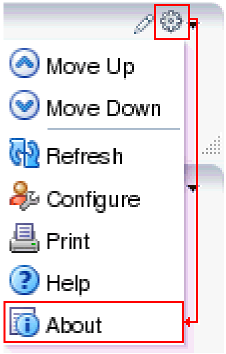
- **Describe how to use the portlet**—Users may not be able to ascertain all the features your portlet offers just from its interface. Describe the features and how to get the most out of them.

57.4.2.5 About Mode

A portlet uses *About mode* to provide users with information such as the version of the portlet that is currently running, its publication and copyright information, and how to contact the portlet developer. Portlets that require registration could also use About mode to link to a web-based registration application or contact information.

Users access a portlet's About mode by choosing the **About** option in the **Actions** menu (Figure 57–9).

Figure 57–9 The About Option in the Portlet Actions Menu



A new page appears in the same browser window. The portlet can either generate the content for this page or take the user to an existing page or application.

57.4.2.5.1 Guidelines for About Mode The following guideline should govern what you expose to users in About mode:

- **Display relevant copyright, version, and developer information**—Users want to know what portlet they are using and where they can get more information. The About page may become important when supporting your portlets.

57.4.3 Interportlet Communication

Interportlet communication enables portlets to share data and react to events. WebCenter Portal supports interportlet communication through parameters and events:

- **Parameters**—Public render parameters enable interportlet communication by sharing parameter values between portlets. For example, if a Map portlet and a Weather portlet are both configured to use a Zipcode parameter, entering a zip code in the Map portlet updates the same parameter value in the Weather portlet.

  For information about public render parameters, see Section 59.3.5, "How to Use Public Render Parameters in JSR 286 Portlets."

- **Events**—Events enable interportlet communication by providing portlets with the ability to respond to actions that occur outside of the portlet itself, for example, an action performed on the page that contains the portlet or on another portlet on the same page. Portlet events can be cascaded so that a portlet may respond to an event by triggering an event of its own, which in turn affects other portlets on the page.

For information about portlet events, see Section 59.3.6, "How to Use Portlet Events in JSR 286 Portlets."

In WebCenter Portal, interportlet communication happens automatically by default, as long as parameters and events share the same name or define an appropriate alias. You do not need to supply any extra code to enable this communication. For more information, see Section 63.5.3, "What You May Need to Know About Interportlet Communication."

For interportlet communication guidelines specific to portlets created using the Oracle JSF Portlet Bridge, see Section 58.7, "Using Events to Link JSF Portlets with Other Portlets."

57.4.4 Portlet Personalization and Customization

Portlet preferences enable end users to personalize or customize portlets at runtime. Personalizations are visible only to the user that performs them; not to other users. Customizations are visible to all users who have not personalized the portlet.

Portlet preferences greatly enhance the reusability of portlets. The same portlet can be instantiated on multiple pages, or multiple times on the same page. Using portlet preferences, each instance of the portlet can behave in a different way, but still use the same code and user interface.

For example, by default when you create a JSR 286 portlet using the JDeveloper wizard, a portlet preference is created to enable users to change the title of the portlet at runtime. You can create additional portlet preferences, either during portlet creation or by editing the `portlet.xml` file after portlet creation, to enable users to perform other modifications on the portlet at runtime.

Portlet preferences are stored in the persistence store, along with information about the registration and portlet instances, such as registration and portlet handles. Portlet producers can use one of three types of persistence store:

- **Consumer**—A consumer persistence store ties the producer metadata to the consumer application. It is recommended that you should use a consumer persistence store in your production environment.
- **Database**—A database persistence store persists data using a relational database.
- **File**—A file-based persistence store persists data using the file system.

A file-based or consumer persistence store may be used for testing, since it removes the dependency on a database. But, for production configurations, it is recommended that you use a consumer persistence store.

By default, JSR 286 and JSF portlets use a consumer persistence store. For information about how to change this default setting, see Section 59.3.14.1, "Setting Up a Persistence Store for a WSRP Producer."

For information about migrating the persistence store, for example, when moving from a test to production environment, see Section 59.3.14.2, "Migrating a WSRP Producer Persistence Store."

57.4.5 Portlet Performance

Caching is a common technique for enhancing the performance of web sites that include a great deal of dynamic content. The overhead involved in retrieving data and generating the output for dynamic content can be significantly reduced by proxying requests through a local agent backed by a large, low-latency data store, known as a cache. The cache agent responds to a request in one of two ways:

- If a valid version of the requested content exists in the cache, then the agent simply returns the existing cache copy, thus skipping the costly process of content retrieval and generation. This condition is known as a *cache hit*.
- If a valid version of the requested content does not exist in the cache, then the agent forwards the request to its destination and awaits the return of the content. The agent returns the content to the requester and stores a local copy in its cache for reuse if a subsequent request for the same content arises. This condition is known as a *cache miss*.

Portlet producers generate dynamic content (that is, portlets) and they reside remotely from the Portal Framework application instance on which they are deployed. As such, caching might improve their performance. The architecture lends itself well to caching. You can cache the portlets rendered by your producer and reuse the cached copies to handle subsequent requests, minimizing the overhead your producer imposes on page assembly. Portlet caching is key to rapid response to user requests.

For JSR 286 portlets there are two different caching methods. The methods differ mainly in how they determine whether content is still valid:

- **Expiry-based caching**—When a producer receives a render request, it stamps its response with an expiry time. The rendered response remains in the cache and fills all subsequent requests for the same content until its expiry time passes. This caching scheme is perhaps the simplest and most performant because the test for cache validity requires very little overhead and does not involve any network round trips. Expiry-based caching suits applications where the content has a well-defined life span. For content with a less certain life span however, expiry-based caching is less effective.

  Consider using expiry-based caching when the portlet content is static or when it is not critical that the most up-to-date content be displayed.

  For information about how to implement expiry-based caching for your portlets, see Section 59.3.10.1, "Implementing Expiry-Based Caching in JSR 286 Portlets."
- **Validation-based caching**—When a producer receives a render request, it stamps a response with a version identifier (or ETag). The response goes into the cache, but before the consumer can reuse the cached content, it must determine whether the cached content is still valid. It sends the producer a render request that includes the version identifier of the cached content. The producer determines whether the version identifier remains valid. If the version identifier is still valid, then the producer immediately sends a lightweight response to the consumer without any content that indicates that the cached version can be used. Otherwise, the producer generates new content with a new version identifier, which replaces the previously cached version. In this form of caching, the consumer must always confirm with the producer whether the content is up to date. The validity of the cached copy is determined by some logic in the producer. The advantage of this approach is that the producer controls the use of cached content, rather than relying on a fixed period.

  Consider using validation-based caching for portlets with dynamic content that changes frequently or unpredictably.

  For information about how to implement validation-based caching for your portlets, see Section 59.3.10.2, "Implementing Validation-Based Caching in JSR 286 Portlets."

Caching rules can be specified at a portlet's container level, encoded in the portlet's own logic, or established through the portlet wizard. Provided it is specified, container-level caching takes over when caching is not part of the portlet code.

At the application level, WebCenter Portal Framework supports use of a Java cache for the establishment of application-level caching rules.

When you enable caching at the application level, you instruct the Java cache to maintain a copy of the portlet content. When data that was previously cached is requested, no time is lost in contacting the data source and regenerating its content. Instead, the previously cached portlet content is returned.

JSF portlets and custom Java portlets support expiry- and validation-based caching.

57.4.6 Multilanguage Portlets

There are three steps involved in making your portlets available in multiple languages:

- Declare the locales supported by the portlet using the `<supported-locale>` element in the `portlet.xml` file. For example:

  ```
  <portlet id="1328624289503">
     ...
     <supported-locale>en</supported-locale>
     <supported-locale>fr</supported-locale>
     <supported-locale>es</supported-locale>
     ...
  </portlet>
  ```

- Make the portlet metadata that is displayed in the portlet (for example, the portlet title, description, keywords, and so on) translatable.

  You can include the translations directly in the `portlet.xml` file, for example:

  ```
  <portlet id="1328624289503">
     <portlet-name>LotteryPortlet</portlet-name>
     <display-name xml:lang="en">Lottery Numbers</display-name>
     <display-name xml:lang="fr">Numéros de Loterie</display-name>
     <display-name xml:lang="es">Números de la Lotería</display-name>
     ...
     <supported-locale>en</supported-locale>
     <supported-locale>fr</supported-locale>
     <supported-locale>es</supported-locale>
     ...
  </portlet>
  ```

  Alternatively, you can provide translations in a separate resource bundle. You must declare the resource bundle in the `portlet.xml` file, for example:

  ```
  <portlet id="1328624289503">
     <portlet-name>LotteryPortlet</portlet-name>
     <display-name>Lottery Numbers</display-name>
     ...
     <supported-locale>en</supported-locale>
     <supported-locale>fr</supported-locale>
     <supported-locale>es</supported-locale>
     <resource-bundle>portlet.resource.LotteryPortletBundle</resource-bundle>
     ...
  ```

  Then, provide the translations in the resource bundle, for example:

  ```
  # English Resource Bundle
  ```

```
#
# filename: LotteryPortletBundle_en.properties
javax.portlet.display-title=Lottery Numbers

# French Resource Bundle
#
# filename: LotteryPortletBundle_fr.properties
javax.portlet.display-title=Numéros de Loterie

# Spanish Resource Bundle
#
# filename: LotteryPortletBundle_es.properties
javax.portlet-title=Números de la Lotería
```

- Make the portlet content translatable the same way as you would for any other web application.

57.4.7 Portlet Deployment

Before a portlet can be registered with and consumed by an application, you must first deploy it. JSR 286 portlets are deployed to a *WSRP producer*, which is remote and communicates with the consumer application through Web Services for Remote Portlets (WSRP). JSF portlets are deployed as JSR 286 portlets, that is, to a WSRP producer, either from JDeveloper or manually.

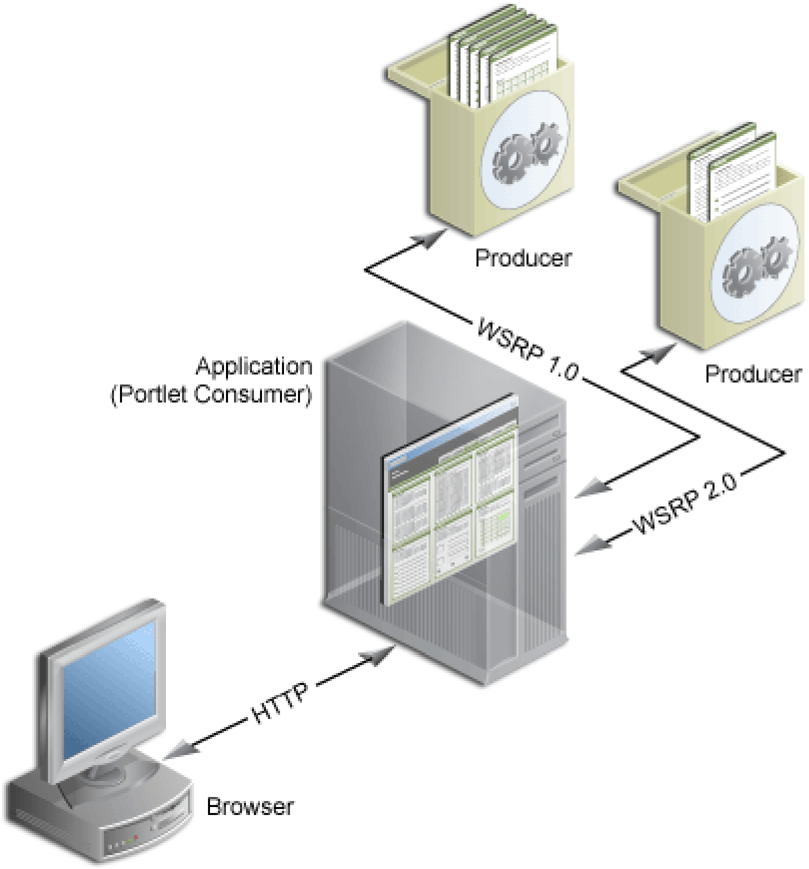
WebCenter Portal supports WSRP versions 1.0 and 2.0. This standard provides support for interportlet communication and export or import of portlet customizations.

WSRP is a communication protocol between portlet consumer applications and portlet containers. WSRP is a standard that enables the plug-and-play of visual, user-facing web services with intermediary web applications.

Being a standard, WSRP enables interoperability between a standards-enabled container based on a particular language (such as JSR 286, .NET, or Perl) and any WSRP portal. So, a portlet (regardless of language) deployed to a WSRP-enabled container can be rendered on any application that supports this standard.

Figure 57–10 illustrates the basic architecture of WSRP producers.

Figure 57–10 WSRP Producer Architecture



When end users display a page in their web browsers, the flow of the request works as follows:

1. The end user requests a page from the web browser by entering a URL in the browser's Location field.
2. The browser transmits the request to the consumer application over HTTP.
3. The application contacts the portlet producers that provide the portlets that display on the requested page.
4. The producers make the necessary calls to their portlets so that the portlets generate the portlet content in the form of HTML or XML code.
5. The producers return the portlet content back to the consumer application using the WSRP 1.0 or 2.0 protocol:
6. The consumer application transmits the portlet content to the browser over HTTP.

To make standards-based portlets available to a consumer application in WebCenter Portal, you must package them in a Portlet Producer application and deploy them to a WSRP container. For more information, see Chapter 61, "Deploying Portlet Producers."

58

Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge

This chapter describes how to use the Oracle JSF Portlet Bridge to expose a JSF application as a portlet.

This chapter includes the following topics:

- Section 58.1, "Introduction to the Oracle JSF Portlet Bridge"
- Section 58.2, "Creating a Portlet from a JSF Application"
- Section 58.3, "Updating the Portlet Entry for a Portletized Page or Task Flow"
- Section 58.4, "Testing a Portletized Page or Task Flow in JDeveloper"
- Section 58.5, "Testing a JSF Portlet Using the Integrated WebLogic Server"
- Section 58.6, "Deploying JSF Portlets to a WebLogic Managed Server"
- Section 58.7, "Using Events to Link JSF Portlets with Other Portlets"
- Section 58.8, "What You May Need to Know When Creating a JSF Portlet"
- Section 58.9, "Copying a Runtime-Created Skin to a JSF Portlet Producer Application"

Note: The Oracle JSF Portlet Bridge extends the Apache Reference implementation of JSR 329. JSR 329 is the standards effort to define the functionality for the Portlet 2.0 Bridge for JavaServer Faces. Oracle is the specification lead for this standard. More information is available at:

`http://www.jcp.org/en/jsr/detail?id=329`

58.1 Introduction to the Oracle JSF Portlet Bridge

The Oracle JSF Portlet Bridge enables application developers to quickly and easily expose their existing JSF applications and Oracle ADF applications and task flows as JSR 286 portlets.

Note: Unless otherwise noted, the term JSF applications encompasses Oracle ADF applications.

The Oracle JSF Portlet Bridge:

- Simplifies portlet development by enabling you to provide portlet functionality using JSF rather than relying on the JSR 286 portlet APIs.
- Simplifies exposing your JSF application to JSR 286 portlet consumers, such as Oracle WebCenter Portal.
- Eliminates the requirement to store, maintain, and deploy your portlets separately from your application by enabling the application to run simultaneously as a regular web application and as a portlet from the same installation.
- Enables you to create portlets at a more granular level by exposing task flows as portlets. Because portletized task flows are JSR 286 portlets, this also enables you to use your task flows in a distributed environment.

Note: The Oracle JSF Portlet Bridge uses WSRP extensions that may prevent JSF portlets working as intended with third party WSRP consumers.

58.2 Creating a Portlet from a JSF Application

The Oracle JSF Portlet Bridge enables you to expose a JSF application or task flow as a portlet. You do this declaratively, using the Create Portlet Entry dialog; no coding is required. Using the Create Portlet Entry dialog, you can configure Oracle JSF Portlet Bridge on a JSF application to expose the application as a JSR 286 portlet. As part of this configuration, you indicate the initial JSF view (or task flow) to invoke when the portlet is rendered. From that point on the Oracle JSF Portlet Bridge works with the JSF application to navigate through the additional views that are reachable from this initial view. So in the typical situation when you are exposing the entire JSF application as the portlet, you configure the Oracle JSF Portlet Bridge to render the application's initial view in the portlet and the rest of the navigation works naturally within that same portlet.

This section includes the following topics:

- Section 58.2.1, "How to Create a JSF Portlet Based on a Page"
- Section 58.2.2, "What Happens When You Create a JSF Portlet Based on a Page"
- Section 58.2.3, "How to Create a JSF Portlet Based on a Task Flow"
- Section 58.2.4, "What Happens When You Create a Portlet Based on a Task Flow"

58.2.1 How to Create a JSF Portlet Based on a Page

The simplest way to create a portlet from a JSF application is to generate a portlet based upon a page.

To create a JSF portlet from an existing application page:

1. In JDeveloper, open the application that contains the JSPX page that you want to portletize.
2. In the Application Navigator, right-click the JSPX page and choose **Create Portlet Entry.**

Note: You cannot generated a portlet based on a page that contains a portlet.

3. In the Create Portlet Entry dialog, in the **Portlet Name** field, enter a name for the portlet.
4. In the **Display Name** field, enter a descriptive name for your portlet.
5. In the **Portlet Title** field, enter a descriptive title for your portlet.

   The portlet title is displayed in the Resource Palette or Application Resources panel, so make the title something to help users decide whether the portlet is useful to them. The portlet title is also displayed on the portlet header when the portlet appears on a page.
6. In the **Short Title** field, enter a shorter title for your portlet. This short title is displayed on the portlet header when the portlet appears on a page on a mobile device.
7. In the **Description** field, enter a description for your portlet.
8. Select **Create portlet events for contextual events** to create portlet events in the `portlet.xml` file for any contextual events exposed by the page. This option is selected by default.

   Portlet events enable a portlet to communicate with the page on which it resides and with other portlets on that page.
9. Click **OK.**

58.2.2 What Happens When You Create a JSF Portlet Based on a Page

When you create a JSF portlet based on a page, a `portlet.xml` file is created (or updated if it already exists) to contain the portlet entry (Example 58–1) for the page. The file is opened ready for viewing or editing. By default, the file is opened in Design view. To view or edit the source code, click the **Source** tab.

Example 58–1 Generated Portlet Entry for a Page

```
<portlet id="adf_jsf__testPage_jspx">
  <description>PortletBridgeApplication_testPage_jspx</description>
  <portlet-name>PortletBridgeApplication_testPage_jspx</portlet-name>
  <display-name>PortletBridgeApplication_testPage_jspx</display-name>
  <portlet-class>
    oracle.portlet.bridge.adf.application.ADFBridgePortlet
  </portlet-class>
  <init-param>
    <name>javax.portlet.faces.defaultViewId.view</name>
    <value>/myPage.jspx</value>
  </init-param>
  <supports>
    <mime-type>text/html</mime-type>
    <portlet-mode>VIEW</portlet-mode>
  </supports>
  <supported-locale>en</supported-locale>
  <portlet-info>
    <title>PortletBridgeApplication_testPage_jspx</title>
    <short-title>PortletBridgeApplication_testPage_jspx</short-title>
  </portlet-info>
  <supported-processing-event id="DepartmentSelectedEvent">
    <qname xmlns:x="http://xmlns.oracle.com/adfm/contextualEvent">
      x:DepartmentSelectedEvent
    </qname>
  <supported-publishing-event id="DepartmentSelectedEvent">
    <qname xmlns:x="http://xmlns.oracle.com/adfm/contextualEvent">
```

```
      x:DepartmentSelectedEvent
    </qname>
  </supported-publishing-event>
  <supported-public-render-parameter>
    _adf_event_DepartmentSelectedEvent
  </supported-public-render-parameter>
  <container-runtime-option>
    <name>com.oracle.portlet.requireIFrame</name>
    <value>true</value>
  </container-runtime-option>
  <container-runtime-option>
    <name>com.oracle.portlet.minimumWsrpVersion</name>
    <value>2</value>
  </container-runtime-option>
</portlet>
```

The page you selected is used as the entry point for the portlet View mode. This is indicated in the `portlet.xml` file by the `javax.portlet.faces.defaultViewId.view` initialization parameter. You can manually edit the `portlet.xml` file to define the pages for other default and extended portlet modes supported by WebCenter Portal:

- Edit mode: `javax.portlet.faces.defaultViewId.edit`
- Help mode: `javax.portlet.faces.defaultViewId.help`
- About mode: `javax.portlet.faces.defaultViewId.about`
- Config mode: `javax.portlet.faces.defaultViewId.config`
- Edit Defaults mode: `javax.portlet.faces.defaultViewId.edit_defaults`
- Preview mode: `javax.portlet.faces.defaultViewId.preview`
- Print mode: `javax.portlet.faces.defaultViewId.print`

> **Note:** The value for the `defaultViewId` is relative to the application context root and must always start with a `/`. In Example 58–1, the value for `defaultViewId.view` is `/myPage.jspx`.
>
> If you add `defaultViewId` for other portlet modes, then ensure that you also add the mode to the `<supports>` tag. For example, `<portlet-mode>HELP</portlet-mode>`.

For information about portlet modes, see Section 57.4.2, "Portlet Modes."

58.2.3 How to Create a JSF Portlet Based on a Task Flow

An advantage of using Oracle ADF is the existence of task flows, which provide a modular approach for defining control flow in an application. Instead of representing an application as a single large JSF page flow, you can break it up into a collection of reusable task flows. In each task flow, you identify application activities, the work units that must be performed in order for the application to complete. An activity represents a piece of work that can be performed when running the task flow.

Task flows can be unbounded or bounded:

- An **unbounded task flow** is a set of activities, control flow rules, and managed beans interacting to allow a user to complete a task. An unbounded task flow consists of all activities and control flows in an application that are not included within any bounded task flow.

- A **bounded task flow** is a specialized form of task flow, having a single entry point and one or more exit points. It contains its own set of private control flow rules, activities, and managed beans. An Oracle ADF bounded task flow allows reuse, parameters, transaction management, and reentry. It can have zero to many exit points. Bounded task flows can use pages or page fragments, however only those that use page fragments can be portletized.

A typical application is a combination of an unbounded and one or more bounded task flows. The application can then call bounded task flows from activities within the unbounded task flow. For more detailed information about bounded and unbounded task flows, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

This section includes the following topics:

- Section 58.2.3.1, "Creating a Portlet From a Task Flow Using the Create Portlet Entry Dialog"
- Section 58.2.3.2, "Creating a Portlet From a Task Flow Using the Manage Portlet Entries of Task Flows Dialog"

58.2.3.1 Creating a Portlet From a Task Flow Using the Create Portlet Entry Dialog

Use the Create Portlet Entry dialog to create a portlet from a single task flow.

To make a portlet from a task flow using the Create Portlet Entry dialog:

1. In JDeveloper, open the JSF application that contains the task flow from which you want to make a portlet.
2. In the Application Navigator, right-click the task flow that you want to portletize, and choose **Create Portlet Entry.**
3. In the Create Portlet Entry dialog, in the **Portlet Name** field, enter a name for the portlet.
4. If the task flow is unbounded, the **Entry Point View** drop-down list displays all the view activities of the task flow. From this drop-down list, choose the view activity to use as the entry point for the portlet. By default, the first view activity in the task flow is chosen.

   If the task flow is bounded, there is only a single possible entry point, so you do not see the **Entry Point View** drop-down list.
5. In the **Display Name** field, enter a descriptive name for your portlet.
6. In the **Portlet Title** field, enter a descriptive title for your portlet.

   The portlet title is displayed in the Resource Palette or Application Resources panel, so make the title something to help users decide whether the portlet is useful to them. The portlet title is also displayed on the portlet header when the portlet appears on a page.
7. In the **Short Title** field, enter a shorter title for your portlet. This short title is displayed on the portlet header when the portlet appears on a page on a mobile device.
8. In the **Description** field, enter a description for your portlet.
9. Select **Create portlet events for contextual events** to create portlet events in the `portlet.xml` file for any contextual events exposed by the task flow. This option is selected by default.

Portlet events enable a portlet to communicate with the page on which it resides and with other portlets on that page.

10. Click **OK.**

58.2.3.2 Creating a Portlet From a Task Flow Using the Manage Portlet Entries of Task Flows Dialog

If your project includes a lot of task flows, you may find it easier to select the task flows to create as portlets from a list. You can do this using the Manage Portlet Entries of Task Flows dialog. This dialog also lets you create portlets from multiple task flows at the same time, rather than having to create them individually.

To create a portlet from a task flow using the Manage Portlet Entries of Task Flows dialog:

1. From the main menu, choose **File** and then **New.**
2. In the New Gallery, expand **Web Tier,** select **Portlets** and then **Manage Portlet Entries of Task Flows,** and click **OK.**
3. In the Manage Portlet Entries of Task Flows dialog, use the shuttle buttons to select which task flows you want to create as portlets.
4. Select **Create portlet events for contextual events** to create portlet events in the `portlet.xml` file for any contextual events exposed by the task flows. This option is selected by default.

   Portlet events enable a portlet to communicate with the page on which it resides and with other portlets on that page.
5. Click **OK** to create portlets for the selected task flows.

58.2.4 What Happens When You Create a Portlet Based on a Task Flow

When your portlet, or portlets, have been created, you should receive a message that says:

```
New portlet has been successfully created
```

In addition, the `portlet.xml` file is created. The `portlet.xml` file contains the portlet entry (Example 58–2) and is opened ready for viewing or editing.

Example 58–2 Generated Portlet Entry for a Task Flow

```
<portlet id="adf_taskflow_WEB_INF_department_xml">
    <description>PortletBridgeApplication department</description>
    <portlet-name>PortletBridgeApplication_department</portlet-name>
    <display-name>PortletBridgeApplication department</display-name>
    <portlet-class>oracle.portlet.bridge.adf.application.ADFBridgePortlet</portlet-class>
    <init-param>
      <name>javax.portlet.faces.defaultViewId.view</name>
      <value>
        /adf.task-flow?adf.tfDoc=/WEB-INF/adfp-portlet-bridge-container.xml
        &amp;adf.tfId=adfp-portlet-bridge-container&amp;_fragmentTaskFlowDoc=/WEB-INF/
        department.xml&amp;_fragmentTaskFlowId=department
      </value>
    </init-param>
    <supports>
      <mime-type>text/html</mime-type>
      <portlet-mode>VIEW</portlet-mode>
    </supports>
    <supported-locale>en</supported-locale>
    <portlet-info>
      <title>PortletBridgeApplication department</title>
      <short-title>PortletBridgeApplication department</short-title>
    </portlet-info>
    <supported-publishing-event id="DepartmentSelectedEvent">
      <qname xmlns:x="http://xmlns.oracle.com/adfm/contextualEvent">
        x:DepartmentSelectedEvent
      </qname>
    </supported-publishing-event>
    <supported-public-render-parameter>
      _adf_event_DepartmentSelectedEvent
    </supported-public-render-parameter>
    <container-runtime-option>
      <name>com.oracle.portlet.requireIFrame</name>
      <value>true</value>
    </container-runtime-option>
    <container-runtime-option>
      <name>com.oracle.portlet.minimumWsrpVersion</name>
      <value>2</value>
    </container-runtime-option>
</portlet>
```

Note: The `portlet.xml` file can include multiple portlets and can have a combination of pages and task flows exposed as portlets. The file can also include standard JSR 286 (non bridge) portlets.

58.3 Updating the Portlet Entry for a Portletized Page or Task Flow

If you edit a page or task flow that has been previously portletized, if those edits include updates to the task flow or page's parameters or events, then you must update the portlet entry for the page or task flow to keep the portlet in sync with the underlying page or task flow.

Note: If you delete a page that has been portletized, you must manually remove the portlet entry for that page from the `portlet.xml` file.

To update the portlet entry for a portletized page or task flow:

1. In the Application Navigator, open the JSF application that contains the portletized page or task flow that you want to update.
2. Right-click the page or task flow, and choose **Update Portlet Entry.**
3. If the portlet entry is for an unbounded task flow, then a dialog prompts you to select the view activity that was used to create the portlet.
4. The portlet entry is updated as follows:
   - The **Create portlet events for contextual events** option is set to true.
   - No updates are made to the portlet name, display name, title, short title, or description.
   - Any `event-definition` elements (at the portlet application level) are created as necessary.
   - None of the existing `event-definition` elements are deleted or updated.

- Any `public-render-parameter` elements (at the portlet application level) are created as necessary.
- None of the existing `public-render-parameter` elements are deleted or updated.
- The list of `supported-processing-event`, `supported-publishing-event`, and `supported-public-render-parameter` elements in the portlet entry are re-created to reflect the current events and input parameters of the page or task flow. This means that some existing portlet events and public parameters may be deleted and new ones added.

58.4 Testing a Portletized Page or Task Flow in JDeveloper

After you have portletized a page or task flow, you must test it to ensure that it is working correctly. Testing a portletized page or task flow requires the following steps:

1. Portletize the page or task flow to create a portlet entry in the `portlet.xml` file.
2. Deploy the portletized application to a portlet server.
3. Create an application to consume the portletized page or task flow.
4. Register the portletized application with the consumer application.
5. Create a page in the consumer application and add the portletized page or task flow to it.
6. Deploy the consumer application and display the page that contains the portletized page or task flow.

WebCenter Portal provides a menu option, **Run as Portlet**, within JDeveloper to simplify this process by automatically performing these steps.

> **Tip:** You can also use the **Run as Portlet** menu option to test how a page or task flow behaves as a portlet before explicitly creating the portlet entry.

Before You Begin

For the **Run as Portlet** option to work correctly, the following conditions must be met:

- You must deploy the Portlet Bridge Tester Consumer application to the Integrated WebLogic Server.

  If the application is not yet deployed, from the **Run** menu, choose **WebCenter Portal Deployments**, then select **Portlet Bridge Tester Consumer** and click **OK**.
- Integrated WLS must be using the default port, `7101`.
- When you start Integrated WLS, it must listen to the local IP address, `127.0.0.1` (you specify this in the Configure WebLogic Domain dialog by explicitly entering the IP address in the **Listen Address** field, or leaving the field blank).
- There must be no other application deployed to Integrated WLS using the context root `portletBridgeTester-Portlets-context-root`.
- The application containing the page or task flow must be able to be successfully deployed to Integrated WLS.

If any of these conditions cannot be met, you must manually test the portletized page or task flow using the steps provided in Section 58.5, "Testing a JSF Portlet Using the Integrated WebLogic Server."

To test a portletized page or task flow:

1. In the Application Navigator, open the JSF application that contains the portletized page or task flow that you want to test.
2. Right-click the page or task flow, and choose **Run as Portlet.**
3. If you selected to run an unbounded task flow as a portlet, then a dialog prompts you to select the view activity to use as the entry point for the portlet.
4. The following happens:
   a. If a portlet entry already exists for the page or task flow, then the portlet entry is updated to ensure that it reflects the current functionality of the page or task flow. For more information, see Section 58.3, "Updating the Portlet Entry for a Portletized Page or Task Flow."

      If a portlet entry does not already exist for the page or task flow, then a portlet entry is created using the default values.
   b. If the selected task flow is an unbounded task flow, a dialog prompts you to select the view activity to use as the entry point for the portlet.
   c. If the selected task flow is a bounded task flow with input parameters, a dialog enables you to enter default values for those parameters.
   d. The application is deployed to the Integrated WebLogic Server, using the context root `portletBridgeTester-Portlets-context-root`.

      > **Note:** If this is the first time that the Integrated WLS has been started for this application, a dialog prompts you to configure the default domain. Set the **Listen Address** to `127.0.0.1` (or leave the field blank) and the **Listen Port** to `7101`.

   e. When deployment is complete, the portletized page or task flow is displayed in a browser window.
5. Test the functionality of the portletized page or task flow within the test consumer application.

58.5 Testing a JSF Portlet Using the Integrated WebLogic Server

When you have created your JSF portlet you can test it using the Integrated WebLogic Server that comes packaged with JDeveloper.

Before You Begin

Before you test your portletized page or task flow, it is a good idea to first test that the page or task flow works correctly in the running ADF application. You can do this, using the Integrated WebLogic Server, by running the page or, for task flows, adding the task flow to a page and running that page.

For more information, see the "Running an ADF Application in Integrated WebLogic Server" section in the *Fusion Developer's Guide for Oracle Application Development Framework*.

To test a JSF portlet:

1. From the main menu, choose **Run** and then **Start Server Instance.**

It may take a few moments for the Integrated WLS to start. When the instance has started, you should see a message similar to the following in your Log panel:

```
IntegratedWebLogicServer started.
```

For more information, see Section 2.2.4, "Managing the Integrated WebLogic Server."

2. You are now ready to run your Portlet Producer application on the Integrated WLS. Because your web application and Portlet Producer application are one and the same (the Portlet Producer application is your existing web application with additional portlet artifacts), you can run your web application as you normally would (see the "Running an ADF Application in Integrated WebLogic Server" section in the *Fusion Developer's Guide for Oracle Application Development Framework*) or you can run your portlet following the instructions in Section 59.4.1, "How to Run a WSRP Portlet Producer on Integrated WebLogic Server."

3. When the application is deployed, you can view the WSRP Producer Test Page by going to:

   ```
   http://host:port/context-root/info
   ```

   where:

   - *host* is the server to which the application has been deployed.
   - *port* is the HTTP Listener port. Typically it is 7101. When the server is started, the port is displayed in the console.
   - *context-root* is the web application's context root.

4. Once you have successfully deployed the application containing the portlet, you can register it as a portlet producer with any other application. For more information see Section 63.2.1.1, "How to Register a WSRP Portlet Producer."

   Note: Because the Oracle JSF Portlet Bridge uses WSRP 2.0 features, you should register the producer using the **WSRP v2 WSDL** URL listed in the WSRP Producer Test Page.

   You can continue to access the application as a regular web application or consume it as a portlet producer.

5. Now that your portlet producer is deployed and registered, you can consume your JSF portlet as you would any other portlet. For more information, see Section 63.5, "Adding Portlets to a Page."

58.6 Deploying JSF Portlets to a WebLogic Managed Server

When you are satisfied that the application works correctly both as a web application and a portlet application, you can deploy it to your production Oracle WebLogic Managed Server.

Because your web application and portlet application are one and the same (the portlet application is your existing web application with additional portlet artifacts), deploying the web application also deploys the portlet producer application.

For information about how to deploy an application to a WebLogic Managed Server, see the "Deploying Fusion Web Applications" chapter in the *Fusion Developer's Guide for Oracle Application Development Framework*.

> **Note:** Ensure that you deploy your application to a Java EE container with the Oracle Portlet Container installed. The Integrated WLS has the container installed, which is why it is recommended for testing.

After successful deployment, you can access both the application and the portlet producer test page. For example, the application URL would be similar to:

`http://host:port/appcontextroot/faces/pagename.jspx`

And the portlet producer test URL would be similar to:

`http://host:port/appcontextroot/info`

58.7 Using Events to Link JSF Portlets with Other Portlets

If you portletize an Oracle ADF task flow that triggers a contextual event, the Oracle JSF Portlet Bridge creates a JSR 286 portlet event to wrap the contextual event. This means that when the portletized task flow is consumed on a page, it can be linked to other JSF portlets or to JSR 286 portlets.

The examples in this section use the following portlets:

- **Departments portlet**, a portletized ADF task flow that displays a list of departments. The list of departments can be restricted by location ID. This portlet raises a contextual event, `departmentSelected`, when a department row is selected in the portlet. The payload of the departmentSelected event is an object of type hr.Department (a Java object representing one row of the Departments table).
- **Employees portlet**, a portletized ADF task flow that displays a list of employees. The list of employes can be restricted by department ID.
- **Department Address portlet**, a JSR 286 portlet that displays the address of a specified department.
- **Department Locations portlet**, a JSR 286 portlet that displays a list of locations. This portlet raises a portlet event, named `locationId` with the namespace `http://xmlns.oracle.com/adfm/contextualevent`, when one of the listed locations is selected.

This section includes the following topics:

- Section 58.7.1, "How to Link a JSF Portlet to Another JSF Portlet"
- Section 58.7.2, "How to Link a JSF Portlet to a JSR 286 Portlet"
- Section 58.7.3, "How to Link a JSR 286 Portlet to a JSF Portlet"
- Section 58.7.4, "What You May Need to Know About Portlet Events in the Oracle JSF Portlet Bridge"

58.7.1 How to Link a JSF Portlet to Another JSF Portlet

The Departments task flow raises a contextual event, `departmentSelected`, when a department row is selected within the task flow. The event is ultimately raised by an `eventBinding` which is triggered from a row selection listener (Example 58–3).

The payload of the event (an object of type `hr.Department`, a Java object representing one row of the departments table) is generated by using the `customPayload` attribute which points to the current row from the `departments` table iterator.

For more information about standard ADF contextual event techniques, like the ones used in this example, see the "Creating Contextual Events" section in the *Fusion Developer's Guide for Oracle Application Development Framework*.

Example 58–3   Contextual Event for the Departments Task Flow

```
<eventBinding Listener="org.apache.myfaces.trinidad.event.SelectionListener"
              id="DepartmentSelectedEvent">
  <events xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
    <event name="departmentSelected"
           customPayLoad="#{bindings.departments.currentRow.dataProvider}"/>
  </events>
</eventBinding>
```

When the Departments task flow is portletized, using the steps described in Section 58.2.3, "How to Create a JSF Portlet Based on a Task Flow," a `portlet.xml` file is created containing a definition for a portlet event that is used to transfer the corresponding contextual event during portlet communication with the portlet over WSRP (Example 58–4).

Example 58–4   Portlet Entry for the Portletized Departments Task Flow

```
<portlet id="adf_taskflow_WEB_INF_departments_xml">
  ...
  <supported-publishing-event id="departmentSelected">
    <qname xmlns:x="http://xmlns.oracle.com/adfm/contextualEvent">
      x:departmentSelected
    </qname>
  </supported-publishing-event>
  ...
</portlet>
```

There is also a corresponding event definition in `portlet.xml` for the Departments portlet's `departmentSelected` event (Example 58–5).

Example 58–5   Event Definition for the departmentSelected Event

```
<event-definition id="departmentSelected">
  <qname xmlns:x="http://xmlns.oracle.com/adfm/contextualEvent">
    x:departmentSelected
  </qname>
  <value-type>
    oracle.portlet.bridge.adf.lifecycle.ADFmPayloadWrapper
  </value-type>
</event-definition>
```

Note: The namespace for contextual events that are converted into portlet events is always:

```
http://xmlns.oracle.com/adfm/contextualEvent
```

The payload type is always:

```
oracle.portlet.bridge.adf.lifecycle.ADFmPayloadWrapper
```

The `ADFmPayloadWrapper` is used to ensure that any serializable contextual event payload is wrapped in a JAXB marshallable wrapper. It also ensures that a fixed type can be declared for the portlet event, even though it is not possible to know the payload type until the event is raised. The payload is unwrapped when extracting the contextual event from the portlet event.

The Employees task flow uses standard ADF techniques to handle a `departmentSelected` event. This is in the form of a `methodAction` binding that invokes a method on a data control, delivering the event payload from the `departmentSelected` event as a parameter to that method. Example 58–6 shows the definition of the `methodAction` binding.

Example 58–6 Definition of methodAction for the Employees Task Flow

```
<methodAction id="updateTableForDepartmentId" RequiresUpdateModel="true"
              Action="invokeMethod" MethodName="updateTableForDepartmentId"
              IsViewObjectMethod="false" DataControl="EmployeesDataControl"
              InstanceName="EmployeesDataControl.dataProvider">
  <NamedData NDName="departmentIdPayLoad" NDType="hr.Department"/>
</methodAction>
```

The `updateTableForDepartmentId` method takes the `hr.Department` object, passed as the payload of the `departmentSelected` event, and filters the data queried from the `EmployeesDataControl` so that it shows only employees who are in the selected department. It also takes steps to ensure that the iterator is re-executed and that the table view component is marked as needing to be re-rendered in this request.

The Employees task flow includes an event map to specifically map the incoming event onto the appropriate `methodAction` when the task flow is portletized (Example 58–7).

Example 58–7 Event Map for Portletized Employees Task Flow

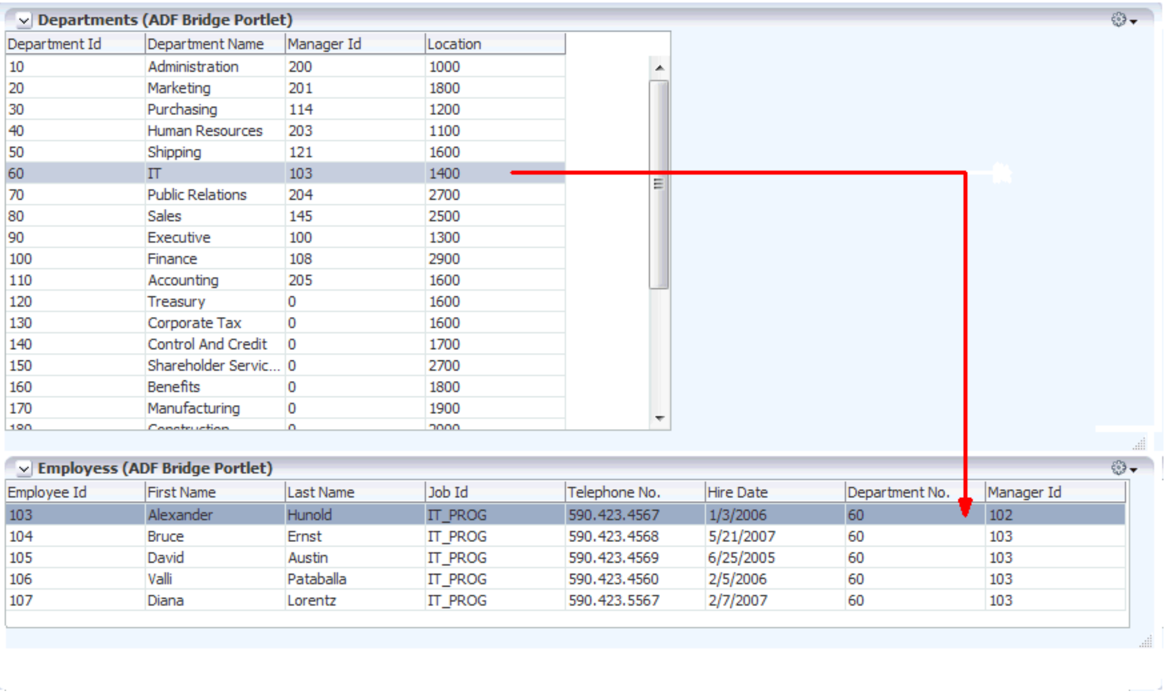
```
<eventMap xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
  <event name="departmentSelected">
    <producer region="*">
      <consumer region="" handler="updateTableForDepartmentId"
                handleCondition="${ADFPortletBridge.bridgeRequest}">
        <parameters>
          <parameter name="p1" value="#{payLoad}"/>
        </parameters>
      </consumer>
    </producer>
  </event>
</eventMap>
```

Note: The `<producer region="*">` attribute accepts events from any region. This is because when the task flow is running as a portlet, with the event coming into the portlet from a remote application, the remote application does not have any knowledge of the producer region.

The EL expression within `handleCondition="${ADFPortletBridge.bridgeRequest}"` evaluates to `true` if the current request is running under the Oracle JSF Portlet Bridge. This ensures that this event map is used only when the task flow is running as a portlet. It is not essential to have this `handleCondition`. However it can be useful to be able to define a separate `eventMap` which is used only when the task flow is running as a portlet.

When the two portletized task flows are added to a page, as long as the name of the event triggered by the Departments portlet is the same as that expected by the Employees portlet, no further coding is required; the portlets are automatically linked and when a department is selected in the Departments portlet, the Employees portlet is updated to display employees belong to the selected department.

Figure 58–1 Linking JSF Portlets



Departments (ADF Bridge Portlet)

Department Id	Department Name	Manager Id	Location
10	Administration	200	1000
20	Marketing	201	1800
30	Purchasing	114	1200
40	Human Resources	203	1100
50	Shipping	121	1600
60	IT	103	1400
70	Public Relations	204	2700
80	Sales	145	2500
90	Executive	100	1300
100	Finance	108	2900
110	Accounting	205	1600
120	Treasury	0	1600
130	Corporate Tax	0	1600
140	Control And Credit	0	1700
150	Shareholder Servic...	0	2700
160	Benefits	0	1800
170	Manufacturing	0	1900
180	Construction	0	2000

Employess (ADF Bridge Portlet)

Employee Id	First Name	Last Name	Job Id	Telephone No.	Hire Date	Department No.	Manager Id
103	Alexander	Hunold	IT_PROG	590.423.4567	1/3/2006	60	102
104	Bruce	Ernst	IT_PROG	590.423.4568	5/21/2007	60	103
105	David	Austin	IT_PROG	590.423.4569	6/25/2005	60	103
106	Valli	Pataballa	IT_PROG	590.423.4560	2/5/2006	60	103
107	Diana	Lorentz	IT_PROG	590.423.5567	2/7/2007	60	103

You may choose to not use automatic event listening, for example, if you have multiple portlets on the same page that use the same events and you wish to control the flow of events between them. Or perhaps the names of the contextual events used by the JSF portlets that you want to link do not match. In this case you must explicitly create an event map in the page definition of the page containing the portletized task flows. This event map links the portlet events of the portlets that you want to wire together. Example 58–8 shows how this would work in our example if the Employees task flow was expecting an event named `departmentId` instead of `departmentSelected`.

Example 58–8 Event Map to Manually Link JSF Portlets

```
<eventMap xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
  <event name="departmentSelected">
    <producer region="EventSampleProducerdepartments1_1">
      <consumer handler="EventSampleProduceremployees1_1.
          {http://xmlns.oracle.com/adfm/contextualEvent}departmentId"/>
    </producer>
  </event>
</eventMap>
```

> **Note:** In the case of portletized task flows, the `handler` attribute must specify not only the specific binding object that is to handle the event, it must also specify the full QName of the portlet event, using the format `<portletBindingId>.<eventQName>`. The namespace does not have to be the ADFm namespace; it can be any portlet event, provided the payload is compatible.

58.7.2 How to Link a JSF Portlet to a JSR 286 Portlet

As well as linking JSF portlets to other JSF portlets, you can also link a JSF portlet to a regular JSR 286 portlet. To do this, you must ensure that the JSR 286 portlet explicitly declares that it can to receive contextual events.

For example, we can link the Departments task flow from our previous example to a Department Address portlet, a JSR 286 portlet, to display the address of a selected department.

For automatic event wiring to work, the Department Address portlet must declare that it can receive the contextual event from the Department portlet. It can do this in two ways:

- The Department Address portlet directly supports the `departmentSelected` contextual event:

```
<supported-processing-event id="departmentSelected">
  <qname xmlns:x="http://xmlns.oracle.com/adfm/contextualEvent">
    x:departmentSelected
  </qname>
</supported-processing-event>
```

- The event definition for the Department Address portlet's event, `department`, provides an alias to associate it with the `departmentSelected` contextual event:

```
<event-definition id="department">
  <qname xmlns:x="http://xmlns.oracle.com/portlet/EventSample">
    x:department
  </qname>
  <alias xmlns:x="http://xmlns.oracle.com/adfm/contextualEvent">
    x:departmentSelected
  </alias>
  <value-type>hr.Department</value-type>
</event-definition>
```

> **Note:** The namespace for portlet events used to carry contextual event is always:
>
> `http://xmlns.oracle.com/adfm/contextualEvent`
>
> The namespace is used in the event declarations or alias given above. This namespace indicates to the consumer that the portlet wishes to receive a contextual event with the given name as a portlet event. This is essential for automatic event wiring to work.

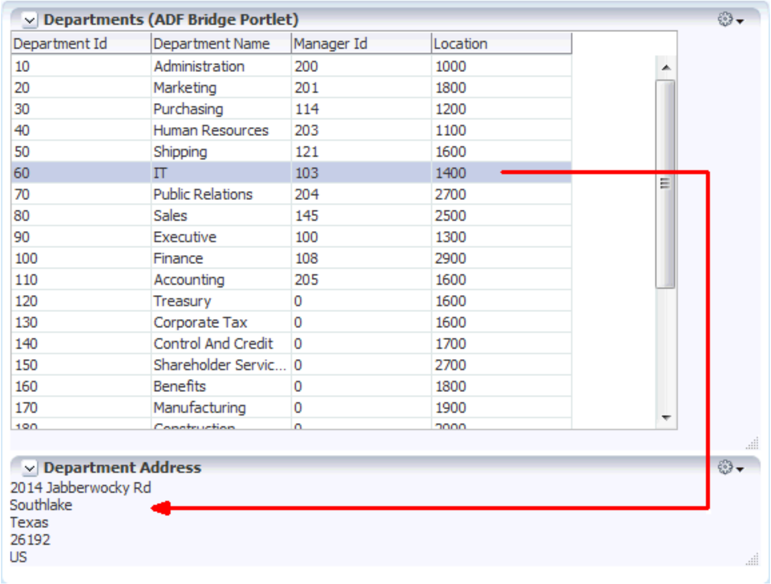
The Department Address portlet includes code in its `processEvent` implementation to handle the event (Example 58–9). This method looks for either the `departmentSelected` or the `department` event with the alias as defined above. The payload type for both of these events is `hr.Department`. However, the method shown in Example 58–9 illustrates how to use the `ADFmPayloadWrapper` to unwrap the payload. `ADFmPayloadWrapper` is the event type that the Oracle JSF Portlet Bridge uses by default when raising events.

Example 58–9 Code to Handle the departmentSelected Event

```
public void processEvent(EventRequest request, EventResponse response)
    throws PortletException, IOException
  {
    response.setRenderParameters(request);

    Event event = request.getEvent();
    String eventName = event.getName();
    if ("departmentSelected".equals(eventName) ||
        "department".equals(eventName))
    {
      Object payload = event.getValue();
      if (payload instanceof ADFmPayloadWrapper)
      {
        payload = ((ADFmPayloadWrapper)payload).getPayload();
      }
      if (payload instanceof Department)
      {
        Department department = (Department)payload;
        int locationId = department.getLocation();
        response.setRenderParameter("locationId", Integer.toString(locationId));
      }
    }
  }
```

When these two portlets are displayed together on a page, selecting a department in the Departments portlet automatically updates the Department Address portlet to display the address of the selected department.

Figure 58–2 Linking a JSF Portlet to a JSR 286 Portlet



Departments (ADF Bridge Portlet)

Department Id	Department Name	Manager Id	Location
10	Administration	200	1000
20	Marketing	201	1800
30	Purchasing	114	1200
40	Human Resources	203	1100
50	Shipping	121	1600
60	IT	103	1400
70	Public Relations	204	2700
80	Sales	145	2500
90	Executive	100	1300
100	Finance	108	2900
110	Accounting	205	1600
120	Treasury	0	1600
130	Corporate Tax	0	1600
140	Control And Credit	0	1700
150	Shareholder Servic...	0	2700
160	Benefits	0	1800
170	Manufacturing	0	1900
180	Construction	0	2000

Department Address

2014 Jabberwocky Rd
Southlake
Texas
26192
US

If the Department Address portlet does not explicitly support the `departmentSelected` event or define an appropriate alias, you can still link the two portlets by creating an event map in the page definition (Example 58–10).

Example 58–10 Event Map to Explicitly Link the Departments and Department Address Portlets

```
<eventMap xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
  <event name="departmentSelected">
    <producer region="EventSampleProducerdepartments1_1">
      <consumer handler="DepartmentAddress1_1.
          {http://xmlns.oracle.com/portlet/EventSample}department"/>
    </producer>
  </event>
</eventMap>
```

The result of this event mapping is that when the `departmentSelected` contextual event is raised by the `EventSampleProducerdepartments1_1` portlet binding, the event is delivered to the `DepartmentAddress1_1` portlet binding, which in turn sends the event on to the portlet using the portlet event, `department`.

> **Note:** The payload of the `departmentSelected` contextual event is a `hr.Departments` object. This is the same payload type that the portlet's `department` portal event is expecting, so that matches and everything works correctly. It is also possible for the portlet to declare that it expects a payload of type `ADFmPayloadWrapper`. In this case, the portlet consumer detects this and automatically wraps the contextual event payload in an `ADFmPayloadWrapper` object.

58.7.3 How to Link a JSR 286 Portlet to a JSF Portlet

You can also send portlet events from a JSR 286 portlet to a JSF portlet. The portlet event is converted into a contextual event by the Oracle JSF Portlet Bridge and is then delivered into the producer ADF application to be consumed using standard contextual event techniques.

The Departments task flow contains a `methodAction` binding that binds to a method on the `DepartmentsDataControl` (Example 58–11).

Example 58–11 Definition of methodAction for the Departments Task Flow

```
<methodAction id="updateTableForLocationId" RequiresUpdateModel="true"
              Action="invokeMethod" MethodName="updateTableForLocationId"
              IsViewObjectMethod="false"
              DataControl="DepartmentsDataControl"
              InstanceName="DepartmentsDataControl.dataProvider">
  <NamedData NDName="locationId" NDType="int"/>
</methodAction>
```

The `updateTableForLocationId` method receives, as a parameter, a location ID that causes the list of departments returned by the data control to be filtered by that location ID.

The task flow contains an event map to map the contextual event onto the appropriate methodAction (Example 58–12).

Example 58–12 Event Map for Portletized Departments Task Flow

```
<eventMap xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
  <event name="locationId">
    <producer region="*">
      <consumer region="" handler="updateTableForLocationId"
                handleCondition="${ADFPortletBridge.bridgeRequest}">
        <parameters>
          <parameter name="p1" value="#{payLoad}"/>
        </parameters>
      </consumer>
    </producer>
  </event>
</eventMap>
```

Note: The event map cannot reference the region where the event originates because it is not present when the task flow is running as a portlet, so we use a wildcard as the event source in the event map

In the Department Locations portlet, when a location is selected, the `processAction` method raises a portlet event, `locationId`, giving the location ID of the selected location (Example 58–13).

Example 58–13

```
public void processAction(ActionRequest request, ActionResponse response)
    throws PortletException
  {
    String locationId = request.getParameter("locationId");
    Location location = getLocation(Integer.parseInt(locationId));

    if (location != null)
    {
      // QName matches the event declared as a supported-publishing-event in
      // portlet.xml for this portlet.

      // LocationId event. Raised in the ContextualEvent namespace makes it readily
      // consumable by ADF Bridge portlets. Likewise we wrap with the
      // ADFmPayloadWrapper payload object that the ADF Bridge expects.
      response.setEvent(new QName("http://xmlns.oracle.com/adfm/contextualEvent",
                                   "locationId"),
                        new ADFmPayloadWrapper(Integer.valueOf(location.getLocationId())));
    }
  }
```

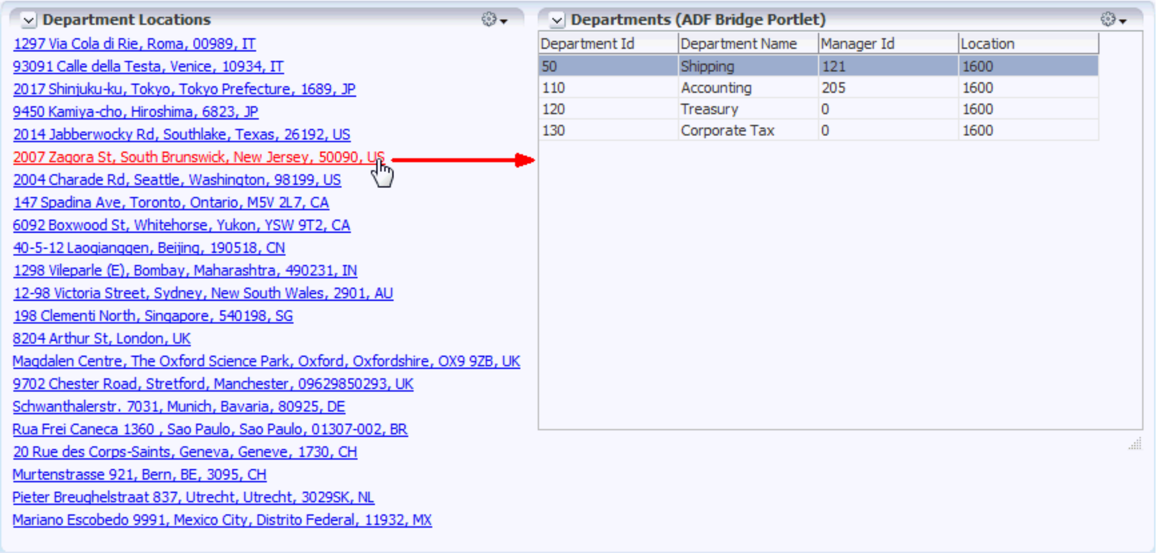
Note: The `locationId` event raised in the `processAction` method has a payload of type of `Integer`. However, because JSF portlets always expect portlet events with the contextual event payloads wrapped with `ADFmPayloadWrapper`, we must wrap the payload to suit the receiving portlet's requirements if we want automatic delivery of events to work.

Likewise, the QName for the event we raise must be:

```
{http://xmlns.oracle.com/adfm/contextualEvent}locationId
```

When you drop the portlets on a page, selecting a location in the Department Location portlet automatically updates the Departments portlet to display the departments at the selected location.

Figure 58–3 Linking a JSR 286 Portlet to a JSF Portlet



1297 Via Cola di Rie, Roma, 00989, IT
93091 Calle della Testa, Venice, 10934, IT
2017 Shinjuku-ku, Tokyo, Tokyo Prefecture, 1689, JP
9450 Kamiya-cho, Hiroshima, 6823, JP
2014 Jabberwocky Rd, Southlake, Texas, 26192, US
2007 Zagora St, South Brunswick, New Jersey, 50090, US
2004 Charade Rd, Seattle, Washington, 98199, US
147 Spadina Ave, Toronto, Ontario, M5V 2L7, CA
6092 Boxwood St, Whitehorse, Yukon, YSW 9T2, CA
40-5-12 Laogianggen, Beijing, 190518, CN
1298 Vileparle (E), Bombay, Maharashtra, 490231, IN
12-98 Victoria Street, Sydney, New South Wales, 2901, AU
198 Clementi North, Singapore, 540198, SG
8204 Arthur St, London, UK
Magdalen Centre, The Oxford Science Park, Oxford, Oxfordshire, OX9 9ZB, UK
9702 Chester Road, Stretford, Manchester, 09629850293, UK
Schwanthalerstr. 7031, Munich, Bavaria, 80925, DE
Rua Frei Caneca 1360 , Sao Paulo, Sao Paulo, 01307-002, BR
20 Rue des Corps-Saints, Geneva, Geneve, 1730, CH
Murtenstrasse 921, Bern, BE, 3095, CH
Pieter Breughelstraat 837, Utrecht, Utrecht, 3029SK, NL
Mariano Escobedo 9991, Mexico City, Distrito Federal, 11932, MX

Department Id	Department Name	Manager Id	Location
50	Shipping	121	1600
110	Accounting	205	1600
120	Treasury	0	1600
130	Corporate Tax	0	1600

If the two portlets do not declare events with matching names (for example the contextual event from the Departments portlet is called `locId`), or if automatic event listening is disabled, you can still link the two portlets by creating an event map in the page definition to map the contextual event from the Departments portlet to the portlet event from the Department Location portlet (Example 58–14).

Example 58–14

```
<eventMap xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
  <event name="locationId">
    <producer region="DepartmentLocations1_1">
      <consumer handler="DepartmentsADFBridgePortlet1_1.
          {http://xmlns.oracle.com/adfm/contextualEvent}locId">
      </consumer>
    </producer>
  </event>
</eventMap>
```

58.7.4 What You May Need to Know About Portlet Events in the Oracle JSF Portlet Bridge

Using a Serialized Type for the Contextual Event Payload

Part of the JSR 286 event's payload is the wrapped contextual event payload, which is serialized. Therefore, while contextual event payloads can be any object type, when you are sending contextual events via WSRP, only serialized types are supported.

When this wrapped contextual event is delivered, the contextual event payload must be deserialized on the consumer before the contextual event can be forwarded into the consumer application. To deserialize the event, the payload class must be available on the consumer as well as on the producer. This condition is automatically met when the original payload is a Java Runtime Environment class, such as `java.lang.String`.

Raising Undeclared Events

If your Oracle ADF task flow includes ADFm events that do not have corresponding portlet events declared in the `portlet.xml` file, you can enable the Oracle JSF Portlet Bridge to raise these undeclared events.

To raise undeclared events, set the following container runtime option for the portletized task flow:

```
<portlet id="Application5untitled1jspx1_1">
   ...
   <container-runtime-option>
      <name>oracle.portlet.bridge.adf.raiseUndeclaredContextualEvents</name>
      <value>true</value>
   </container-runtime-option>
   ...
</portlet>
```

Setting this option to `true` means that any ADFm event raised is forwarded on as a portlet event. If this option is not provided or is set to `false`, then only events with corresponding portlet event declarations are forwarded. For information about setting container runtime options, see Section 59.3.4.3, "Setting Container Runtime Options for Individual Portlets."

You can also enable undeclared portlet events to automatically be forwarded on from the portlet binding in the consumer application as ADFm events.

In the portlet binding, set the `raiseUndeclaredContextualEvent` attribute to `true`, for example:

```
<portlet id="Application5untitled1jspx1_1"
         portletInstance="/oracle/adf/portlet/WsrpPortletProducer4/ap/
               Application5untitled1jspx_2943bd23_012e_1000_8004_0aa7c0849010"
         class="oracle.adf.model.portlet.binding.PortletBinding"
         retainPortletHeader="false"
         listenForAutoDeliveredPortletEvents="true"
         listenForAutoDeliveredParameterChanges="true"
         raiseUndeclaredContextualEvents="true"
         xmlns="http://xmlns.oracle.com/portlet/bindings"/>
```

Setting this option to `true` means that if a portlet event is received, a corresponding ADFm event is raised, even if there is no event declaration in the portlet binding. The name of the ADFm event is directly taken from the QName of the portlet event. This is so that ADFm events raised from the Oracle JSF Portlet Bridge have the same name as that used when the event was raised on the remote application.

Using Partial Page Rendering

The Oracle JSF Portlet Bridge uses portlet events to transport contextual events to and from the consumer application. However, partial page rendering (PPR) requests are implemented using Portlet 2.0 resource requests. It is not possible to send or receive portlet events in resource requests. Therefore proprietary mechanisms are used to transport the contextual events from the JSF Portlet to the consumer application in the case of PPR requests.

58.8 What You May Need to Know When Creating a JSF Portlet

You must code your JSF pages such that they produce markup that conforms with JSR 286 portlet markup fragment rules. If you have chosen to use Oracle ADF, the markup in your page comes mainly from the Oracle ADF Faces components, which naturally render markup in a style that is either compatible with JSF portlets or can be automatically interpreted by the Oracle JSF Portlet Bridge into a compatible style (for example, by rendering the portlet in an inline frame).

The sections that follow provide some guidance on how to avoid common issues that you may encounter as you code Oracle ADF pages that you later choose to publish as portlets.

This section includes the following topics:

- Section 58.8.1, "General Guidelines"
- Section 58.8.2, "Portlet Guidelines"
- Section 58.8.3, "Security Guidelines"
- Section 58.8.4, "JSF Guidelines"
- Section 58.8.5, "Oracle ADF Guidelines"

58.8.1 General Guidelines

This section includes the following topics:

- Section 58.8.1.1, "Application Must Run as a Web Application"
- Section 58.8.1.2, "The Portlet Is Contained by a Different Page"
- Section 58.8.1.3, "Servlet Dependencies"
- Section 58.8.1.4, "Secured Applications"
- Section 58.8.1.5, "Deep Links"
- Section 58.8.1.6, "Java EE Authentication"
- Section 58.8.1.7, "Timeout Period"

58.8.1.1 Application Must Run as a Web Application

Prior to creating a portlet from your JSF application, the application, including all of its pages and task flows, must run properly after you deploy it to Integrated WLS. If it cannot run as a regular web application, it cannot run as a portlet producer either.

58.8.1.2 The Portlet Is Contained by a Different Page

One area that you should consider when creating task flows that will be exposed as portlets is that the page on which you render the task flow as a portlet is different to the one in the original producer application.

Some common errors that occur include:

- Expecting to access JavaScript in the consuming page.
- Expecting to find managed beans or objects added to scopes as part of the consuming page.
- Expecting components in the JSF component tree from the consumer to be present.

58.8.1.3 Servlet Dependencies

When writing an application that is supposed to run in both servlet and portlet environments, avoid casting to `HttpServlet` objects (or you get a `ClassCastException` when running as a portlet). Instead, use the abstraction provided by the Faces `ExternalContext` object. For example, instead of:

```
HttpServletRequest request = getRequestFromFacesContext();
String localContextPath = request.getContextPath();
```

Use the following:

```
String localContextPath=
FacesContext().getCurrentInstance().getExternalContext().getRequestContextPath();
```

To the extent that `ExternalContext` does not provide that abstraction for you, you can write servlet or portlet specific code. You can use the following method to check if the application runs as portlet:

```
public static boolean isPortletRequest()
  {
    Map<String, Object> m =
        FacesContext.getCurrentInstance().getExternalContext().getRequestMap();
    Object phase = m.get("javax.portlet.faces.phase");
    if (phase != null)
    {
      return true;
    }
    else
    {
      return false;
    }
  }
```

58.8.1.4 Secured Applications

If your application is secured, ensure that you have secured identity propagation as described in Section 74.17, "Securing Identity Propagation Through WSRP Producers with WS-Security."

58.8.1.5 Deep Links

For normal interactions with a portlet, there is a session maintained between the consumer and the producer. This is done by storing a session cookie in the consumer and sending it to the producer on each request. On the original request, the session is established and on subsequent requests, the portlet sends the session cookie to the producer and the session is reused.

For deep links, that is, links from the portlet to the producer application, the request is from the browser direct to the producer application. In this case, the session cookie cannot be sent so a new session is established. If a shared session is required for deep links, then this must be implemented by the developer. A common implementation is to write this state to a common location, accessible from the producer and the application, and pass a reference to this state in the deep link.

58.8.1.6 Java EE Authentication

Java EE login is not supported. Java EE applications can be configured with different authentication techniques, such as Basic and Digest. As portlets are fragments incorporated into a consumer's page, it is generally expected that direct authentication occurs between the client and the consumer, not the client and the portlet producer. As a result, these authentication techniques are not supported in JSR 286. In the JSR 286 case, Java EE authentication occurs through WS-Security mechanisms that allow the Web service consumer to be authenticated and verified by the producer, and propagate the user identity for user authentication and authorization. Published Oracle ADF artifacts must not contain login links that trigger Java EE authentication.

58.8.1.7 Timeout Period

For applications that take a long time to render, consider increasing the time out period when you register a producer that was created by the Oracle JSF Portlet Bridge. Note however that the time out period specified during producer registration is limited by the maximum time out period (`maximumTimeout` element) specified in `adf-config-xml`.

58.8.2 Portlet Guidelines

This section includes the following topics:

- Section 58.8.2.1, "Portlet Sizing"
- Section 58.8.2.2, "Resources and Links"
- Section 58.8.2.3, "Redirecting Requests"
- Section 58.8.2.4, "Memory Consumption"
- Section 58.8.2.5, "WSRP Version"

58.8.2.1 Portlet Sizing

When consuming a JSF portlet, the consumer application automatically renders the portlet content within an inline frame. This means that any inline popup is then confined within the inline frame. You should take this into consideration when specifying the size of the portlet.

If the JSF portlet is a portletized page, then you have full control of the content and can decide how that content fills the inline frame window, utilizing exactly the same techniques as you would to determine how the content would fill the browser window.

If the portlet is being stretched by its ancestor in the consumer application, then the `maximized` attribute is set to `true` on the `af:document` component in the document produced by the Oracle JSF Portlet Bridge. This means that components that support it, such as `panelStretchLayout`, will fill the entire inline frame.

For more information about portlet sizing, see Section 63.5.5, "What You May Need to Know About Portlet Sizing."

58.8.2.2 Resources and Links

For resources and links, you must specify the location relative to the web-app-context-root. Otherwise, your images and other resources cannot be found by the portlet. Do not use relative (../) path notation. Portlets in Oracle WebCenter Portal Framework run remotely and are accessed using a SOAP protocol (WSRP). The latter means that the regular web application concept of request path does not apply in a JSR 286 container. The JSR 286 specification reflects this by mandating that all resource URLs either be absolute or context path relative.

58.8.2.3 Redirecting Requests

Do not redirect or forward a request within your JSP. JSR 286 only supports requestDispatcher.include(). The use of httpServletResponse.sendRedirect() or requestDispatcher.forward() results in exceptions and errors. To work properly in a portlet environment, you must implement JSF navigation rules in faces-config.xml or Oracle ADF task flow control flow rules.

58.8.2.4 Memory Consumption

The Oracle JSF Portlet Bridge stores the content of the request scope between requests so that the request scope is preserved between a portlet Action and a portlet Render (which are two separate requests). Because of this, to minimize overall memory consumption, you must especially avoid storing too much data in the request scope when the application contains JSF portlets.

58.8.2.5 WSRP Version

The Oracle JSF Portlet Bridge makes use of Portlet 2.0 features. Consequently, it should be used only with WSRP V2. The portlet's minimumWsrpVersion container runtime option should be set to 2. For more information, see Section 59.3.4, "How to Customize the Runtime Environment for JSR 286 Portlets."

58.8.3 Security Guidelines

This section includes the following topics:

- Section 58.8.3.1, "Oracle ADF Secured Applications"
- Section 58.8.3.2, "Role Based Authorization"

58.8.3.1 Oracle ADF Secured Applications

When you use the Create Portlet Entry or Manage Portlet Entries of Task Flows dialog to portletize a task flow in an Oracle ADF secured application (the security scheme being Authentication and Authorization), you must manually grant permission to the following wrapper task flow in the jazn-data.xml file of the producer application:

```
/WEB-INF/adfp-portlet-bridge-container.xml#adfp-portlet-bridge-container
```

If you do not grant the permissions, the portlet does not render.

For example, if you have an application with two roles: authenticated-role, with view permission; and testrole, with customize, edit, grant, personalize, and view permissions, you must add the following entries inside the <permissions> tag of each role:

- For authenticated-role:

```
<permission>
  <class>oracle.adf.controller.security.TaskFlowPermission</class>
  <name>
  /WEB-INF/adfp-portlet-bridge-container.xml#adfp-portlet-bridge-container
  </name>
  <actions>view</actions>
</permission>
```

- For testrole:

```
<permission>
  <class>oracle.adf.controller.security.TaskFlowPermission</class>
  <name>
    /WEB-INF/adfp-portlet-bridge-container.xml#adfp-portlet-bridge-container
  </name>
  <actions>customize,edit,grant,personalize,view</actions>
</permission>
```

58.8.3.2 Role Based Authorization

If you are portletizing a task flow or page that has role based authorization (that is, the task flow or page has been granted certain roles), WS-Security is required to propagate the user correctly. If you set up WS-Security, the JSF portlet does not render the content if the propagated user does not have permission to view the task flow.

For information about setting up WS-Security on the producer, see Section 74.17, "Securing Identity Propagation Through WSRP Producers with WS-Security."

When registering the producer with the consuming application, you must ensure that you set the appropriate security properties. For more information, see Section 63.2.1.1, "How to Register a WSRP Portlet Producer."

58.8.4 JSF Guidelines

This section includes the following topics:

- Section 58.8.4.1, "Using h:commandLink"

58.8.4.1 Using h:commandLink

When using the `h:commandLink` JSF standard HTML component ensure that you set the following `context-param` in `web.xml` so that the JSF Reference Implementation does not generate any external JavaScript resource. This is to work around an issue in the JSF Reference Implementation where the reference to the JavaScript resource is not properly encoded.

```
<context-param>
    <param-name>com.sun.faces.externalizeJavaScript</param-name>
    <param-value>false</param-value>
</context-param>
```

58.8.5 Oracle ADF Guidelines

This section includes the following topics:

- Section 58.8.5.1, "Task Flow Returns"
- Section 58.8.5.2, "Mismatched Style Sheets"
- Section 58.8.5.3, "ADF Faces Dialog Framework"
- Section 58.8.5.4, "Composer Components"
- Section 58.8.5.5, "The fileDownloadActionListener Component"

- Section 58.8.5.6, "The prepareModel Phase"
- Section 58.8.5.7, "Accessing Request Parameters"
- Section 58.8.5.8, "Referencing Page Parameters"
- Section 58.8.5.9, "Trinidad Components"
- Section 58.8.5.10, "Using ADF Faces Client-Side APIs to Find Components"
- Section 58.8.5.11, "Encoded URLs"
- Section 58.8.5.12, "Issues with goLink"
- Section 58.8.5.13, "In-Protocol Resource Requests"

58.8.5.1 Task Flow Returns

When an ADF bounded task flow completes it may use a task flow return to send control back to the calling task flow. In a portletized task flow, there is no calling task flow, so the task flow return does not make any sense in this context. This may cause what appears to be an empty portlet to display as the task flow navigates to a state where there is no view selected. The task flow will stay in this state until it is refreshed either when the input parameters change or the session on the producer is reset.

If you plan to portletize your task flow, you should avoid using task flow returns. If you must use a task flow return, you can provide a dummy task flow with a default activity of the task flow that you want to portletize. When the task flow return is executed, it returns to the dummy task flow. The dummy task flow then executes its default activity, which is to call back to the original task flow and thus restart the task flow when the portlet is next called.

58.8.5.2 Mismatched Style Sheets

In general, when you consume a task flow using the Oracle JSF Portlet Bridge, the portlet producer tries to use the skin of the consumer page. When the producer cannot match the consumer skin, the portlet generates and references its own style sheet. This is known as a *mismatched skin*. A mismatched skin can occur when:

- The consumer and producer use different versions of ADF Faces. In this case, the producer still uses the consumer skin.
- The consumer has additional `skin-additions` that the producer does not have, or vice versa. In this case, the producer still uses the consumer skin.
- The producer does not have the consumer skin. In this case, the producer uses the portlet skin.

Mismatched skins can cause performance problems because the browser has to fetch an extra style sheet and the generated portlet markup uses uncompressed styles resulting in larger markup.

If a mismatched skin occurs, the producer log includes the following:

```
The skin skinName specified on the requestMap will not be used because the
styleSheetDocument id on the requestMap does not match the local skin's
styleSheetDocument's id. It could mean the jars are not identical. For example,
one might have trinidad-skins.xml skin-additions in a jar file on the class path
that the other does not have.
```

The portlet markup inside the inline frame also includes a link tag to the portlet style sheet resource, for example:

```
<link rel=\"stylesheet\" charset=\"UTF-8\" type=\"text/css\"
```

```
href=\"http:.../resourceproxy/portletId...252525252Fadf%252525252Fstyles%252525252
Fcache%252525252Fblafplus-rich-portlet-d1062g-en-ltr-gecko.css...
```

You can use an HTTP monitoring tool to see that a request is made to the portlet style sheet resource.

There are a number of reasons for mismatched skins. For a skin to match, the producer and consumer must be the same for all the following conditions:

- The ADF Faces version; a different version of ADF Faces may have different style selectors.
- The style compression, defined in `web.xml`, for example:

  ```
  <context-param>
    <param-name>
      org.apache.myfaces.trinidad.DISABLE_CONTENT_COMPRESSION
    </param-name>
    <param-value>false</param-name>
  </context=param>
  ```

- Tonal style or themes, defined in `web.xml`, for example:

  ```
  <context-param>
    <param-name>xyz</param-name>
    <param-value>xyz</param-value>
  </context-param>
  ```

- Availability of skin additions. Skin additions are defined in `META-INF/trinidad-skins.xml` in a JAR file. These are then aggregated from all the JAR files in the class path. If there are any JAR files that exist on the producer but not on the consumer, or vice versa, you get a mismatch.

  ```
  <skin-addition>
    <skin-id>blafplus-rich.desktop</skin-id>
    <style-sheet-name>
      adf/styles/flexComponents-blafplus-rich-desktop.css
    </style-sheet-name>
  </skin-addition>
  ```

  To determine if the JAR files match, turn on Trinidad logging to show which `skin-addition` it is processing. To do this, update the `logging.xml` log level of both the producer and consumer WebLogic Servers to `FINEST` then restart the servers:

  ```
  <logger name="org.apache.myfaces.trinidad.skin.SkinUtils" level=FINEST"/>
  ```

  When you run the consumer page, any skin entries that do not match in the consumer and producer log files are the cause of the skin mismatch.

58.8.5.3 ADF Faces Dialog Framework

ADF Faces Dialog Framework is not supported. If your application includes any buttons or icons that launch secondary browser windows, then the contents of the new windows are not displayed properly when the application is run as a portlet. As such, you should avoid using these components if you plan to portletize your application. Examples of components that launch secondary windows are:

- `<tr:inputDate>`
- `<tr:inputColor>`
- `<tr:popup>`

- the useWindow attribute of <af:commandButton>

58.8.5.4 Composer Components

Portletization of pages that contain Composer components is not supported.

58.8.5.5 The fileDownloadActionListener Component

The <af.fileDownloadActionListener> component is not supported.

58.8.5.6 The prepareModel Phase

Oracle ADF components/code that handle prepareModel must be idempotent. Any code running during the prepareModel phase must be rerunnable without effect to the underlying data/business logic. When running in the portlet environment, prepareModel is called twice during the complete JSF life cycle as opposed to being called once when running within a regular web application.

The reason for this difference is that the Oracle JSF Portlet Bridge runs JSF in two requests not one. It is implemented as if every JSF request redirected before the render phase. The consequence of this approach is that the JSF restoreView phase is called both when the request is first submitted and then again when request to render is received.

58.8.5.7 Accessing Request Parameters

Do not access or reference request parameters from model code except in page parameters. Besides being a cleaner MVC2 implementation, following this guideline avoids problems when such artifacts are published as portlets. Where regular JSF artifacts run their entire lifecyle in a single request, the Oracle JSF Portlet Bridge runs these artifacts in two requests, as if every JSF request redirected before the render phase.

This two phase model enables the clearing of submitted parameters before rendering in a manner that allows such clearing to be communicated all the way back to the client, which makes this request something you could bookmark. As a result, request parameters do not exist during the render phase. As described previously, prepareModel is invoked again in this rendering phase. Therefore, any references to request parameters in this phase handler fail. You should avoid code like either of the following fragments:

```
<invokeAction id="doExecuteWithParams"
              Binds="ExecuteWithParams"
              Refresh="prepareModel"
              RefreshCondition="${param.id != null}"
/>

<invokeAction id="doExecuteWithParams"
              Binds="ExecuteWithParams"
              Refresh="renderModel"
              RefreshCondition="${param.id != null}"
/>
```

58.8.5.8 Referencing Page Parameters

Do not reference page parameters in the prepareModel phase. This issue relates to the same problem described for request parameters in Section 58.8.5.7, "Accessing Request Parameters." Generally, page parameters depend on request parameters and are evaluated during the restoreView phase. As this phase is called a second time during portlet rendering and request parameters are not available, such use fails. Instead, move any dependency on a page parameter value into the model before JSF transitions from its execute phases to its render phase.

58.8.5.9 Trinidad Components

If you are portletizing an application that contains only Trinidad components (`<tr:>` tags only), then you must manually include the following libraries in your project:

- `jdeveloper\modules\oracle.adf.view_11.1.1\adf-richclient-api-11.jar`
- `jdeveloper\modules\oracle.adf.view_11.1.1\adf-richclient-impl-11.jar`

This is so that the URLs to icons in the style sheet generated for the producer are encoded correctly.

58.8.5.10 Using ADF Faces Client-Side APIs to Find Components

Because a portlet is a naming container, special consideration should be taken when using ADF Faces client-side APIs to find components. An example component ID:

- When run as a regular web application: `id="demoTemplate:popup"`
- When run as a Portlet Producer application: `id="__ ns12345678:demoTemplate:popup"`

Things to watch out for specifically are:

- Avoid using the `AdfPage.PAGE.findComponentByAbsoluteId()` API. Use `getSource()` and `findComponent()` methods instead. For example:

```
<trh:script text="
function showPopup(event) {
    event.cancel();
    // var popup =
    //  AdfPage.PAGE.findComponentByAbsoluteId("demoTemplate:popup");
    var source = event.getSource();
    var popup = source.findComponent("popup");
    popup.show({align:"after_end", alignId:"button"});
}
"/>
```

- Use a relative path for `clientId` instead of an absolute path (starting with a ':'). For example, use:

```
<af:showPopupBehavior popupId="demoTemplate:iteratorpop"
            triggerType="mouseHover"/>
```

  Instead of:

```
<af:showPopupBehavior popupId=":demoTemplate:iteratorpop"
            triggerType="mouseHover"/>
```

- For more information, see the "What You May Need to Know About Using Naming Containers" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

58.8.5.11 Encoded URLs

By default, URLs in the portletized page or task flow are encoded such that they are proxied by the consumer application. In some circumstances, you may not want to encode these URLs, for example, when requesting JavaScript libraries from content delivery networks or accessing resources directly from the user's browser to make use of a locally configured HTTP proxy.

Another example is if your task flow includes an inline frame (for example, using an `af:inlineFrame` tag). In this case you need to ensure that the inline frame URL does not get encoded to go via the portlet resource proxy in the consumer. If you do not do this, any relative URLs in the content inside the inline frame will not work because they will be relative to the URL to the resource proxy rather than their correct location relative to the original URL for the inline frame.

To bypass the URL encoding, set the `_xEncodeUrl` parameter to `false` on URLs that are passed to the Oracle JSF Portlet Bridge for encoding. This parameter is picked up by the Oracle JSF Portlet Bridge, which ensures that the URL does not get encoded via the resource proxy. The parameter is ignored if the task flow is not running as a portlet.

For example, replace:

```
<af:inlineFrame source="http://myiframe.example.com">
```

with:

```
<af:inlineFrame source="http://myiframe.example.com?_xEncodeUrl=false">
```

Note: Do not use this parameter to access resources that reside on the producer server. These resources must be accessed using the portlet client's proxy.

58.8.5.12 Issues with goLink

The `adf:goLink` component encodes the link URL as an action for the current JSF application. In other words, it encodes the link using `ExternalContext.encodeActionURL(...)`. This is different to the JSF `h:outputLink` component, which encodes the URL as a resource URL using `ExternalContext.encodeResourceURL(...)`. If you are using `goLink` to link to a resource that is not a Faces View, then the URL must be encoded as a Resource URL. To do this, you must tell the Oracle JSF Portlet Bridge the link is not a Faces View by adding the following parameter to the URL:

```
javax.portlet.faces.ViewLink=false
```

For example:

```
<af:goLink text="goLink 1" id="gl1"
destination="/mynonfaceslink?javax.portlet.faces.ViewLink=false"/>
```

58.8.5.13 In-Protocol Resource Requests

Within a JSF application running under the Oracle JSF Portlet Bridge, when a resource URL is created using `ExternalContext.encodeResourceURL(...)`, that resource URL is encoded in such a way that it is executed as an out-of-protocol resource request. This means that when the portlet consumer accesses that resource it does so by making a direct call to the target URL. It is also possible for resource URLs to be in-protocol. This means that the portlet consumer accesses the resource by making a WSRP web service call to the producer application, which in turn ultimately leads to the `serverResource` method being called on the portlet. It is then the portlet's responsibility to provide the resource which is sent back in the WSRP response. When that portlet is the Oracle JSF Portlet Bridge, it serves the resource by using a request dispatcher to forward to the target URL.

Generally out-of-protocol resource requests are to be preferred as they do not incur the additional overhead of the web service call. In-protocol requests can also cause large amounts of memory to be allocated as the WSRP SOAP response is constructed, if the resource being served is large. In the case of the Oracle JSF Portlet Bridge, the only time that you would want to use in-protocol resources is when you need to share the portlet scoped HTTP session between the resource requests and the other portlet requests, such as portlet action or render requests.

To cause the Oracle JSF Portlet Bridge to encode resource URLs as in-protocol resource requests, add the following parameter to the URL, before `ExternalContext.encodeResourceURL(...)` is called:

```
javax.portlet.faces.InProtocolResourceLink=true
```

For example:

```
<af:goLink text="goLink 1" id="gl1"
destination="/mynonfaceslink?javax.portlet.faces.ViewLink=false&javax.portlet.face
s.InProtocolResourceLink=true"/>
```

58.9 Copying a Runtime-Created Skin to a JSF Portlet Producer Application

In a WebCenter Portal application, you can create skins at runtime, using the Resource Manager. When you do this, you may encounter rendering issues on pages that include JSF portlets. This is because the skin used by the WebCenter Portal application is not available to the remote application rendering the task flow.

To rectify this issue, you must copy the runtime-created skin to the Portlet Producer application created when the task flow was portletized.

To copy a runtime-created skin to a Portlet Producer application:

1. Export the skin from the Portal Framework application to an EAR file.

   For information about how to do this, see Section 9.6.1, "How to Download a Portal Resource Using the Assets Page."

2. Repackage the exported skin as a shared library (a JAR file):

   a. Extract the `transport.mar` file:

   ```
   $ jar xvf myskin.ear
   inflated: transport.mar
   ```

   b. Extract the metadata files:

   ```
   $ jar xvf transport.mar
   inflated: oracle/webcenter/siteresources/.../Skin.css
   inflated: oracle/webcenter/siteresources/.../generic-site-resources.xml
   ...
   ```

   c. Locate and view the file `generic-site-resources.xml` among the metadata files. Normally, this file is in a directory like:

   ```
   oracle/webcenter/siteresources/scopedMD/scopeGUID/generic-site-resources.xm
   l
   ```

   The file should have a section that describes the exported skin, similar to the following example:

   ```
   <resourceType name="skin" ...>
   ```

```
  <resource displayName="MySkin"
     metadataFile="/oracle/webcenter/siteresources/.../Skin.css" ...>
    <customAttributes>
      <customAttribute name="skinId"
         value="gsr616d879d_99e0_4bd9_8c10_98e7ea272a6a.desktop" .../>
      <customAttribute name="skinFamily"
         value="gsr616d879d_99e0_4bd9_8c10_98e7ea272a6a" ...>
      <customAttribute name="skinExtends"
         Value="webcenter-fusion-internal.desktop" .../>
    </customAttributes>
  </resource>
</resourceType>
```

d. Note the following information from `generic-site-resources.xml`:

  - *`skinId`* (for example, `gsr616d879d_99e0_4bd9_8c10_98e7ea272a6a.desktop`)
  - *`skinFamily`* (for example, `gsr616d879d_99e0_4bd9_8c10_98e7ea272a6a`)
  - *`skinExtends`* (for example, `webcenter-fusion-internal.desktop`)

e. Build the directory structure for the JAR file:

```
$ mkdir META-INF
```

f. Copy the `Skin.css` file into the `META-INF` directory:

```
$ cp oracle/webcenter/siteresources/.../Skin.css META-INF
```

g. Create a new file called `trinidad-skins.xml` under the `META-INF` directory:

```
$ edit META-INF/trinidad-skins.xml
```

h. Add the following XML to the new `trinidad-skins.xml` file:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<skins xmlns="http://myfaces.apache.org/trinidad/skin">
  <skin>
    <style-sheet-name>Skin.css</style-sheet-name>
    <id>skinId</id>
    <family>skinFamily</family>
    <extends>skinExtends</extends>
    <render-kit-id>org.apache.myfaces.trinidad.desktop</render-kit-id>
  </skin>
</skins>
```

where ***`skinId`***, ***`skinFamily`***, and ***`skinExtends`*** are the values noted earlier.

i. Package the JAR file:

```
$ jar cvf myskin.jar META-INF
adding: META-INF/trinidad-skins.xml(in = 359) (out= 171)(deflated 52%)
adding: META-INF/Skin.css(in = 5560) (out= 1413)(deflated 74%)
```

The JAR file should contain two files: `Skin.css` and `trinidad-skins.xml`.

3. Copy the new `myskin.jar` file to the Portlet Producer application.

The easiest way to do this is to copy the file to the `WEB-INF/lib` directory of the Portlet Producer web application.

59

Building Standards-Based Java Portlets Using JSR 286

This chapter describes how to build standards-based Java portlets using the Java Portlet Specification, JSR 286.

This chapter includes the following topics:

59.1 Introduction to Standards-Based Java Portlets

WebCenter Portal supports standards-based Java portlets built using the JSR 286 standard.

JSR 286 is a specification that defines a set of APIs to enable interoperability between portlets and portals, addressing the areas of aggregation, personalization, presentation, and security. JSR 286 defines container services that provide:

- A portlet API for coding portlet functionality
- The URL-rewriting mechanism for creating user interaction within a portlet container
- The security and personalization of portlets
- Interportlet communication using portlet events and public render parameters

For more information, see the JSR 286 specification at:

`http://jcp.org/en/jsr/detail?id=286`

WSRP is a web services standard that enables the plug-and-play of visual, user-facing web services with portals or other intermediary web applications. Being a standard, WSRP enables interoperability between a standards-enabled container and any WSRP portal. WSRP defines:

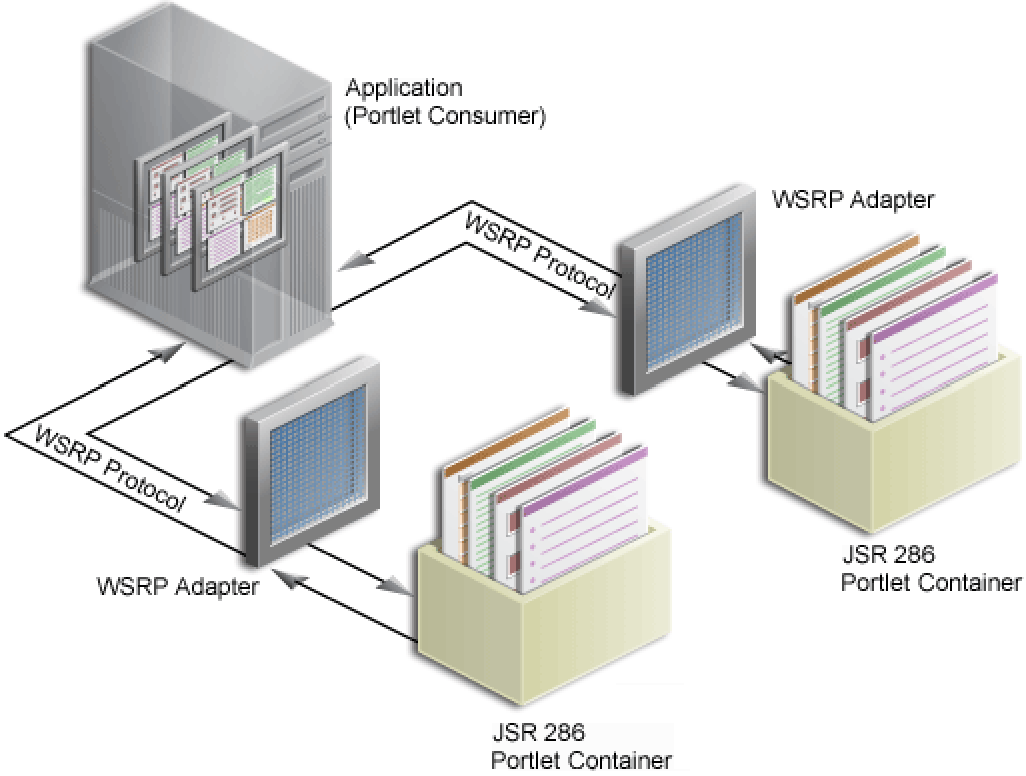
- Web Services Definition Language (WSDL) interface for the invocation of WSRP services

- Markup fragment rules for markup emitted by WSRP services
- The methods to publish, find, and bind WSRP services and metadata

WSRP provides communication between a portlet client (for example, a WebCenter Portal Framework application) and a portlet container running on a remote server. JSR 286 describes the Java Portlet API for running portlet producer applications. Combining these standards enables developers to integrate their applications from any internal or external source as portlets with WSRP portals. Building pages becomes as simple as selecting portlets from the JDeveloper Resource Palette or Application Resources pane of the Application Navigator.

Figure 59–1 shows the architecture of the WSRP specification with JSR 286 portlets.

Figure 59–1 WSRP Specification Architecture



For a description of how JSR 286 security concepts are exposed through WSRP, see Section 74.17, "Securing Identity Propagation Through WSRP Producers with WS-Security."

59.2 Creating a JSR 286 Java Portlet

WebCenter Portal provides a wizard, available in JDeveloper, for quickly and easily creating the initial framework of your JSR 286 standards-based Java portlets.

This section includes the following topics:

- Section 59.2.1, "How to Create a JSR 286 Java Portlet"
- Section 59.2.2, "What Happens When You Create a JSR 286 Portlet Using the JDeveloper Wizard"

59.2.1 How to Create a JSR 286 Java Portlet

In the Create JSR 286 Java Portlet wizard, you can choose which portlet modes you want to implement and the implementation method (JSP, HTTP servlet, Java class, or HTML) to use for each mode. The wizard then creates a simple implementation for each of the selected modes.

To create a JSR 286 Java portlet using the JDeveloper wizard:

1. In JDeveloper, open the portlet producer application under which you want to create your portlet, or create a new portlet producer application.

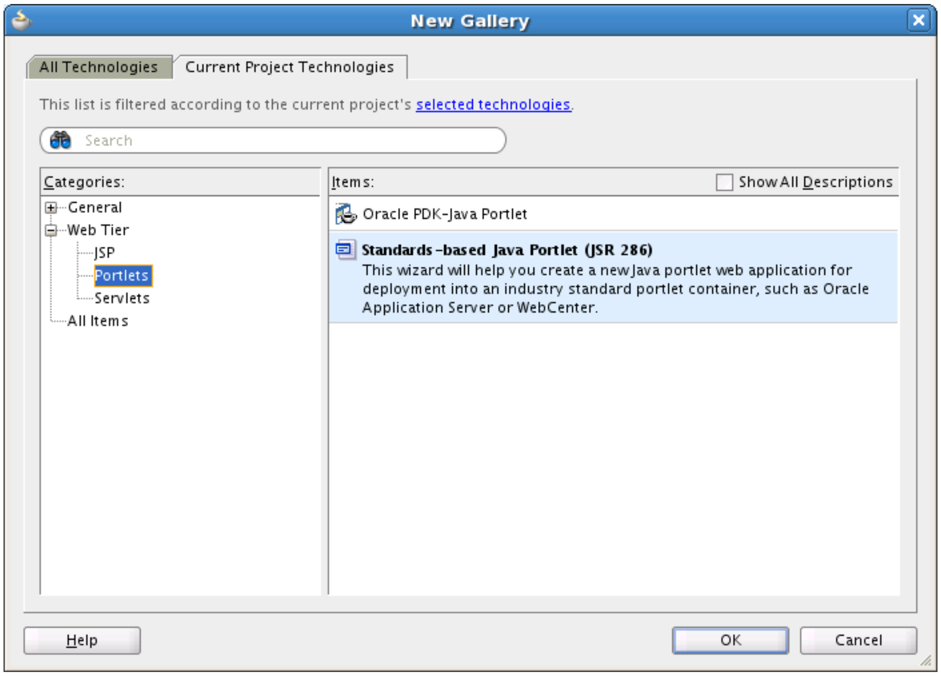
   For information about how to create a portlet producer application, see Section 57.4.1, "Portlet Producer Applications."

   > **Note:** If you do not use the WebCenter Portal - Portlet Producer Application template to create the portlet producer application, you must manually add the appropriate portlet building technology scopes to the application.
   >
   > Applications built using the WebCenter Portal - Framework Application template are *not* scoped for portlet creation.

2. Right-click the project under which you want to create your portlet (for example **Portlets**), and choose **New.**

3. In the New Gallery (Figure 59–2), expand **Web Tier,** select **Portlets** and then **Standards-based Java Portlet (JSR 286),** and click **OK.**

Figure 59–2 The New Gallery with Standards-based Java Portlet (JSR 286) Selected



This wizard will help you create a new Java portlet web application for deployment into an industry standard portlet container, such as Oracle Application Server or WebCenter.

> **Tip:** If the project already contains JSR 286 portlets, you can also create a new portlet by:
>
> - Right-clicking `portlet.xml` and choosing **Add Portlet**.
> - Opening `portlet.xml`, clicking the **Design** tab, and clicking the **Add** icon on the **Portlets** tab.

4. On the General Portlet Information page of the Create JSR 286 Java Portlet wizard, replace the default name provided in the **Name** field with one that better describes the purpose of the portlet.
5. In the **Class** field, enter a name for the class for the portlet. You can accept the default name provided or supply your own. If you supply your own name, it must be a valid Java name.
6. From the **Package** drop-down list, select the package in which to create the class, or enter a package name.

   Click the **Browse** button to find packages within the project, if required. If you do not select a specific package, the wizard uses the default package of the project.
7. From the **Default Language** drop-down list, select the default language that your portlet supports. The wizard uses English by default.
8. Select **Enable users to edit portlet content** if you want your portlet to support Edit mode. In the wizard, this option is selected by default.

   Edit mode enables users to personalize the portlet at runtime. For more information, see Section 57.4.2.2, "Edit Mode."

   If you select this option, you can specify implementation details for the portlet's Edit mode later on in the wizard.
9. Click **Next**.
10. On the Additional Portlet Information page, in the **Portlet Title** field, enter a descriptive title for your portlet.

    The portlet title is displayed in the Resource Palette or Application Resources panel, so make the title something to help users decide whether the portlet is useful to them. The portlet title is also displayed on the portlet header when the portlet appears on a page.

    > **Tip:** The **Display Name**, **Short Title**, **Description**, and **Keyword** attributes are not implemented in WebCenter Portal. You do not need to enter any values for these fields unless your portlet is likely to be consumed by other applications.
    >
    > For example, Oracle Portal uses the portlet display name in the Portlet Repository.

11. At this point in the wizard, you can click **Finish** to create the portlet immediately, using the default values for all remaining settings.

    To provide additional details for your portlet, click **Next** and follow the remaining steps.
12. On the Content Types and Portlet Modes page, in the **Content Types and Portlet Modes** list, select **view**.
13. In the Implementation Method section, select how you want to implement View mode for your portlet (for more information about View mode, see

Section 57.4.2.1, "View Mode"):

- Select **Generate JSP** to generate a skeleton JSP file for the portlet mode. Enter a name for the JSP in the corresponding field, or accept the default.

  When you complete the wizard, the generated JSP displays in the Application Navigator where you can select it for further development. This is the default selection for all portlet display modes.

- Select **Generate ADF-Faces JSPX** to generate a page to which you can add ADF-Faces components. Enter a name for the JSPX in the corresponding field, or accept the default.

  If you choose this option, the portlet implementation class is created as a subclass of `oracle.portlet.bridge.adf.application.ADFBridgePortlet`, instead of as a subclass of `javax.portlet.GenericPortlet`. That is, the wizard generates a portlet producer application which uses the Oracle JSF Portlet Bridge. For more information about the Oracle JSF Portlet Bridge, see Chapter 58, "Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge."

- Select **Map to Path** to map the portlet mode to a web resource in the portlet producer application, such as a page. The resource is not generated by the wizard. Enter the name and path in the corresponding field. You can create this resource after completing the wizard if necessary.

  With this selection, you must write the targeted resource or file yourself. The target could be, for example, a JSP, a servlet, or an HTML file. This selection enters code in the generated portlet Java class that routes requests for the given mode to the specified target.

- Select **Custom Code** to implement the portlet mode through a custom coded object. You must create this object later. This selection generates a skeleton method to render content (`private void do`*`MODE_NAMECONTENT_TYPE`*) in the generated portlet java class. You must update this code to render useful content.

  Tip: If you want this portlet mode to support a different content type, for example `text/xml`, see Step 16.

14. If you selected **Enable users to edit portlet content** on the first page of the wizard, select **edit** and then select the implementation method for Edit mode (for information about Edit mode, see Section 57.4.2.2, "Edit Mode"), as described in step 13.

15. To implement another portlet mode for your portlet:

    a. In the **Content Types and Portlet Modes** list, select an existing mode (for example, **view**) under the appropriate content type (for example, **text/html**).

    b. Click **Add**.

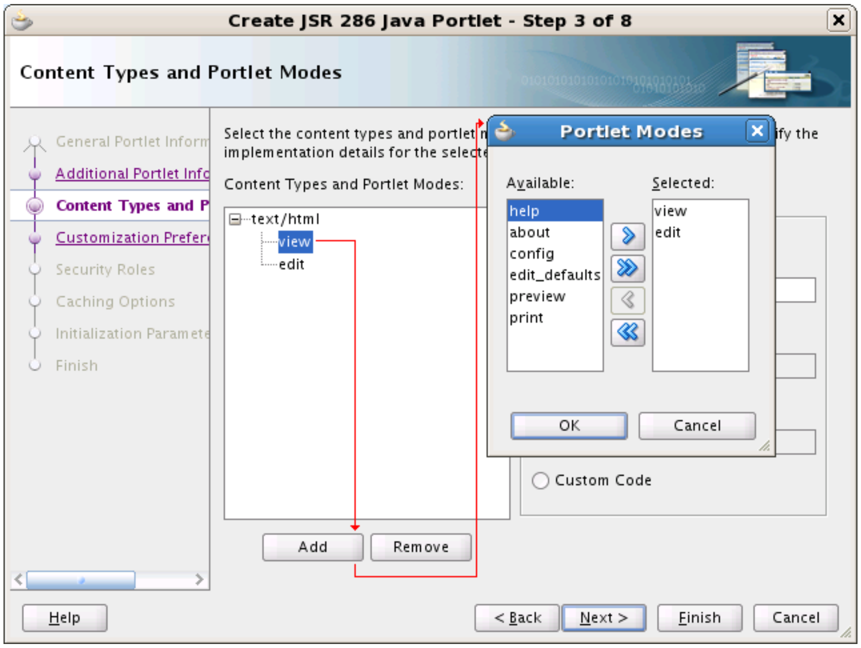
    c. In the Portlet Modes dialog, move the required mode or modes to the **Selected** list and click **OK**.

       The Portlet Modes dialog lists the standard modes supported by JSR 286 and the extended modes supported by WebCenter Portal.

       For more information, see Section 57.4.2, "Portlet Modes."

    d. Select each of the portlet modes and specify the implementation method to use for rendering content, as described in step 13.

Figure 59–3 Adding a Portlet Mode to a JSR 286 Java Portlet



16. The content type identifies what type of content the portlet supports. Portlets can support multiple content types. By default, portlets created using the Create JSR 286 Java Portlet wizard support the `text/html` content type.

    To add a different content type:

    a. In the **Content Types and Portlet Modes** list, select an existing content type (for example, **text/html**).

    b. Click **Add**.

    c. In the Content Types dialog, move the required content types to the **Selected** list and click **OK**.

       – **text/html**—The portlet supports text encoded with HTML. This is the default selection.

       – **text/xml**—The portlet supports text encoded with XML.

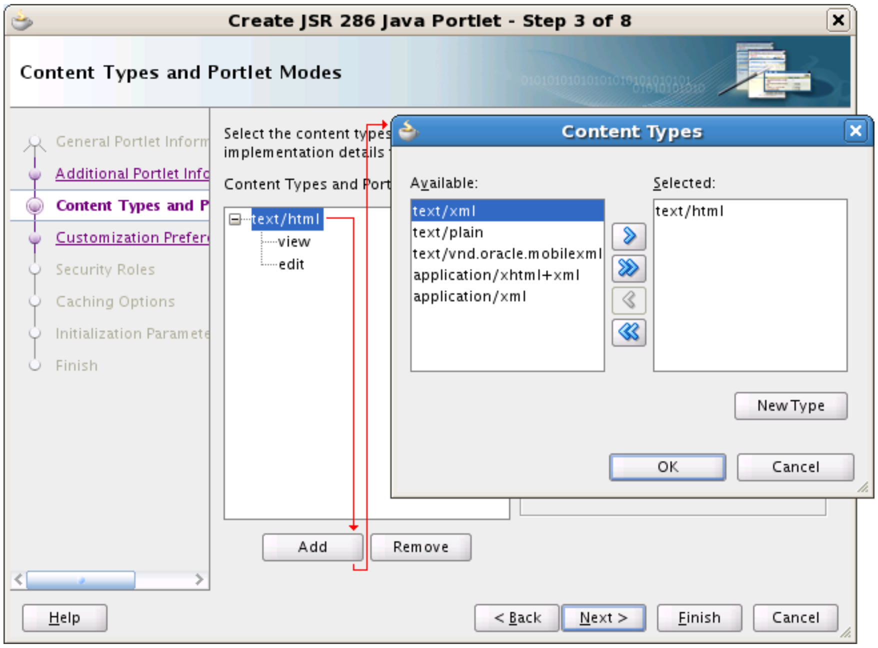
       – **text/plain**—The portlet supports plain, unencoded text.

       – **text/vnd.oracle.mobilexml**—The portlet supports text encoded with Oracle Mobile XML. Note, however, that WebCenter Portal does not support Oracle Mobile XML.

       – **application/xhtml+xml**—The portlet supports text encoded with XHTML.

       – **application/xml**—The portlet supports any XML content, including XHTML.

Figure 59–4 Adding a Content Type to a JSR 286 Java Portlet



17. Click **Next.**

    If you selected **Enable users to edit portlet content** on the General Portlet Information page earlier in the wizard, then you can create portlet preferences to enable users of the portlet to specify values for the portlet at runtime. Go to step 18.

    If you did not select this option, go to step 24.

18. On the Customization Preferences page, click **Add** to add a new portlet preference to the portlet.

    By default, the wizard includes a portlet preference to enable users to customize the portlet title.

19. In the Add New Preference dialog, in the **Name** field, enter a name for the new preference.

    The name must be unique in the portlet and cannot contain spaces.

20. In the **Default Values** field, enter one or more default values for the new preference. Separate multiple values with commas.

21. Select the **Translate Preference** check box if you want to be able to make the preference available in different languages.

    For example, if the portlet is likely to be consumed by a multilingual portal you want to ensure that the preference displays in the appropriate language.

    If you enable this option, then entries for the preference are added to the resource bundle class that JDeveloper generates for the portlet.

    > **Tip:** Edit the resource bundle to provide translations for the preference name and default values. The name will almost always require translating, but the default values may not, for example, if the value is an integer.

22. Click **OK**.

23. Repeat the preceding steps to add more preferences. When you are done click **Next.**

24. On the Security Roles page, to add an existing security role to your portlet, select the security role and move it to the **Selected** list.

    Security roles enable you to set tiered levels of access to the portlet. For example, a *View* user can view the portlet but cannot edit it; a *Customize* user can customize portlet settings; a *Manage* user can perform all available functions associated with the portlet.

    The **Available** list displays the security roles defined for the application in which you are creating the portlet. Moving a security role to the **Selected** list creates a reference of the security role in the application's portlet deployment file (`portlet.xml`) that refers to the security role in the application's web deployment file (`web.xml`).

    You can create new security roles for the application by editing `web.xml`. For more information, see the JDeveloper online help.

25. Click **Next.**

26. On the Caching Options page, select **Cache Portlet** to enable expiry-based caching for your portlet.

    For more information about expiry-based caching, see Section 57.4.5, "Portlet Performance" and Section 59.3.10.1, "Implementing Expiry-Based Caching in JSR 286 Portlets."

    Selecting this option indicates that portlet caching is managed by the portlet container. The portlet itself may choose to cache content for any given response. The settings on this page apply only when the portlet itself does not specify a caching condition for a response.

    If you do not want any default caching for this portlet, choose **Do Not Cache By Default.** In this case, the wizard actually sets a cache duration of 0 seconds. As stated earlier, this cache setting only comes into play when the portlet itself does not specify a caching condition for a response.

    If you choose no caching here and you later decide to implement default caching for the portlet, then you can change the cache duration value in the `portlet.xml` file, which is generated by the wizard, to a number greater than zero.

    For information about how to implement validation-based caching, see Section 59.3.10.2, "Implementing Validation-Based Caching in JSR 286 Portlets."

27. If you chose to cache the portlet, in the Default Expiry Conditions section, select:

    - **Cache Content Expires After [ ] seconds** to expire the cached portlet content after a certain amount of time. Specify the time limit in the corresponding field.

    - **Cache Content Never Expires** to never expire the cached portlet content. You may want to select this option if the portlet contains static content that is unlikely to change.

28. Click **Next.**

29. On the Initialization Parameters page, you can add initialization parameters to your portlet.

Initialization parameters provide the application developer, who decides what goes into the WAR file, an alternative to JNDI variables for configuring the behavior of all of the different components of the application (for example, servlets and portlets) in a compatible way. These initialization parameters are added to the `portlet.xml` file.

For example, you might want to turn on some kind of debugging mode for the portlet or display different menu options in different environments.

a. Click **New** to add a new initialization parameter to the portlet.

b. In the newly added row, double-click each field to provide a **Name**, default **Value**, and **Description** for the parameter.

c. Repeat these steps to add more initialization parameters.

d. When you are done, click **Finish** to create the portlet.

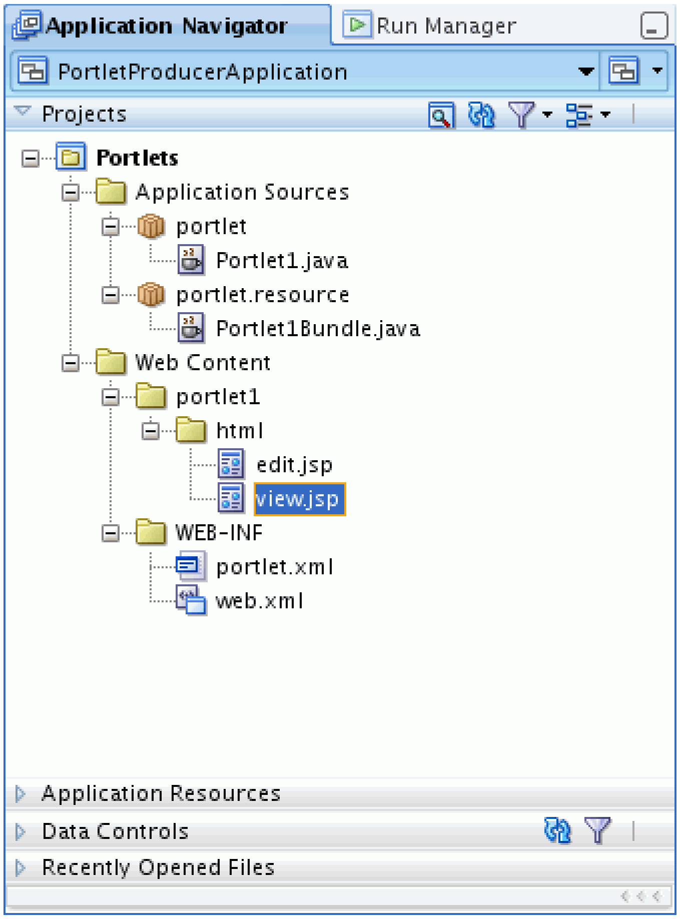
59.2.2 What Happens When You Create a JSR 286 Portlet Using the JDeveloper Wizard

When you use the Create JSR 286 Java Portlet wizard, JDeveloper generates a default implementation of the portlet. Specifically, the following files are created:

- Java classes:
  - *`portletName`*`.java` is invoked by the portlet container and contains all the methods required by the portlet standards.
  - *`portletName`*`Bundle.java` contains all the translation strings for the portlet.
  - *`portletName`*`Backing.java` contains the JSF backing bean for the JSPX pages that implement portlet modes. This class is created if you implement portlet modes as ADF-Faces JSPX pages.
- `portlet.xml` is the portlet deployment descriptor file for the application.
- `web.xml` is the web deployment descriptor file for the application.
- Files for each portlet mode you selected for the portlet:
  - If you selected **Generate JSP** for the portlet mode, a JSP page is created for the mode, for example, `view.jsp`.
  - If you selected **Generate ADF-Faces JSPX**, a JSPX page is created for the mode, for example, `view.jspx`. You can add Faces components to this page.
  - If you selected **Map to Path,** no additional files are created as the code for the portlet mode resides in an existing resource. Code is added to the portlet's Java class to route requests to the specified target.
  - If you selected **Custom Code**, no additional files are created, but the code for the portlet mode resides in the portlet's Java class.
- `faces-config.xml` is a configuration file that registers an application's resources, such as custom validators and managed beans and describes the page flow of the application. This file is created if you implement portlet modes as ADF-Faces JSPX pages.
- `trinidad-config.xml` is a configuration file that contains information about the application skin family. This file is created if you implement portlet modes as ADF-Faces JSPX pages.

You can see all these files in the Application Navigator, as shown in Figure 59–5.

Figure 59–5 Files Generated for a JSR 286 Java Portlet



59.3 Developing JSR 286 Java Portlets

When you have built your initial portlet implementation using the Create JSR 286 Java Portlet wizard, the next step is to create the code that drives the portlet content and behavior. Because JSR 286 portlets adhere to the Java standards, you can find substantial information about enhancing them from many different sources, such as third-party books and web pages, including:

`http://jcp.org/en/jsr/detail?id=286`

This section includes the following topics:

- Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File"
- Section 59.3.2, "How to Add Custom Portlet Modes to JSR 286 Portlets"
- Section 59.3.3, "How to Access User Information in JSR 286 Portlets"
- Section 59.3.4, "How to Customize the Runtime Environment for JSR 286 Portlets"
- Section 59.3.5, "How to Use Public Render Parameters in JSR 286 Portlets"
- Section 59.3.6, "How to Use Portlet Events in JSR 286 Portlets"
- Section 59.3.7, "How to Add Portlet Preferences to JSR 286 Portlets"
- Section 59.3.8, "How to Use Portlet Filters in JSR 286 Portlets"

- Section 59.3.9, "How to Implement Interportlet Communication Across Different Pages"
- Section 59.3.10, "How to Enhance JSR 286 Portlet Performance with Caching"
- Section 59.3.11, "How to Implement Rewritten URLs for Resource Proxy"
- Section 59.3.12, "How to Implement Stateless Resource Proxying"
- Section 59.3.13, "How to Implement Security for JSR 286 Portlets"
- Section 59.3.14, "How to Manage the Persistence Store for JSR 286 Portlets"
- Section 59.3.15, "How to Export and Import Portlet Producers at Design Time"

59.3.1 How to Edit the Portlet Deployment Descriptor File

The portlet deployment descriptor file for the application, `portlet.xml`, specifies the portlet resources in the application. Example 59–1 shows an example portlet deployment descriptor file.

Example 59–1 Example Portlet Deployment Descriptor File

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<portlet-app version="2.0"
       xsi:schemaLocation="http://java.sun.com/xml/ns/portlet/portlet-app_2_0.xsd
                           http://java.sun.com/xml/ns/portlet/portlet-app_2_0.xsd"
       xmlns="http://java.sun.com/xml/ns/portlet/portlet-app_2_0.xsd"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <portlet id="1328624289503">
    <portlet-name>myPortlet</portlet-name>
    <display-name xml:lang="en-US">Portlet1</display-name>
    <display-name xml:lang="en">English Display Name</display-name>
    <portlet-class>portlet.Portlet1</portlet-class>
    <expiration-cache>300</expiration-cache>
    <supports>
      <mime-type>text/html</mime-type>
      <portlet-mode>edit</portlet-mode>
    </supports>
    <supported-locale>en-US</supported-locale>
    <resource-bundle>portlet.resource.Portlet1Bundle</resource-bundle>
    <portlet-info>
      <title>This Is My Portlet</title>
      <short-title>My Portlet</short-title>
      <keywords/>
    </portlet-info>
    <portlet-preferences>
      <preference>
        <name>portletTitle</name>
      </preference>
    </portlet-preferences>
  </portlet>
  <custom-portlet-mode>
    <portlet-mode>about</portlet-mode>
  </custom-portlet-mode>
  <custom-portlet-mode>
    <portlet-mode>config</portlet-mode>
  </custom-portlet-mode>
  <custom-portlet-mode>
    <portlet-mode>edit_defaults</portlet-mode>
  </custom-portlet-mode>
  <custom-portlet-mode>
```

```
    <portlet-mode>preview</portlet-mode>
  </custom-portlet-mode>
  <custom-portlet-mode>
    <portlet-mode>print</portlet-mode>
  </custom-portlet-mode>
</portlet-app>
```

After you have created your JSR 286 portlet using the wizard, you can edit the `portlet.xml` file to edit the portlet resources.

When you open the `portlet.xml` file in JDeveloper, you can edit the source code or you can use the Overview Editor to edit portlet resources without having to manually modify it in the Source view.

To edit the portlet deployment descriptor file:

1. In the Application Navigator, open the portlet producer application.
2. Expand the portlet project (for example, **Portlets**).
3. Expand the **Web Content** node and then the **WEB-INF** node.
4. Right-click **portlet.xml** and choose **Open**.
5. Click the **Design** tab to open the Overview Editor for `portlet.xml`.

   Tip: If you prefer to edit the source code directly, click the **Source** tab.

6. The Overview Editor for `portlet.xml` contains the following tabs:
   - **Application**—Use to specify general information for the portlet producer application. These properties apply to all portlets within the application.
   - **Portlets**—Use to specify information for individual portlets within the application. For example, you can specify the portlet events and public render parameters supported by a portlet.
   - **Events**—Use to create and manage portlet events for use by all portlets in the application. For more information, see Section 59.3.6, "How to Use Portlet Events in JSR 286 Portlets."
   - **Parameters**—Use to create and manage public render parameters for use by all portlets in the application. For more information, see Section 59.3.5, "How to Use Public Render Parameters in JSR 286 Portlets."
   - **Filters**—Use to specify filter information for the portlets in the application. For more information, see Section 59.3.8, "How to Use Portlet Filters in JSR 286 Portlets."
   - **Filter Mappings**—Use to assign portlet filters to individual portlets. For more information, see Section 59.3.8, "How to Use Portlet Filters in JSR 286 Portlets."

59.3.2 How to Add Custom Portlet Modes to JSR 286 Portlets

In the Create JSR 286 Java Portlet wizard, you add portlet modes by adding them to a list on the Content Types and Portlet Modes page. For more information about using the wizard, see Section 59.2, "Creating a JSR 286 Java Portlet." The wizard enables you to implement the standard modes supported by JSR 286 and the extended modes provided by WebCenter Portal.

The standard modes supported by JSR 286 are:

- View
- Edit
- Help

WebCenter Portal supports the following additional custom modes for JSR 286 portlets:

- About
- Config
- Edit Defaults
- Preview
- Print

After the initial creation of the portlet, you can also define your own custom portlet modes.

The principles of implementing portlet modes are the same for all modes.

To add a custom portlet mode:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Application** tab, if necessary.
3. Expand the Custom Modes section, if necessary.

   This section lists all the custom modes available to the portlets within the application. It includes the WebCenter Portal extended portlet modes.

4. Click the **Add Custom Mode** icon to create a new row for the portlet mode.
5. In the **Portlet Mode** field, enter the name of the portlet mode.

   The name must be unique within the application.

6. In the **Description** field, enter a brief description to explain the purpose of the mode.
7. Deselect the **Portal Managed** check box if applications that consume the portlet do not need to be aware of the portlet mode, that is, the mode is used internally by the portlet.
8. Save the `portlet.xml` file.
9. After adding the custom portlet mode to the application, you must then create the code for the mode in the portlet implementation file.

59.3.3 How to Access User Information in JSR 286 Portlets

You can create user attributes in the portlet producer application to access commonly used user information, such as `user.login.id` or `user.name.family`. At runtime, these user attributes are mapped to the actual attributes of the current user. Portlets can use this information to obtain information about the current user.

To access user information:

1. Open the Overview Editor for the `portlet.xml` file.

For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Application** tab, if necessary.
3. Expand the User Attributes section, if necessary.
4. Click the **Add User Attribute** icon to create a new row for the attribute.
5. In the **Name** field, enter the name of the user attribute, for example `user.login.id`.

   For a list of attribute names, see the "User Information Attribute Names" appendix in the Java Portlet Specification.

   > **Tip:** For a list of the user information attributes supported by WebCenter Portal, see the "Mapping User Attributes to LDAP Directories" section in the *Securing Applications with Oracle Platform Security Services*.

6. In the **Description** field, enter a description for the user attribute.
7. Save the `portlet.xml` file.

   At runtime, the portlet container maps the defined user attributes to the appropriate values. For example, if the current user is John Doe, then the `user.name.family` user attribute is mapped to Doe. Portlets can obtain a `Map` object containing the user attributes from the `PortletRequest` interface.

59.3.4 How to Customize the Runtime Environment for JSR 286 Portlets

When a portlet is run, the portlet container provides the runtime environment and provides an interface between the portlet producer application and the portlet.

Container runtime options provide a way to customize the behavior of the portlet container and therefore customize the runtime environment.

This section includes the following topics:

- Section 59.3.4.1, "Supported Container Runtime Options"
- Section 59.3.4.2, "Setting Container Runtime Options for All Portlets in an Application"
- Section 59.3.4.3, "Setting Container Runtime Options for Individual Portlets"

59.3.4.1 Supported Container Runtime Options

Table 59–1 lists the container runtime options supported by the WebCenter Portal portlet container.

For more information about the JSR 286 container runtime options, see the JSR 286 specification at:

http://jcp.org/en/jsr/detail?id=286

Table 59–1 Supported Container Runtime Options

Container Runtime Option	Supported by	JSR 286 Standard
javax.portlet.actionScopedRequestAttributes	Application Portlet	Yes

Table 59–1 (Cont.) Supported Container Runtime Options

Container Runtime Option	Supported by	JSR 286 Standard
javax.portlet.escapeXml	Application Portlet	Yes
java.portlet.renderHeaders	Not supported	Yes
javax.portlet.servletDefaultSessionScope	Application Portlet	Yes
com.oracle.portlet.allowEventPayloadsWithoutJAXBBinding	Application	No
com.oracle.portlet.allowWsrpExport	Application	No
com.oracle.portlet.compatibilityMode	Application Portlet	No
com.oracle.portlet.defaultProxiedResourceRequiresWsrpRewrite	Application Portlet	No
com.oracle.portlet.defaultServedResourceRequiesWsrpRewrite	Application Portlet	No
com.oracle.portlet.disallowResourceServing	Application Portlet	No
com.oracle.portlet.escapeXmlEncodeUrls	Application Portlet	No
com.oracle.portlet.eventPayloadsXmlType	Application	No
com.oracle.portlet.excludedActionScopeRequestAttributes	Application Portlet	No
com.oracle.portlet.externalScopeRequestAttributes	Application Portlet	No
com.oracle.portlet.importCssToIFrame	Application Portlet	No
com.oracle.portlet.minimumWsrpVersion	Application Portlet	No
com.oracle.portlet.offerPortletOverWsrp	Application Portlet	No
com.oracle.portlet.portalInfoProvider	Application Portlet	No
com.oracle.portlet.redirectAfterAction	Application Portlet	No
com.oracle.portlet.renderHeaders	Application Portlet	No
com.oracle.portlet.requireIFrame	Application Portlet	No
com.oracle.portlet.streamingOptimized	Application Portlet	No

Table 59–1 (Cont.) Supported Container Runtime Options

Container Runtime Option	Supported by	JSR 286 Standard
com.oracle.portlet.suppressWsrpOptimisticRender	Application Portlet	No
com.oracle.portlet.trapWsrpRenderExceptions	Application Portlet	No
com.oracle.portlet.trimEncodeUrls	Application Portlet	No
com.oracle.portlet.useWsrpUserContextForUserAuthentication	Application	No
com.oracle.portlet.wsrpHeaderMode	Application Portlet	No
com.oracle.portlet.wsrpLegacyPortletHandle	Portlet	No
com.oracle.portlet.wsrpPortletHandle	Portlet	No
oracle.portlet.bridge.adf.raiseUndeclaredContextualEvents	Portlet	No

javax.portlet.actionScopedRequestAttributes

Specifies whether to store action-scoped request attributes so that they are available to portlets until a new action occurs.

You can use the WebCenter Portal-specific `excludedActionScopeRequestAttributes` container runtime option to limit which request attributes are stored in the scopes.

Valid values:

- `true`—store request attributes starting at `processAction` until the next `processAction`. You can specify a second value of `numberOfCachedScopes` and a third value indicating the number of scopes to be cached by the portlet container.
- `false`—do not store request attributes.

javax.portlet.escapeXml

Specifies whether to XML encode URLs returned from `actionUrl`, `renderUrl`, and `resourceUrl` JSR 286 tag library tags.

You can override this option on a per-tag basis using the `encodeXml` attribute.

Valid values:

- `true`—(default) the URLs returned by the `actionUrl`, `renderUrl`, and `resourceUrl` tags are XML encoded (using ampersand entities for parameter separation).
- `false`—the URLs returned by the actionUrl, renderUrl, and resourceUrl tabs are not XML encoded (and use just ampersand characters).

Note: This option does not have any effect on the return value of `PortletURL.toString()` or `ResourceURL.toString()`. In both these cases, for JSR 286, the output uses only ampersand characters. To use ampersand entities or to be able to specify the XML encoding to use when generating URLs not using the tag libraries, see the `BaseURL.write()` methods.

javax.portlet.servletDefaultSessionScope

Specifies the scope of the session object provided to servlets or JSPs that are included or forwarded from a Java portlet.

Valid values:

- `APPLICATION_SCOPE`—(default) map the portlet session with application scope.
- `PORTLET_SCOPE`—map the portlet session with portlet scope.

com.oracle.portlet.allowEventPayloadsWithoutJAXBBinding

Allows event payload types declared in `portlet.xml` and event payloads sent from JSR 286 portlets to bypass the JSR 286 spec requirement that these types have a valid JAXB binding.

Valid values:

- `true`—event payloads without valid JAXB bindings are allowed.
- `false`—event payloads without valid JAXB bindings are not allowed, per the JSR 286 specification.

com.oracle.portlet.allowWsrpExport

Specifies whether the WSRP export-portlets operation should be supported for the web application.

This option is used mainly for backward-compatibility; it is preferred to control the export-portlets operation through the `wsrp-producer-config.xml` setting.

Valid values:

- `true`—(default) export-portlets is allowed.
- `false`—export-portlets is not allowed. This overrides the setting in `WEB-INF/wsrp-producer-config.xml`.

com.oracle.portlet.compatibilityMode

Set to `owc168` to invoke the WebCenter Portal JSR 286 container JSR 168 compatibility mode.

This also automatically sets the `disallowResourceServing` runtime option to `true` if no other value for that option is specified.

com.oracle.portlet.defaultProxiedResourceRequiresWsrpRewrite

Specifies the default WSRP `requiresRewrite` flag to use when encoding URLs for resources not served by the portlet. This setting is used for all URLs returned by the `PortletResponse.encodeURL()` method, unless overridden by the presence of the `oracle.portlet.server.resourceRequiresRewriting` request attribute when the `PortletResponse.encodeURL()` method is called.

Valid values:

- `true`—(default) the `requiresRewrite` flag is set to `true`, indicating that the resource should be rewritten by the consumer.
- `false`—the `requiresRewrite` flag is set to `false`, indicating that the resource does not necessarily need to be rewritten by the consumer.

com.oracle.portlet.defaultServedResourceRequiesWsrpRewrite

Specifies the default WSRP `requiresRewrite` flag to use when generating resource URLs for portlet-served resources.

This setting is used for all resource URLs created by the portlet, unless overridden by the presence of the `resourceRequiresRewriting` request attribute when the resource URL methods `write()` or `toString()` are called. This setting is also used to specify the WSRP `requiresRewriting` flag on the served resource response, but can be overridden by the presence of the `resourceRequiresRewriting` request attribute when the portlet's `serveResource()` method returns.

Valid values:

- `true`—the `requiresRewrite` URL flag and `requiresRewriting` response flag are set to `true`, indicating that the resource should be rewritten by the consumer
- `false`—the `requiresRewrite` URL flag and `requiresRewriting` response flag are set to `false`, indicating that the resource does not necessarily need to be written by the consumer, although the consumer may choose to rewrite the URL.

If unspecified, the `requiresRewrite` URL flag is not given a value, and the `requiresRewriting` response flag for a `serveResource` operation is based on the MIME type of the response.

com.oracle.portlet.disallowResourceServing

Specifies whether portlets are allowed to serve resources. This is useful if JSR 168 portlets are run in the 286 container, as any JSR 168 portlet extending `javax.portlet.GenericPortlet` automatically inherits the JSR 286 functionality, which automatically forwards resource requests to a file in the web application named after the resource ID, creating a potential security problem. For the same security reason, JSR 286 portlets that do not serve resources are safest to disallow resource serving.

Valid values:

- `true`—portlets are not allowed to serve resources.
- `false`—portlets are allowed to serve resources.

com.oracle.portlet.escapeXmlEncodeUrls

Specifies whether the JSR 286 container should XML-encode URLs generated from the `PortletResponse.encodeURL()` method.

Valid values:

- `true`—URLs generated by the `PortletResponse.encodeURL()` method are XML-encoded.
- `false`—(default) URLs generated by `PortletResponse.encodeURL()` are not XML-encoded.

com.oracle.portlet.eventPayloadsXmlType

Specifies optional XML schema types for JAXB-bindable Java object event payloads if events are sent over WSRP. This is a multi-valued runtime option; each value consists of a Java class name and QName pair, separated by a colon (`:`). The QName should use the standard Java String representation of a QName (`{`*`namespace`*`}`*`localpart`*). For each value specified, the QName is used as the XML schema type to annotate WSRP event payloads of the specified Java object type after the object has been marshalled to XML. This may be useful when using events to communicate across portlets on multiple producers.

com.oracle.portlet.excludedActionScopeRequestAttributes

This is a multi-valued property with each value being a regular expression. Request attributes which match any of the regular expressions are not stored as action-scoped request attributes if the `javax.portlet.actionScopedRequestAttributes` container runtime option is used, in addition to any request parameters whose values match the regular expressions defined in the `com.oracle.portlet.externalScopeRequestAttributes` container runtime option.

com.oracle.portlet.externalScopeRequestAttributes

This is a multi-valued property with each value being a regular expression. Request attributes which match any of the regular expressions are considered outside of portlet scope, and are shared with the underlying portal request.

If the `javax.portlet.actionScopedRequestAttributes` option is used, any request attributes matching the regular expressions declared in `externalScopeRequestAttributes` are not stored in the action scope request attributes.

com.oracle.portlet.importCssToIFrame

Specifies to a portal consumer whether the CSS file should be imported to an IFRAME portlet.

Valid values:

- `false`—(default) nothing is done.
- `true`—the CSS file from the consumer is applied to an IFRAME portlet.

com.oracle.portlet.minimumWsrpVersion

Specifies minimum required WSRP version for the portlet to work. If the WSRP version being used is less than the value specified, the portlet will not be included in a WSRP `GetServiceDescription`, `GetPortletDescription`, `GetMarkup` and other WSRP responses.

Valid values:

- `1`
- `2`

com.oracle.portlet.offerPortletOverWsrp

Specifies whether the portlet is offered in the WSRP producer's service description.

Any `offerRemote` setting in a `.portlet` file referencing the JSR 168/286 portlet overrides this container runtime option.

Valid values:

- `true`—(default) the portlet is offered in the WSRP producer's service description.
- `false`—the portlet is not included in the service description.

If not specified at all, the default value specified in the `WEB-INF/producer-config.xml` is used.

com.oracle.portlet.portalInfoProvider

Specifies the class name of an optional implementation of `com.bea.portlet.container.IPortalInfo` interface. This implementation defines the value returned by the JSR 286 container's `request.getPortalContext().getPortalInfo()`. The default implementation returns the producer/local server name and version, but a custom implementation could pass both the consumer server information and the producer server information in a WSRP scenario.

com.oracle.portlet.redirectAfterAction

Causes the JSR 286 container to send a redirect to the browser to the portlet's render URL after a `processAction` is run (and after events are handled) so that reloading the resulting page will not result in another `processAction`.

Valid values:

- `true`—a redirect is issued after every portlet action.
- `false`—no redirect is not automatically issued after portlet actions.

com.oracle.portlet.requireIFrame

Specifies whether the portlet must be rendered inside an IFRAME.

Valid values:

- `true`—renders the portlet inside an IFRAME.
- `false`—does not force the portlet to be rendered inside an IFRAME.

com.oracle.portlet.streamingOptimized

Indicates the portlet is optimized to run in streaming mode, which may enhance performance.

Valid values:

- `true`—the portlet is optimized to run in streaming mode.
- `false`—the portlet is not optimized to run in streaming mode.

com.oracle.portlet.suppressWsrpOptimisticRender

Suppresses the optimistic render of a portlet after the action and/or event lifecycles if the portlet is being run over WSRP.

Valid values:

- `true`—optimistic render is always suppressed.
- `false`—optimistic render may be performed.

com.oracle.portlet.trapWsrpRenderExceptions

Specifies whether the JSR 286 container should send exceptions during render as WSRP SOAP faults, or render an exception message for the portlet markup instead.

Valid values:

- `true`—(default) exceptions are not sent as SOAP faults but instead as rendered exception stack traces.
- `false`—exceptions generated by the portlet during render are treated as SOAP faults.

com.oracle.portlet.trimEncodeUrls

Specifies whether the JSR 286 container should trim whitespace from URLs passed to the `PortletResponse.encodeURL()` method.

Valid values:

- `true`—(default) leading and trailing whitespace is trimmed from the URL passed into `PortletResponse.encodeURL()`.
- `false`—whitespace is not trimmed from the URL passed into `PortletResponse.encodeURL()`.

com.oracle.portlet.useWsrpUserContextForUserAuthentication

Specifies whether the PortletRequest methods `getRemoteUser()`, `getUserPrincipal()` and `isUserInRole()` are based on the WSRP user context information or on standard J2EE security.

Valid values:

- `true`—the user information is based on the WSRP user context, if the portlet is run over WSRP. This can be a security problem so use this option with care.
- `false`—(or the portlet is not being run over WSRP) the user information is based on the J2EE authenticated user.

com.oracle.portlet.wsrpHeaderMode

Used only when portlets are being rendered as WSRP remote portlets, to indicate where cookies and headers should be put in the WSRP SOAP response as a hint to the WSRP consumer for the header or cookie's intended final destination.

When portlets are run locally (not over WSRP), headers and cookies set by portlets are always assumed to go to the client. Setting this container runtime option sets a default value for the `PortletRequest` attribute `com.oracle.portlet.wsrpHeaderMode`, which can still be overridden by the portlet at runtime on a per-header basis.

Valid values:

- `client`—headers and cookies set by the portlet are directed to go to the client (for example, the browser).
- `consumer`—headers and cookies set by the portlet are directed to go to the consumer and not passed on to the client.
- `both`—headers and cookies set by the portlet are directed to go to the client and the consumer.

If not set, the portlet container assumes the default value for the producer as specified in the `WEB-INF/wsrp-producer-config.xml` file.

com.oracle.portlet.wsrpLegacyPortletHandle

Allows the specification of a legacy WSRP portlet handle to be used for the portlet, which must be unique within the web application. This is useful for backward-compatibility with WebCenter Portal consumers that use the legacy, portlet-position-based WSRP portlet handles.

If specified, the legacy portlet handle is published in the WSRP serviceDescription as a legacy-handle extension on the portlet, and consumers are able to access the portlet using the legacy portlet handle, although the portlet will not be published in the WSRP serviceDescription under the legacy portlet handle.

com.oracle.portlet.wsrpPortletHandle

Allows the specification of the WSRP portlet handle to be used for the portlet, which must be unique within the web application.

oracle.portlet.bridge.adf.raiseUndeclaredContextualEvents

Allows the Oracle JSF Portlet Bridge to raise ADFm events that do not have corresponding portlet events declared in the `portlet.xml` file.

Valid values:

- `true`—any ADFm event raised is forwarded on as a portlet event.
- `false`—only events with corresponding portlet event declarations are forwarded.

59.3.4.2 Setting Container Runtime Options for All Portlets in an Application

Setting container runtime options at the application level affects all the portlets in the application.

To set application-level container runtime options:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Application** tab, if necessary.
3. Expand the Container Runtime Options section, if necessary.
4. Click the **Add Container Runtime Option** icon to display a list of available options.

   The list includes all container runtime options supported by the WebCenter Portal portlet container, which are listed in Table 59–1.

   If you are using a different portlet container that supports additional container runtime options that are not listed, select **<Customize>** and enter the name of the option in the **Name** field.

   If you specify a container runtime option that is not supported by the portlet container, it is ignored.

5. In the **Value** field, enter a value for the container runtime option.

   The container runtime option is added to the `portlet.xml` code, for example:

   ```
   <container-runtime-option>
      <name>com.oracle.portlet.requireIFrame</name>
      <value>true</value>
   </containter-runtime-option>
   ```

6. Save the `portlet.xml` file.

59.3.4.3 Setting Container Runtime Options for Individual Portlets

You can set container runtime options at the individual portlet level to override the application-wide settings.

To set portlet-level container runtime options:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Portlets** tab, if necessary.
3. Click the **Advanced** tab.

4. Click the **Add Container Runtime Option** icon to display a list of available options.

   The list includes all container runtime options supported by the WebCenter Portal portlet container, which are listed in Table 59–1.

   If you are using a different portlet container that supports additional container runtime options that are not listed, select **<Customize>** and enter the name of the option in the **Name** field.

   If you specify a container runtime option that is not supported by the portlet container, it is ignored.

5. In the **Value** field, enter a value for the container runtime option.

   The container runtime option is added to the `portlet.xml` code, for example:

   ```
   <container-runtime-option>
      <name>com.oracle.portlet.requireIFrame</name>
      <value>false</value>
   </containter-runtime-option>
   ```

6. Save the `portlet.xml` file.

59.3.5 How to Use Public Render Parameters in JSR 286 Portlets

Public render parameters enable portlets to share parameter values, allowing a form of interportlet communication.

For example, if a Map portlet and a Weather portlet are both configured to use a Zipcode public render parameter, entering a zip code in the Map portlet updates the same parameter value in the Weather portlet.

Any public render parameters supported by a portlet must be declared in the application section of the portlet deployment descriptor file (`portlet.xml`). Public render parameters defined at the application level in this way are available to all the portlets in the application.

Individual portlets within the application can then specify which of these public render parameters they want to use.

If you declare and define public render parameters as described below, interportlet communication happens automatically, without any further coding required on your part. For more information, see Section 63.5.3, "What You May Need to Know About Interportlet Communication."

This section includes the following topics:

- Section 59.3.5.1, "Declaring a Public Render Parameter at the Application Level"
- Section 59.3.5.2, "Defining a Public Render Parameter for a Portlet"
- Section 59.3.5.3, "Example: Public Render Parameters"

For more information about public render parameters and how to implement them, see the JSR 286 specification at:

`http://jcp.org/en/jsr/detail?id=286`

59.3.5.1 Declaring a Public Render Parameter at the Application Level

For a public render parameter to be available to a portlet, it must first be declared in the application section of the portlet deployment descriptor file (`portlet.xml`).

To define a public render parameter at the application level:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Parameters** tab.

3. Click the **Add** icon to create a new public render parameter.

4. From the drop-down list, select whether you are specifying a fully qualified name (QName) for the parameter, or just the local part of the name.

   - **Qualified Name**—A *QName* uniquely identifies the public render parameter across applications by specifying a namespace for the parameter as well as a local name. Within the portlet code, a public render parameter is accessed by its identifier, which identifies the parameter uniquely within the application. However, a page typically contains multiple portlets which may come from different applications. Using QNames ensures that public render parameters from one portlet do not unintentionally interfere with the other portlets on a page regardless of where those portlets come from.

   - **Unqualified Name**—If the namespace for the parameter is the same as the application default namespace, you can omit the namespace when defining the parameter by specifying an unqualified name. If the application default namespace has not been defined, a parameter with an unqualified name uses the XML default namespace.

     Tip: To check whether an application default namespace has been defined, click the **Application** tab and see if a value has been entered in the **Default Namespace** field.

5. Enter a name for the parameter.

   - If you selected **Qualified Name—**in the **Namespace** field, enter the namespace for the parameter and in the **Name** field, enter the local part of the parameter name.

   - If you selected **Unqualified Name—**in the **Name** field, enter the local part of the parameter name. The parameter uses the application default namespace as the namespace for the parameter (or the XML default namespace if no default namespace is defined for the application).

6. In the **Identifier** field, enter a name to identify the public render parameter within the application.

   The identifier must be unique within the application and is used to identify the parameters used by a portlet and in the portlet code to access the parameter. Using the identifier means that portlet developers do not need to be aware of the parameter's fully qualified name; they simply need to know the simpler application-specific identifier.

7. In the **Description** field, enter a description for the public render parameter. The description should provide enough information so that portlet developers can determine how to use this parameter in their portlets.

8. (Optional) In the Aliases panel, you can provide a list of aliases so that the parameter can accept values from other public render parameters even if they have different QNames.

   a. Click the **Create** icon to create a new alias for the parameter.

b. In the **Namespace** field, enter the namespace of the parameter to use for the alias.

c. In the **Name** field, enter the local part of the parameter to use for the alias.

> **Tip:** When creating aliases for public render parameters, it is a good idea to set up reciprocal aliases. So if a parameter in portlet A has an alias to a parameter in portlet B, you should also, if possible, create an alias for the parameter in portlet B to the parameter in portlet A.

9. The public render parameter is added to the application definition section of the `portlet.xml` file:

```
<portlet-app ...>
  <portlet>...</portlet>
  <portlet>...</portlet>
  ...
  <public-render-parameter>
     <description>Parameter for zip code</description>
     <identifier>Zip</identifier>
     <qname xmlns:x="http://example.com/params">x:Zip</qname>
     <alias xmlns:x="http://example.com/params">x:ZipCode</alias>
  </public-render-parameter>
  ...
</portlet-app>
```

10. Save the `portlet.xml` file.

59.3.5.2 Defining a Public Render Parameter for a Portlet

If you want a portlet to support a public render parameter, add it to the portlet.

To add a public render parameter to a portlet:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. If the public render parameter has not yet been defined within the Portlet Producer application, you must do this first.

   For more information, see Section 59.3.5.1, "Declaring a Public Render Parameter at the Application Level."

3. Click the **Portlets** tab and select the portlet in which you want to use the public render parameter.

4. Click the **Parameters** tab.

   In the Publishing Events panel, the **Available** list shows all the portlet events that have been defined for the application.

5. Click the **Parameters** tab.

   In the Public Render Parameters panel, the **Available** list shows all the public render parameters that have been defined for the application.

6. Select the public render parameter that you want to use in the portlet and click the **Add** icon to move it to the **Selected** list.

   This adds the public render parameter to the portlet definition in `portlet.xml`:

```
<portlet-app ...>
```

```
  <portlet id="1234567890">
    ...
    <supported-public-render-parameter>Zip</supported-public-render-parameter>
    ...
  </portlet>
  ...
  <public-render-parameter>
    <identifier>Zip</identifier>
    <name>Zip</name>
  </public-render-parameter>
  ...
</portlet-app>
```

7. Save the `portlet.xml` file.

8. You can now use this public render parameter in the code for your portlet.

59.3.5.3 Example: Public Render Parameters

The following example shows how to use public parameters to link the behavior of two portlets using parameters with different names. In the example, we take a generic Parameter Form portlet that allows us to update public render parameters, and show how that can be linked to a Stock Price portlet that renders stock prices, taking the stock symbol from a public render parameter. The generic name of the parameter from the Parameter Form portlet (`parameter1`) does not match the name of the parameter in the Stock Price portlet (`stocksymbol`), so the developer of the Stock Price portlet uses an alias to provide a link between the two parameters.

Example 59–2 shows an excerpt from the `portlet.xml` file for the portlet producer application that contains the Parameter Form portlet. The portlet producer application defines a public render parameter (`parameter1`) that is supported by the Parameter Form portlet.

Example 59–2 Parameter Definition for the Parameter Form Portlet

```
<portlet-app ...>
  <portlet id="1234567890">
    ...
    <supported-public-render-parameter>
      parameter1
    </supported-public-render-parameter>
    ...
  </portlet>
  ...
  <public-render-parameter>
    <description xml:lang="en">First parameter set by portlet</description>
    <identifier>parameter1</identifier>
    <qname xmlns:op="http://xmlns.oracle.com/portlet/oracle-portlet-app">
      op:parameter1
    </qname>
  </public-render-parameter>
  ...
</portlet-app>
```

The code for the Parameter Form portlet sets the value of the `parameter1` portlet when a value is entered in the portlet (Example 59–3).

Example 59–3 Parameter Processing for the Parameter Form Portlet

```
public void processAction(ActionRequest request,
                              ActionResponse actionResponse)
            throws PortletException, IOException
{
  //
  //  Read the new parameter value posted in the portlet form
  //
  String param1 = actionResponse.getParameter("form_param1");

  //
  // Set the new parameter values. These will be intepreted by the
  // container as public render parameters as the names match the names
  // of the declared parameters.
  //
  actionResponse.setRenderParameter("parameter1", param1);
}
```

Example 59–4 shows an excerpt from the `portlet.xml` file for the portlet producer application that contains the Stock Price portlet. This portlet producer application also defines a public render parameter (`stocksymbol`) that is supported by the Stock Price portlet. For the `stocksymbol` parameter to link to the Parameter Form portlet's parameter, an alias for `parameter1` is added.

Example 59–4 Parameter Definition for the Stock Price Portlet

```
<portlet-app ...>
  <portlet>
    ...
    <supported-public-render-parameter>
      stocksymbol
    </supported-public-render-parameter>
    ...
  </portlet>
  ...
  <public-render-parameter>
    <description xml:lang="en">The stock symbol</description>
    <identifier>stocksymbol</identifier>
    <qname xmlns:s="http://www.oracle.com/stocks">s:stocksymbol</qname>
    <!-- Alias matches the Parameter Form portlet's first parameter name -->
    <alias xmlns:op="http://xmlns.oracle.com/portlet/oracle-portlet-app">
      op:parameter1
    </alias>
  </public-render-parameter>
  ...
</portlet-app>
```

The code for the Stock Price portlet reads the value of the public render parameter posted by the Parameter Form portlet (Example 59–5).

Example 59–5 Parameter Processing for the Stock Price Portlet

```
public void doView(RenderRequest request, RenderResponse response)
            throws PortletException, IOException
{
  response.setContentType("text/html; charset=UTF-8");
  PrintWriter out = response.getWriter();

  // Retrieve any values for the public render parameter.
  // The parameter is looked up in the request using its identifier in portlet.xml
  // (not it's name or alias).
  String symbol = request.getParameter("stocksymbol");
```

```
    ...
}
```

When these two portlets are dropped onto the same page, they are automatically linked together. Entering a value in the first parameter field of the Parameter Form portlet causes the Stock Price portlet to be updated with the new value.

59.3.6 How to Use Portlet Events in JSR 286 Portlets

Portlet events are a JSR 286 feature that enables interportlet communication by providing portlets with the ability to respond to actions that occur outside of the portlet itself, for example an action performed on the page that contains the portlet or on another portlet on the same page. Portlet events can be cascaded so that a portlet may respond to an event by triggering an event of its own, which in turn affects other portlets on the page.

Any portlet events supported by a portlet must be declared in the application section of the portlet deployment descriptor (`portlet.xml`). Portlet events defined at the application level in this way are available to all the portlets in the application.

Individual portlets within the application can then specify which of these portlet events they want to use. Portlets can declare events that they are interested in receiving, called *processing events*, and events that they trigger, called *publishing events*.

If you declare and define portlet events as described below, interportlet communication happens automatically, without any further coding required on your part. For more information, see Section 63.5.3, "What You May Need to Know About Interportlet Communication."

This section includes the following topics:

- Section 59.3.6.1, "Declaring a Portlet Event at the Application Level"
- Section 59.3.6.2, "Defining a Processing Event for a Portlet"
- Section 59.3.6.3, "Defining a Publishing Event for a Portlet"
- Section 59.3.6.4, "Example: Portlet Events"

For more information about portlet events and how to implement them, see the JSR 286 specification at:

`http://jcp.org/en/jsr/detail?id=286`

59.3.6.1 Declaring a Portlet Event at the Application Level

For a portlet event to be available to a portlet, it must first be declared in the application section of the portlet deployment descriptor file (`portlet.xml`).

To define a portlet event at the application level:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Events** tab.
3. Click the **Add** icon to create a new portlet event.
4. From the drop-down list, select whether you are specifying a fully qualified name (QName) for the portlet event, or just the local part of the name.

- **Qualified Name**—A *QName* uniquely identifies the portlet event across applications by specifying a namespace for the event as well as a local name. A page typically contains multiple portlets which may come from different applications. Using QNames ensures that portlet events from one portlet do not unintentionally interfere with the other portlets on a page regardless of where those portlets come from.
- **Unqualified Name**—If the namespace for the portlet event is the same as the application default namespace, you can omit the namespace when defining the event by specifying an unqualified name. If the application default namespace has not been defined, a portlet event with an unqualified name uses the XML default namespace.

  Tip: To check whether an application default namespace has been defined, click the **Application** tab and see if a value has been entered in the **Default Namespace** field.

5. Enter a name for the portlet event.
   - If you selected **Qualified Name**—In the **Namespace** field, enter the namespace for the portlet event and in the **Name** field, enter the local part of the event name.
   - If you selected **Unqualified Name**—In the **Name** field, enter the local part of the portlet event name. The event uses the application default namespace as the namespace for the event (or the XML default namespace if no default namespace is defined for the application).
6. In the **Payload Type** field, enter or browse for the data type of the payload provided by the portlet event.
7. In the **Description** field, enter a description for the portlet event.
8. (Optional) In the Aliases panel, you can provide a list of aliases so that a portlet event can be recognized by the portlet even if it has a different QName from the one defined by the portlet.

   a. Click the **Create** icon to create a new alias for the portlet event.

   b. In the **Namespace** field, enter the namespace of the portlet event to use for the alias.

   c. In the **Name** field, enter the local part of the portlet event to use for the alias.
9. The portlet event is added to the application definition section of the `portlet.xml` file:

```
<portlet-app ...>
  <portlet>...</portlet>
  <portlet>...</portlet>
  ...
  <event-definition id="latLong">
    <qname xmlns:x="http://xmlns.oracle.com/portlet/EventSample">
      x:latLong
    </qname>
    <value-type>portlet.LatLong</value-type>
  </event-definition>
  ...
</portlet-app>
```

10. Save the `portlet.xml` file.

59.3.6.2 Defining a Processing Event for a Portlet

If you want a portlet to listen for a particular portlet event, define it as a processing event.

To add a processing event to a portlet:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. If the portlet event has not yet been defined within the Portlet Producer application, you must do this first.

   For more information, see Section 59.3.6.1, "Declaring a Portlet Event at the Application Level."

3. Click the **Portlets** tab and select the portlet in which you want to use the portlet event.

4. Click the **Events** tab.

   In the Processing Events panel, the **Available** list shows all the portlet events that have been defined for the application.

5. Select the portlet event that you want to use in the portlet and click the **Add** icon to move it to the **Selected** list.

   This adds the portlet event as a processing event to the portlet definition in `portlet.xml`:

```
<portlet-app ...>
  <portlet id="map">
    ...
    <supported-processing-event id="latLong">
      <qname xmlns:x="http://xmlns.oracle.com/portlet/EventSample">
        x:latLong
      </qname>
    </supported-processing-event>
    ...
  </portlet>
  ...
  <event-definition id="latLong">
    <qname xmlns:x="http://xmlns.oracle.com/portlet/EventSample">
      x:latLong
    </qname>
    <value-type>portlet.LatLong</value-type>
  </event-definition>
  ...
 </portlet-app>
```

6. Save the `portlet.xml` file.

   You can now use this portlet event in the code for your portlet.

59.3.6.3 Defining a Publishing Event for a Portlet

If you want a portlet to trigger a particular portlet event, define it as a publishing event.

To add a publishing event to a portlet:

1. Open the Overview Editor for the `portlet.xml` file.

For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. If the portlet event has not yet been defined within the Portlet Producer application, you must do this first.

   For more information, see Section 59.3.6.3, "Defining a Publishing Event for a Portlet."

3. Click the **Portlets** tab and select the portlet in which you want to use the portlet event.

4. Click the **Events** tab.

   In the Publishing Events panel, the **Available** list shows all the portlet events that have been defined for the application.

5. Select the portlet event that you want to use in the portlet and click the **Add** icon to move it to the **Selected** list.

   This adds the portlet event as a publishing event to the portlet definition in `portlet.xml`:

```
<portlet-app ...>
  <portlet id="locations">
    ...
    <supported-publishing-event>
      <qname xmlns:x="http://xmlns.oracle.com/portlet/EventSample">
        x:latLong
      <qname>
    </supported-publishing-event>
    ...
  </portlet>
  ...
  <event-definition id="latLong">
    <qname xmlns:x="http://xmlns.oracle.com/portlet/EventSample">
      x:latLong
    </qname>
    <value-type>portlet.LatLong</value-type>
  </event-definition>
  ...
 </portlet-app>
```

6. Save the `portlet.xml` file.

   You can now use this portlet event in the code for your portlet.

59.3.6.4 Example: Portlet Events

The following example shows how to use portlet events to use the actions in one portlet to affect another portlet on the same page. In the example, we have a portlet, the Department Locations portlet, that lists the geographical locations of a company's various offices. The example shows how that portlet can be linked to another portlet, the Map portlet, which displays a Google map of the location selected in the Department Locations portlet.

Example 59–6 shows an excerpt from the `portlet.xml` file for the portlet producer application that contains the two portlets. The portlet producer application defines a portlet event (`latLong`) that is supported by the two portlets. The payload of the event is an object that encapsulates the latitude and longitude of a location.

Example 59–6 Portlet Event Definition

```
<event-definition id="latLong">
  <qname xmlns:x="http://xmlns.oracle.com/portlet/EventSample">x:latLong</qname>
  <value-type>portlet.LatLong</value-type>
</event-definition>
```

Example 59–7 shows that the Department Locations portlet uses the `latLong` event as a publishing event. That is, it raises the event under particular circumstances.

Example 59–7 Publishing Event Definition for the Location Portlet

```
<portlet id="locations">
  ...
  <supported-publishing-event>
    <qname xmlns:x="http://xmlns.oracle.com/portlet/EventSample">x:latLong<qname>
    </supported-publishing-event>
    ...
</portlet>
```

The Department Locations portlet raises the `latLong` event in its `processAction` method if a location is selected in the portlet (Example 59–8). It also sets the payload of the event to the latitude and longitude of the selected location.

Example 59–8 Event Processing for the Department Locations Portlet

```
public void processAction(ActionRequest request, ActionResponse response)
    throws PortletException
  {
    String locationId = request.getParameter("locationId");
    Location location = getLocation(Integer.parseInt(locationId));

    if (location != null)
    {
      // QName matches the event declared as a supported-publishing-event in
      // portlet.xml for this portlet.

      // LatLong event used by the Map portlet.
      response.setEvent(new QName("http://xmlns.oracle.com/portlet/EventSample", "latLong"),
                        new LatLong(location.getLatitude(), location.getLongitude()));

    }
 }
```

Example 59–9 shows that another portlet, the Map portlet, also uses the `latLong` event, but this time as a processing event. That is, it listens out for the event and takes a particular action if the event is raised elsewhere on the page.

Example 59–9 Processing Event Definition for the Map Portlet

```
<portlet id="map">
  ...
  <supported-processing-event id="latLong">
    <qname xmlns:x="http://xmlns.oracle.com/portlet/EventSample">x:latLong</qname>
  </supported-processing-event>
  ...
</portlet>
```

The `processEvent` method for the Map portlet receives the `latLong` event and uses the payload from that event to set the `LAT_LONG_PARAMETER` render parameter, which the portlet uses during rendering to determine the location to display in the Google map (Example 59–10).

Example 59–10 Event Processing for the Map Portlet

```
@Override
  public void processEvent(EventRequest request,
                           EventResponse response)
    throws PortletException, IOException
  {
    response.setRenderParameters(request);

    Event event = request.getEvent();
    if (event.getName().equals("latLong"))
    {
      response.setRenderParameter(LAT_LONG_PARAMETER, event.getValue().toString());
    }
  }
```

Tip: In this case, the events used by the Department Locations and Map portlets have the same name (`latLong`). If the Map portlet listens for an event using a different name (for example, `geolocation`), the two portlets could still be automatically linked by defining an alias for the `geolocation` event in the `portlet.xml` file as follows:

```
<event-definition id="geolocation">
  <qname xmlns:x="http://xmlns.oracle.com/portlet/Map">
    x:geolocation
  </qname>
  <alias xmlns:x="http://xmlns.oracle.com/portlet/EventSample">
    x:latLong
  </alias>
  <value-type>portlet.LatLong</value-type>
</event-definition>
```

Note, however, that the payload type of the two events must be the same for automatic linking to work.

Note: For an event payload to be passed between portlets it must be possible to form an XML payload from event payload. For this to be possible one of the following must be true:

- The payload must have a JAXB binding, for example by adding the `XmlRootElement` annotation to the portlet class:

  ```
  package portlet;

  import java.io.Serializable;
  import javax.xml.bind.annotation.XmlRootElement;

  @XmlRootElement(namespace="http://xmlns.oracle.com/portlet/Even
  tSample")
  public class LatLong implements Serializable
  {
    private final double _latitude;
    private final double _longitude;
  ...
  ```

- The `allowEventPayloadsWithoutJAXBBindings` container runtime option must be set to `true` in `portlet.xml`.

  For more information, see Section 59.3.4, "How to Customize the Runtime Environment for JSR 286 Portlets."

59.3.7 How to Add Portlet Preferences to JSR 286 Portlets

Portlet preferences enable end users to personalize or customize portlets at runtime. Personalizations are visible only to the user that performs them; not to other users. Customizations are visible to all users who have not personalized the portlet.

By default, when you create a JSR 286 portlet using the JDeveloper wizard, a portlet preference is created to enable users to change the title of the portlet at runtime. You can create additional portlet preferences, either during portlet creation or by editing the `portlet.xml` file after portlet creation, to enable end users to make other modifications to the portlet at runtime.

The procedure below describes how to add a portlet preference to the `portlet.xml` file after portlet creation. For information about how to add a portlet preference during portlet creation, see Section 59.2.1, "How to Create a JSR 286 Java Portlet."

This section includes the following topics:

- Section 59.3.7.1, "Adding a Portlet Preference to a JSR 286 Portlet"
- Section 59.3.7.2, "Example: Simple Portlet Personalization"

59.3.7.1 Adding a Portlet Preference to a JSR 286 Portlet

To enable users to modify portlet behavior or content at runtime, you must create portlet preferences for those attributes of the portlet that you want users to be able to modify.

To add a portlet preference to a portlet:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Portlets** tab and select the portlet for which you want to add the portlet preference.
3. Click the **Advanced** tab.

   The Preferences panel lists any existing portlet preferences that exist for the portlet, for example, the `portletTitle` preference.
4. Click the **Add** icon to create a new portlet preference.
5. In the **Name** field, enter a name for the preference.

   The name must be unique within the portlet.
6. In the **Value** field, enter one or more default values for the preference.

   Separate multiple entries with commas.
7. Select **Read-only** if you do not want users to be able to update the value of the preference.

   The portlet preference is added to the application definition section of the `portlet.xml` file:

   ```
   <portlet-app ...>
     <portlet>...</portlet>
     <portlet>...</portlet>
     ...
     <portlet-preference>
       <name>portletTitle</name>
     </portlet-preference>
     <portlet-preference>
       <name>myPreference</name>
       <value>7</value>
     </portlet-preference>
     ...
   </portlet-app>
   ```
8. Save the `portlet.xml` file.

   You can now use this preference in your portlet code using the `getPreference` method.

   > **Tip:** If you want the preference to be translatable, you must add the appropriate key-value pairs to the resource bundle class.

59.3.7.2 Example: Simple Portlet Personalization

The following example provides a simple illustration of how you can enable personalization in portlets.

To add simple personalization to a portlet:

1. In JDeveloper, create a Portlet Producer application, accepting the default values.
2. Create a JSR 286 portlet, accepting the default values.
3. In the Application Navigator, expand the **Portlets** project.
4. Right-click `portlet.xml` and choose **Open**.
5. Click the **Portlets** tab and select **portlet1**.
6. Click the **Advanced** tab.
7. Click the **Add** icon to create a new portlet preference.

8. In the **Name** field, enter `portletContent`.
9. In the Application Navigator, right-click `view.jsp` and choose **Open.**
10. In the visual editor, click the **Source** tab and add the code indicated in bold in Example 59–11 to display the `portletContent` portlet preference:

Example 59–11 view.jsp Sample Code

```
<%@ page contentType="text/html"
    import="javax.portlet.*,java.util.*,Portlets.Portlet1,
    Portlets.resource.Portlet1Bundle"%>
<%@ taglib uri="http://java.sun.com/portlet" prefix="portlet"%>

<portlet:defineObjects/>
<%
String[] str = {"Portlet Content"};
PortletPreferences prefs = renderRequest.getPreferences();
str = prefs.getValues("portletContent",str);
for (int i=0; i<str.length; i++)
{
%><%=(i<str.length-1)?str[i]+", ":str[i]%><%}%>
```

11. In the Application Navigator, right-click `edit.jsp` and choose **Open.**

    Notice that the JSP consists of a form field, a form input field, and two form button fields.

12. In the visual editor, click the **Source** tab and add the code indicated in bold in Example 59–12 to implement a form field for users to enter a value for the `portletContent` customization preference:

Example 59–12 edit.jsp Sample Code

```
<%@ page contentType = "text/html; charset=windows-1252"
         pageEncoding = "windows-1252"
         import = "javax.portlet.*, java.util.*,
Portletenhance.Portletenhance,
Portletenhance.resource.PortletenhanceBundle"%>
@ <%@ taglib uri = "http://java.sun.com/portlet" prefix="portlet"%>
<portlet:defineObjects/>
<%
    PortletPreferences prefs = renderRequest.getPreferences();
    ResourceBundle res =
        portletConfig.getResourceBundle(renderRequest.getLocale());
%>
<form action="<portlet:actionURL/>" method="POST">
  <table border="0">
    <tr>
      <td width="20%">
        <p class="portlet-form-field" align="right">
          <%=  res.getString(PortletenhanceBundle.PORTLETCONTENT) %>
        </p>
      </td>
      <td width="80%">
        <input class="portlet-form-input-field"
               type="TEXT"
               name="<%= Portletenhance.PORTLETCONTENT_KEY %>"
               value="<%= Portletenhance.buildValue(prefs,
Portletenhance.PORTLETCONTENT_KEY) %>"
               size="20">
      </td>
    </tr>    <tr>
      <td width="20%">
        <p class="portlet-form-field" align="right">
          <%=  res.getString(PortletenhanceBundle.PORTLETTITLE) %>
        </p>
      </td>
      <td width="80%">
        <input class="portlet-form-input-field"
               type="TEXT"
               name="<%= Portletenhance.PORTLETTITLE_KEY %>"
               value="<%= prefs.getValue(Portletenhance.PORTLETTITLE_KEY,
res.getString("javax.portlet.title")) %>"
               size="20">
      </td>
    </tr>
    <%
    String[] str = {"Portlet Content"};
    str = prefs.getValues("portletContent",str);
%>
<tr><td width="20%">
<p class="portlet-form-field" align="right">
Content
</p>
</td><td width="80%">
<textarea rows="10" cols="60" class="portlet-form-input-field"
  name="portletContent"><%
for (int i=0; i<str.length; i++)
{%><%= (i<str.length-1) ? str[i]+", " : str[i] %><%}%>
</textarea>
</td></tr>
    <tr>
      <td colspan="2" align="center">
        <input class="portlet-form-button" type="submit"

name="<%=Portletenhance.OK_ACTION%>"

value="<%=res.getString(PortletenhanceBundle.OK_LABEL)%>">
        <input class="portlet-form-button" type="submit"

name="<%=Portletenhance.APPLY_ACTION%>"

value="<%=res.getString(PortletenhanceBundle.APPLY_LABEL)%>">
      </td>
    </tr>
  </table>
</form>
```

13. In the Application Navigator, right-click `Portlet1.java` and choose **Open.**

14. In the visual editor, click the **Source** tab and add the following two lines of code (indicated in bold) to the `processAction` method:

```
// Save the preferences.
PortletPreferences prefs = request.getPreferences();
String param = request.getParameter(PORTLETTITLE_KEY);
prefs.setValues(PORTLETTITLE_KEY, buildValueArray(param));
String contentParam = request.getParameter("portletContent");
if (contentParam != null)
{
  prefs.setValues("portletContent", buildValueArray(contentParam));
}
```

```
prefs.store();
```

When this portlet is available on a page, users can personalize it. The Edit mode of the portlet provides a **Portlet Content** field, where users can enter text. The text entered is then displayed as the content of the portlet.

59.3.8 How to Use Portlet Filters in JSR 286 Portlets

Portlet filters are a JSR 286 feature that enables you to alter the content of a portlet at runtime. A *portlet filter* is a reusable Java component that can transform the content of portlet requests and portlet responses. Filters do not generally create a response or respond to a request as portlets do, rather they modify or adapt the requests and responses.

This section includes the following topics:

- Section 59.3.8.1, "Adding a Portlet Filter to an Application"
- Section 59.3.8.2, "Applying a Portlet Filter to a Portlet"

For more information about portlet filters and how to implement them, see the JSR 286 specification at:

`http://jcp.org/en/jsr/detail?id=286`

59.3.8.1 Adding a Portlet Filter to an Application

For a portlet to be able to use a portlet filter, the filter must first be defined within the application.

To add a portlet filter to an application:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Filters** tab.

3. Click the **Add** icon to create a new portlet filter.

4. In the Create Portlet Filter dialog you can either create a new portlet filter, or select a previously created portlet filter:

   - To create a new portlet filter:

     a. Select **New Portlet Filter**.

     b. In the **Name** field, enter a name for the portlet filter.

        The name must be unique within the application and use only letters, numbers, and the underscore character.

     c. In the **Package** field, enter or browse for the package to contain the new filter class.

     d. Select one or more of the **Lifecycle Phase** check boxes to specify which of the `javax.portlet.filter` interfaces the filter class implements:

        Action—The filter class implements the `ActionFilter` interface

        Event—The filter class implements the `EventFilter` interface.

        Render—The filter class implements the `RenderFilter` interface.

        Resource—The filter class implements the `ResourceFilter` interface.

> **Tip:** When you create a new filter class using the Create Portlet Filter dialog, you can specify which of the filter interfaces the filter class implements. After the filter class has been created, you cannot add or remove filter interfaces through the Overview Editor. Instead, you must edit the source of the filter class directly to manually add or remove the interfaces and the `doFilter` methods defined for those interfaces.

- To select an existing portlet filter:

   a. Select **Choose from Existing Class**.

   b. Enter or browse for the filter class.

5. Click **OK**.

6. In the **Display Name** field, enter a more user-friendly name for the portlet filter.

7. In the **Description** field, enter a description for the portlet filter.

8. In the Initialization Parameters panel, you can specify initialization parameters that pass values to the `init()` method of the filter class.

   a. Click the **Add** icon to specify an initialization parameter for the portlet filter.

   b. In the **Name** field, enter the name of the initialization parameter.

   c. In the **Value** field, enter the value to pass to the initialization parameter.

   d. In the **Description** field, enter a description of the initialization parameter.

   The portlet filter is added to the application definition section of the `portlet.xml` file:

```
<portlet-app ...>
  <portlet>...</portlet>
  <portlet>...</portlet>
  ...
  <filter>
    <display-name>Test Filter</display-name>
    <filter-name>filter_1</filter-name>
    <filter-class>javaportlets.MyFilter</filter-class>
    <lifecycle>ACTION_PHASE</lifecycle>
    <lifecycle>RENDER_PHASE</lifecycle>
  </filter>
  ...
</portlet-app>
```

9. Save the `portlet.xml` file.

59.3.8.2 Applying a Portlet Filter to a Portlet

After the portlet filter has been defined in the application, you can then apply it to one or more portlets within the application. You can also specify the order in which portlet filters are applied to portlets.

To apply a portlet filter to a portlet:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Filter Mappings** tab.

3. Click the **Add** icon to add a row to the filter mappings table.
4. From the **Filter Name** drop-down list, select the portlet filter that you want to apply to the portlet.

   The drop-down list is populated with all the portlet filters that are defined in the `portlet.xml` file.
5. From the **Portlet Name** drop-down list, select the portlet to which you want to apply the portlet filter.

   The drop-down list is populated with all the portlets that are defined in the `portlet.xml` file.

   Alternatively, you can use wildcards to apply the portlet filter to more than one portlet. For example, you can enter `*` to apply the portlet filter to all the portlets in the application.

   The filter mapping is added to the application definition section of the `portlet.xml` file:

   ```
   <portlet-app ...>
     <portlet>...</portlet>
     <portlet>...</portlet>
     ...
     <filter>
       <display-name>My Filter</display-name>
       <filter-name>myFilter</filter-name>
       <filter-class>javaportlets.MyFilter</filter-class>
       <lifecycle>ACTION_PHASE</lifecycle>
       <lifecycle>RENDER_PHASE</lifecycle>
     </filter>
     <filter-mapping>
       <filter-name>myFilter</filter-name>
       <portlet-name>myPortlet</portlet-name>
     </filter-mapping>
     ...
   </portlet-app>
   ```
6. Use the **Top**, **Up**, **Down**, and **Bottom** icons to order the portlet filters in the `portlet.xml` file. The order of the portlet filters determines the order in which the filters are applied to the portlets.

   > **Note:** Portlet filters can be mapped to multiple portlets. If you have multiple portlets mapped to (sharing) a filter, arbitrarily changing the filter order can produce undesired side effects. That is, if you change the order in which filters are applied in one portlet, the reordering will apply to all other portlets that share the filter.
7. Save the `portlet.xml` file.

59.3.9 How to Implement Interportlet Communication Across Different Pages

Generally, interportlet communication occurs between portlets that are displayed on the same page. However, it is possible to communicate between portlets on different pages, as shown in the following example.

To implement interportlet communication across different pages:

1. Create a custom data control and expose a method to capture the event that initiates the interportlet communication.

```
public void handleEvent(Object payload) {
    if(!(payload instanceof HashMap)){
            throw new IllegalArgumentException("Payload not a 
HashMap<String,String>.");
    }
        String p1 = "",p2 = "",p3 = "";
        HashMap map = (HashMap) payload;
        String[] pa1 = (String[])map.get("parameter1");
        String[] pa2 = (String[])map.get("parameter2");
        String[] pa3 = (String[])map.get("parameter3");
        if(pa1 != null)
            p1 = pa1[0];
        if(pa2 != null)
            p2 = pa2[0];
        if(pa3 != null)
            p3 = pa3[0];
        //Only forward when all 3 parameters have values
        if(!p1.equals("") && !p2.equals("") && !p3.equals("")){
            HashMap<String,String> paramMap = new HashMap<String,String>();
            paramMap.put("parameter1", p1);
            paramMap.put("parameter2", p2);
            paramMap.put("parameter3", p3);
            Map<String, Object> pageFlowScope = 
ADFContext.getCurrent().getPageFlowScope();
            pageFlowScope.put("paramMap", paramMap);
            //now the navigation
            FacesContext fctx = FacesContext.getCurrentInstance();
            Application application = fctx.getApplication();
            NavigationHandler navHandler = application.getNavigationHandler();
            navHandler.handleNavigation(fctx, null, "target");
        }
    }
```

2. Add this method to the page bindings and create an event from it.

```
<methodAction id="handleEvent" InstanceName="EventDataControl.dataProvider"
                  DataControl="EventDataControl" RequiresUpdateModel="true"
                  Action="invokeMethod" MethodName="handleEvent"
                  IsViewObjectMethod="false">
      <NamedData NDName="payload" NDType="java.lang.Object"/>
      <events xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
        <event name="handleEvent"/>
      </events>
   </methodAction>
```

3. Wire the event to the portlet event. This ensures that the payload of the event triggered by the portlet is passed to the custom method.

```
<eventMap xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
    <event name="ParameterFormPortlet1_1_Event">
      <producer region="*">
        <consumer region="" handler="handleEvent" handleCondition="">
          <parameters>
            <parameter name="payload" value="#{payLoad}"/>
          </parameters>
        </consumer>
      </producer>
    </event>
  </eventMap>
```

4. Create a `HashMap` to pass the payload to the `pageFlowScope` of the page that contains the second portlet.

```
HashMap<String,String> paramMap = new HashMap<String,String>();
 paramMap.put("parameter1", p1);
 paramMap.put("parameter2", p2);
 paramMap.put("parameter3", p3);
 Map<String, Object> pageFlowScope =
ADFContext.getCurrent().getPageFlowScope();
 pageFlowScope.put("paramMap", paramMap);
```

5. Define a navigation rule in the `faces-config.xml` file to navigate to the target page.

```
FacesContext fctx = FacesContext.getCurrentInstance();
 Application application = fctx.getApplication();
 NavigationHandler navHandler = application.getNavigationHandler();
 navHandler.handleNavigation(fctx, null, "target");
```

6. Pass the parameters in the `pageFlowScope` to the target portlet using the `parameterMap` attribute.

```
<portlet id="ParameterDisplayPortlet1_1"
             portletInstance="/oracle/adf/portlet/PortletExample/ap/Ei2default_
354ce3c1_013d_1000_8002_c0a83801a490"
            class="oracle.adf.model.portlet.binding.PortletBinding"
             retainPortletHeader="false"
             listenForAutoDeliveredPortletEvents="true"
             listenForAutoDeliveredParameterChanges="true"
             xmlns="http://xmlns.oracle.com/portlet/bindings"
             parameterMap="#{pageFlowScope.paramMap}">
      <events>
        <event eventType="ParametersChange"
               name="ParameterDisplayPortlet1_1_Event"/>
      </events>
    </portlet>
```

Tip: You can also create a single generic `eventHandler` and add it to the page template. By adding a method binding in the page template, this is available on all pages. By using a wildcard for the publisher, you can also make sure that it listens to all events with a specific name.

For more information and to download a sample application, see the blog entry at:

`http://www.ateam-oracle.com/inter-portlet-communication-between-pages/`

59.3.10 How to Enhance JSR 286 Portlet Performance with Caching

When you have completed the basic functionality of your portlet, you may want to turn your attention to portlet performance.

Caching is a common technique for enhancing the performance of web sites that include a great deal of dynamic content. JSR 286 portlets support expiry-based and validation-based caching.

For more information about caching, see Section 57.4.5, "Portlet Performance."

This section includes the following topics:

- Section 59.3.10.1, "Implementing Expiry-Based Caching in JSR 286 Portlets"

- Section 59.3.10.2, "Implementing Validation-Based Caching in JSR 286 Portlets"

59.3.10.1 Implementing Expiry-Based Caching in JSR 286 Portlets

You can choose to implement expiry-based caching when you first create a portlet using the Create JSR 286 Portlet Wizard. However, during the initial development of a portlet, you may prefer to turn portlet caching off and implement it later in the development cycle when the portlet content becomes more stable. You may also want to edit the expiration period, or change the cache scope.

To implement expiry-based caching:

1. Open the Overview Editor for the `portlet.xml` file.

   For more information, see Section 59.3.1, "How to Edit the Portlet Deployment Descriptor File."

2. Click the **Portlets** tab and select the portlet for which you want to implement expiry-based caching.

3. Click the **Advanced** tab.

4. In the Cache Management panel, select **Cache Portlet**.

   > **Note:** To disable portlet caching, deselect **Cache Portlet**. This sets the cache expiration period to `0`, meaning that the cached content is always expired.

5. Select the **Cache Scope**:

   - Select **Public** to share the cached content across users
   - Select **Private** if the cached content should not be shared across users.

6. Specify the cache expiration period:

   - Select **Cache Content Never Expires** to set the cache expiration period to -1. This means that the cached content never expires and the content is always retrieved from the cache. Use this option if you are confident that the portlet contains static content that is unlikely to change. Setting this option results in the following code being added to the `portlet.xml` file:

     ```
     <portlet>
       ...
       <expiration-cache>-1</expiration-cache>
       ...
     </portlet>
     ```

   - Select **Cache Content Expires After** to expire the cached portlet content after a specified number of seconds. Enter the expiration period (*n*), in seconds, in the adjacent field. Setting this option results in the following code being added to the `portlet.xml` file:

     ```
     <portlet>
       ...
       <expiration-cache>n</expiration-cache>
       ...
     </portlet>
     ```

7. Save the `portlet.xml` file.

59.3.10.2 Implementing Validation-Based Caching in JSR 286 Portlets

Implementation of validation-based caching takes place after the initial portlet creation and requires hand coding.

Example 59–13 shows how a `GenericPortlet` would typically implement its `doView()` method such that the consumer caches the markup using validation-based caching. The example also shows how expiry-based caching can be defined programmatically (using the `CacheControl.setExpirationTime()` method) and used in conjunction with validation-based caching to further reduce the load on the producer. This would work equally well for `serveResource()`.

Example 59–13 A JSR 286 Portlet Implementing Validation-Based Caching

```
protected void doView (RenderRequest request, RenderResponse response)
  throws PortletException, IOException
{
  CacheControl cacheControl = response.getCacheControl();
  String eTag = request.getETag();
  if (isMarkupStillValid(eTag))
  {
    // Wait 30 seconds before checking ETag again
    cacheControl.setExpirationTime(30);

    // Tell consumer to use its cached content
    cacheControl.setUseCachedContent(true);
    return;
  }

  // ETag not valid so set a new one ...

  // Define a new ETag
  cacheControl.setETag(generateETag(...));

  // Wait 60 seconds before checking ETag again
  cacheControl.setExpirationTime(60);

  // ... and generate fresh portlet markup
  createMarkup(request, response);
}

private boolean isMarkupStillValid(String eTag)
{
  if (eTag == null)
  {
    return false; // No ETag was supplied
  }

  // Perform portlet specific checks for the consumer's cached
  // copy of the markup still being valid based on the given ETag
  ...
}

private String generateETag(...)
{
  // Portlet specific code to generate an ETag, for example, a hash
  // of the data on which the portlet's markup is based
  ...

  return eTag;
}
```

For more information about validation-based caching in JSR 286 portlets, see the JSR 286 specification at:

http://jcp.org/en/jsr/detail?id=286

59.3.11 How to Implement Rewritten URLs for Resource Proxy

Resource proxying is the standard way to retrieve resources with WSRP. To avoid problems with URLs within your portlet, you can set a flag to rewrite all of the URLs within a specified resource. For example, if you have an HTML fragment that contains URLs, then you could set this flag to rewrite its URLs taking into account the WSRP resource proxying.

To indicate that URLs should be rewritten, set the `PortletRequest` attribute, `oracle.portlet.server.resourceRequiresRewriting`, to `true`. For example, you might include code similar to the excerpt in Example 59–14 to use resource proxying for a URL that you are encoding. Encapsulate this code within a method to avoid repeating it for every URL individually.

Example 59–14 Resource Proxy for WSRP

```
request.setAttribute("oracle.portlet.server.resourceRequiresRewriting",
     Boolean.TRUE);
String url = response.encodeURL(pathToResourceForRewriting);
request.removeAttribute("oracle.portlet.server.resourceRequiresRewriting");
```

If you do not specifically set `oracle.portlet.server.resourceRequiresRewriting`, then it defaults to `false`, meaning that URLs are not rewritten. You must explicitly activate the feature by setting this attribute to `true`.

You can use the `defaultProxiedResourceRequiresWsrpRewrite` container runtime option to specify the default WSRP `requiresRewrite` flag to use. The option specified by this container runtime option (which is set to `true` by default) is used unless overridden by the request attribute. For more information, see "com.oracle.portlet.defaultProxiedResourceRequiresWsrpRewrite."

59.3.12 How to Implement Stateless Resource Proxying

If you have out of protocol resources that do not require rewriting, you may want to use stateless resource proxying. Stateless resource proxying means that the URLs returned to the browser do not require portlet IDs or any other contextual information. This increases the cache hit ratio for such resources. You might find stateless resource proxying useful for functionality such as static JavaScript files, static images, and so on.

To indicate that stateless proxying is required, set the `PortletRequest` attribute `oracle.portlet.server.useStatelessProxying` to `true`. For example, you might include code similar to the excerpt in Example 59–15 to use stateless proxying for a URL that you are encoding. Encapsulate this code within a method to avoid repeating it for every URL individually.

Example 59–15 Stateless Resource Proxying

```
request.setAttribute("oracle.portlet.server.useStatelessProxying", Boolean.TRUE);
String url = response.encodeURL(pathToResource);
request.removeAttribute("oracle.portlet.server.useStatelessProxying");
```

If you do not specifically set `oracle.portlet.server.useStatelessProxying`, it defaults to `false`. You must explicitly activate the feature by setting this attribute to `true`.

59.3.13 How to Implement Security for JSR 286 Portlets

You can secure JSR 286 portlets that are deployed to a WSRP producer by configuring security at the WSRP producer end and the client end. For information about securing a JSR 286 portlet through its WSRP producer, see Section 74.17, "Securing Identity Propagation Through WSRP Producers with WS-Security."

59.3.14 How to Manage the Persistence Store for JSR 286 Portlets

The portlet persistence store is used for persisting consumer registration handles and portlet preference data. Portlet producers can use one of three types of persistence store:

- **Consumer**—Ties the producer metadata to the consumer application. This is the recommended method.
- **Database**—Persists data using a relational database. This is mainly provided for backward compatibility but may be useful if there is likely to be a large number of customizations.
- **File**—Persists data using the file system. This is provided for backward compatibility. You should not use a file based persistence store in your production environment as it does not support multi-tier or high availability environments. You may, however, want to use a file based persistence store while testing your application using Integrated WLS.

For more information, see Section 57.4.4, "Portlet Personalization and Customization."

This section includes the following topics:

- Section 59.3.14.1, "Setting Up a Persistence Store for a WSRP Producer"
- Section 59.3.14.2, "Migrating a WSRP Producer Persistence Store"
- Section 59.3.14.3, "Enabling Java Object Cache for Database Persistence Store Access"

59.3.14.1 Setting Up a Persistence Store for a WSRP Producer

WSRP portlet producers use a JNDI variable (`persistentStore`) to determine which type of persistence store to use. When you create a portlet for the first time in an application, by default this variable is set to `Consumer`. You can change the value of this variable in the `web.xml` file of the portlet producer application.

> **Note:** If you create a portlet in an application that already contains other portlets, the existing persistence store setting is maintained.

If you use a File persistence store, you must also use the `fileStoreRoot` JNDI variable to specify the path to the root directory to be used by the persistence store.

Table 59–2 lists and describes the JNDI variables used to specify the persistence store for WSRP producers.

Table 59–2 WSRP Producer Database Preference Store-Related JNDI Variable

Variable Name	Variable Value	Description

`oracle/portal/wsrp/server/persistentStore`	`Database`
	`File`
	`Consumer`
		Determines which data store (File, Database, or Consumer) is used for persisting a portlet producer application's consumer registration handles and portlet preferences.

`oracle/portal/wsrp/server/fileStoreRoot`	`portletdata`	Defines the path to the root directory to be used by the file preference store. Absolute paths are interpreted relative to the file system root. Relative paths are interpreted relative to the *`WC_ORACLE_HOME`*`/portal` directory. Note that all producers running within the same WebLogic Server must use the same path for this variable. Otherwise, you get a `Portlet unavailable` error for some portlets.

To set up the persistence store for a WSRP portlet producer:

1. In JDeveloper, open the portlet producer application for which you want to set up the persistence store.
2. Expand the portlet project (for example, **Portlets**).
3. Expand the **Web Content** node and then the **WEB-INF** node.
4. Right-click **web.xml** and choose **Open**.
5. Click the **Source** tab.
6. To specify a Database persistence store, add the following code:

```
<env-entry>
   <env-entry-name>oracle/portal/wsrp/server/persistentStore</env-entry-name>
   <env-entry-type>java.lang.String</env-entry-type>
   <env-entry-value>Database</env-entry-value>
</env-entry>
```

   To specify a File-based persistence store, add the following code:

```
<env-entry>
  <env-entry-name>oracle/portal/wsrp/server/persistentStore</env-entry-name>
  <env-entry-type>java.lang.String</env-entry-type>
  <env-entry-value>File</env-entry-value>
</env-entry>
<env-entry>
  <env-entry-name>oracle/portal/wsrp/server/fileStoreRoot</env-entry-name>
  <env-entry-type>java.lang.String</env-entry-type>
  <env-entry-value>myPrefStore</env-entry-value>
</env-entry>
```

   To specify a Consumer persistence store, add the following code:

```
<env-entry>
   <env-entry-name>oracle/portal/wsrp/server/persistentStore</env-entry-name>
   <env-entry-type>java.lang.String</env-entry-type>
```

```
    <env-entry-value>Consumer</env-entry-value>
</env-entry>
```

7. Save the `web.xml` file.

8. Restart your WebLogic Server.

59.3.14.2 Migrating a WSRP Producer Persistence Store

If you want to change the type of persistence store used by your portlet producer, for example when moving from a testing to production environment, you can migrate the existing data from the old to the new persistence store.

This section includes the following topics:

- Section 59.3.14.2.1, "Migrating a Database or File-Based Persistence Store"
- Section 59.3.14.2.2, "Migrating to or from a Consumer Persistence Store"
- Section 59.3.14.2.3, "Moving a WSRP Portlet Producer"

59.3.14.2.1 Migrating a Database or File-Based Persistence Store The WSRP portlet producer persistence store migration utility, `PersistenceMigrationTool`, enables you to migrate existing data between Database and File-based persistence stores (for example, from a File-based persistence store used for testing to a production Database persistence store). This utility also enables upgrading users to ensure that their existing locale-specific portlet preference data uses a naming format compatible with the latest JPS release. You can also use this utility to migrate between source and destination stores of the same type, enabling data to be moved from one database store to another.

> **Note:** There are several libraries that must be referenced in the classpath when running the `PersistenceMigrationTool` utility:
>
> - `wcs-producer-spi.jar`
> - `portlet-utils.jar`
> - `portlet-producer-container-common.jar`
> - `portlet-producer-container-persistence.jar`
> - `oracle-portlet-api.jar`
> - `wsrp-container.jar`
> - `oracle-portlet-tags.jar`
> - `ojdbc6.jar`
>
> The `ojdbc6.jar` library referenced in the classpath must be the same as the one used by your database.

To migrate a database or file-based persistence store:

1. Ensure that the appropriate libraries are referenced in the classpath:

```
./java  -classpath
ORACLE_COMMON_HOME/webcenter/modules/com.bea.wsrp_
10.3.2.0/system/wcs-producer-spi.jar:
ORACLE_COMMON_HOME/webcenter/modules/oracle.portlet.server_
11.1.1/portlet-utils.jar:
ORACLE_COMMON_HOME/webcenter/modules/oracle.webcenter.framework_
```

```
11.1.1/portlet-producer-container-common.jar:
ORACLE_COMMON_HOME/webcenter/modules/oracle.webcenter.framework_
11.1.1/portlet-producer-container-persistence.jar:
WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_
11.1.1/oracle-portlet-api.jar:
WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_
11.1.1/wsrp-container.jar:
WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_
11.1.1/oracle-portlet-tags.jar:
DB_ORACLE_HOME/jdbc/lib/ojdbc6.jar
```

2. Run the `PersistenceMigrationTool` using the following syntax:

```
java oracle.portlet.server.containerimpl.PersistenceMigrationTool
-sourceType [file | db]
-destType [file | db]
{-sourcePath [dir |
 -sourceUsername username -sourcePassword password -sourceDatabase db
 -sourceDriver srcDriver]}
{-destPath [dir | destUsername username -destPassword password -destDatabase db
 -destDriver dstDriver]}
[-debug]
```

where:

- `sourceType` indicates whether the source store is in a file (`file`) or database (`db`). You can have source and destination stores of the same type. Hence, you can migrate from one database to another or one file system to another.
- `destType` indicates whether the destination store is in a file (`file`) or database (`db`). You can have source and destination stores of the same type. Hence, you can migrate from one database to another or one file system to another.
- `sourcePath` is the location of a file-based persistence store. This argument is required when `sourceType` is `file`.
- `sourceUsername` is the database user name for a persistence store database. This argument is required when `sourceType` is `db`.
- `sourcePassword` is the database password for a persistence store database. This argument is required when `sourceType` is `db`.
- `sourceDatabase` is the name of a persistence store database. This argument is required when `sourceType` is `db`.
- `sourceDriver` is the name of a database driver to use. For example, for a SQL Server database, the database driver is `com.microsoft.sqlserver.jdbc.SQLServerDriver`. If you do not specify a value for this argument, the migration tool attempts to determine the correct driver to use from the `sourceDatabase` argument.
- `destPath` is the location of a file-based persistence store. This argument is required when `destType` is `file`.
- `destUsername` is the database user name for a persistence store database. This argument is required when `destType` is `db`.
- `destPassword` is the database password for a persistence store database. This argument is required when `destType` is `db`.
- `destDatabase` is the name of a persistence store database. This argument is required when `destType` is `db`.

- `destDriver` is the name of a database driver to use. For example, for a SQL Server database, the database driver is `com.microsoft.sqlserver.jdbc.SQLServerDriver`. If you do not specify a value for this argument, the migration tool attempts to determine the correct driver to use from the `destDatabase` argument.
- `debug` turns on full logging through standard output to enable users to diagnose issues that arise when the tool runs.

Example 59–16 demonstrates running the `PersistenceMigrationTool` utility. In this example, preferences from a File store are copied to a Database store.

Example 59–16 Running the PersistenceMigrationTool Utility

```
./java  -classpath
ORACLE_COMMON_HOME/webcenter/modules/com.bea.wsrp_10.3.2.0/system/wcs-producer-spi.jar:
ORACLE_COMMON_HOME/webcenter/modules/oracle.portlet.server_11.1.1/portlet-utils.jar:
ORACLE_COMMON_HOME/webcenter/modules/oracle.webcenter.framework_
11.1.1/portlet-producer-container-common.jar:
ORACLE_COMMON_HOME/webcenter/modules/oracle.webcenter.framework_
11.1.1/portlet-producer-container-persistence.jar:
WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_11.1.1/oracle-portlet-api.jar:
WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_11.1.1/wsrp-container.jar:
WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_11.1.1/oracle-portlet-tags.jar:
DB_ORACLE_HOME/jdbc/lib/ojdbc6.jar
oracle.portlet.server.containerimpl.PersistenceMigrationTool
-sourceType file \
-sourcePath /data/prefs
-destType db \
-destUsername scott \
-destPassword tiger \
-destDatabase abc.mycompany.com:1521:yourdatabase \
```

where:

- *`ORACLE_COMMON_HOME`* is your Oracle Common home
- *`WC_ORACLE_HOME`* is your WebCenter Portal Oracle home
- *`DB_ORACLE_HOME`* is your database Oracle home if it is on the same machine as the WebCenter Portal Oracle home. If the database Oracle home is on a separate machine, then you must copy the *`DB_ORACLE_HOME/jdbc/lib`* directory into a temporary directory on the WebCenter Portal Oracle home and reference the `ojdbc6.jar` library from this temporary directory in the classpath.

59.3.14.2.2 Migrating to or from a Consumer Persistence Store You cannot use the persistence store migration utility to migrate to or from a consumer persistence store. To migrate to or from a consumer persistence store, you must export the data from one producer from the consumer and import into another.

To migrate a consumer persistence store:

1. Export the producer metadata from your consumer application to an EAR file.

   This contacts the remote producer to get customization data, and so on. You can use the following tools to do this:

   - JDeveloper—see Section 59.3.15.1, "Exporting Portlet Producers at Design Time."
   - WLST—see the "Exporting and Importing Portal Framework Applications for Data Migration" section in *Administering Oracle WebCenter Portal*.

2. Either remap the producer connection to another producer, which can be using any persistence store type, or change the preference store configuration of the current producer, and restart it.

   For information about how to remap the producer connection, see Section 63.3.1, "How to Edit Portlet Producer Registration Settings."

3. Import from the exported EAR file back to your consumer application. This pushes the relevant metadata back to the producers, which then store it in their configured persistence store.

59.3.14.2.3 Moving a WSRP Portlet Producer If you move a portlet producer to a different server, you may also have to move the persistence store for the producer.

After installing the new producer, move the persistence store according to the following:

- Consumer persistence store—Because the data is stored with the consumer, there is no requirement to move the persistence store.
- Database persistence store—Perform one of the following:
  - Configure the new producer to point the WebLogic Server data source to the same database as the original producer.
  - Migrate the persistence store using the Persistence Store Migration Utility (see Section 59.3.14.2, "Migrating a WSRP Producer Persistence Store" for more information).
- File persistence store—Perform one of the following:
  - Configure the new producer to point the same file system location as the original producer.
  - Migrate the persistence store using the Persistence Store Migration Utility (see Section 59.3.14.2, "Migrating a WSRP Producer Persistence Store" for more information).

Finally, update the URL of the producer registration by using Enterprise Manager Fusion Middleware Control or the WLST commands: `setWSRPProducerRegistration` or `setPDKJavaProducerRegistration`.

59.3.14.3 Enabling Java Object Cache for Database Persistence Store Access

To improve persistence store performance, you can use Java Object Cache for persistence store access. This avoids the need to access the persistence store on each request. Enable Java Object Cache for the persistence store using the `enableJavaObjectCache` JNDI variable.

To enable Java Object Cache for persistence store access:

1. In JDeveloper, open the portlet producer application for which you want to set up the persistence store.
2. Expand the portlet project (for example, **Portlets**).
3. Expand the **Web Content** node and then the **WEB-INF** node.
4. Right-click **web.xml** and choose **Open**.
5. Click the **Source** tab.
6. Add the following code:

```
<env-entry>
```

```
  <env-entry-name>
    oracle/portal/wsrp/server/enableJavaObjectCache
  </env-entry-name>
  <env-entry-type>java.lang.Boolean</env-entry-type>
  <env-entry-value>true</env-entry-value>
</env-entry>
```

7. Save the `web.xml` file.

59.3.15 How to Export and Import Portlet Producers at Design Time

You can export and import portlet producers at design time.

This section includes the following topics:

- Section 59.3.15.1, "Exporting Portlet Producers at Design Time"
- Section 59.3.15.2, "Importing Portlet Producers at Design Time"

59.3.15.1 Exporting Portlet Producers at Design Time

When you package an application for deployment, any portlet producers referenced by the application are contacted so that the producer data can be included in the MAR file. If any of the producers are not running, they cannot be contacted and the data cannot be included.

By creating an export archive of the producer data at design time instead, you can ensure that the producers are running, therefore all the producer data, including remote customizations and client-side metadata, can be retrieved. WebCenter Portal Framework can then use the export archive at deployment, instead of having to contact the remote producers.

To export portlet producers at design time:

1. Edit the *`WC_ORACLE_HOME`*`/jdeveloper/jdev/bin/jdev.conf` file and set the following JVM flag:

   ```
   AddVMOption  -Doracle.webcenter.portlet.dt.disableRemoteExport=true
   ```

   Setting this flag ensures that, when the application is packaged for deployment, the export archive you create in the following steps is included in the MAR file, rather than the remote producers being contacted to retrieve producer data.

2. Restart JDeveloper to apply the new setting.
3. Open the application that consumes the producers to export.
4. From the menu, choose **Application** and then **Export Portlet Producers**.

   This menu option appears only if the current application contains producers.

5. In the Export Portlet Producers dialog, in the **Export Archive File Name (.ear)** field, enter the absolute path and file name to use for the export set.
6. Click **OK**.

   When the application is packaged for deployment, because you set the `disableRemoteExport` flag to `true`, WebCenter Portal Framework checks for the presence of the export archive at the location specified in the dialog. If the export archive exists, the contents of the archive are included in the MAR file instead of contacting the remote producers to retrieve producer data.

Note: If the `disableRemoteExport` flag is set and there is no export archive, a default export archive, without the remote producer data, is created and included in the MAR file.

59.3.15.2 Importing Portlet Producers at Design Time

You can import producer data, including customizations made at runtime, from a deployed application into your application at design time.

Note: The producers in the export archive (EAR file) must be the same as those in the application into which they are being imported.

For information about how to create an export archive of producer metadata from a deployed application, see the "Exporting Portlet Client Metadata for Portal Framework Applications" section in *Administering Oracle WebCenter Portal*.

To import portlet producers at design time:

1. Edit the `*WC_ORACLE_HOME*/jdeveloper/jdev/bin/jdev.conf` file and set the following JVM flag:

   ```
   AddVMOption  -Doracle.webcenter.portlet.dt.enableImport=true
   ```

2. Restart JDeveloper to apply the new setting. This ensures that the **Import Portlet Producers** menu option is available.
3. Open the application into which you want to import the producers.
4. From the menu, choose **Application** and then **Import Portlet Producers**.
5. In the Import Portlet Producers dialog, in the **Import Archive File Name (.ear)** field, enter the absolute path and file name of the export archive to import.
6. Click **OK**.

Note: If the application into which you import producers is currently running in Integrated WLS, you must re-run the application to see the updated producers. Simply refreshing the page may result in errors caused by the different MDS instances used at design time and runtime.

59.4 Testing JSR 286 Portlets

Before making your portlets available in a production environment, it is highly advisable to test them first to make sure that they behave as expected.

This section includes the following topics:

- Section 59.4.1, "How to Run a WSRP Portlet Producer on Integrated WebLogic Server"
- Section 59.4.2, "What Happens When You Run a WSRP Portlet Producer on Integrated WebLogic Server"
- Section 59.4.3, "How to Deploy a WSRP Portlet Producer to the Integrated WebLogic Server"
- Section 59.4.4, "Testing Portlet Personalization"

- Section 59.4.5, "Hiding or Removing the WSRP Test Page"

59.4.1 How to Run a WSRP Portlet Producer on Integrated WebLogic Server

The Integrated WebLogic Server (Integrated WLS) provides a quick and easy way of testing your portlets because it is preconfigured so that you can run applications within JDeveloper without needing to create deployment profiles.

To test a JSR 286 portlet on Integrated WLS:

1. In JDeveloper, open the portlet producer application that owns the portlet that you want to test.
2. Expand the portlet project (for example, **Portlets**).
3. Expand the **Web Content** node and then the **WEB-INF** node.
4. Right-click **portlet.xml** and choose **Run**.

   Running `portlet.xml` triggers the packaging and deployment of your portlet producer application on an Integrated WLS instance named after the application.
5. Check the IntegratedWebLogicServer - Log window to monitor the deployment progress. The log shows the URL of the application page. The WSRP producer URL uses the following syntax:

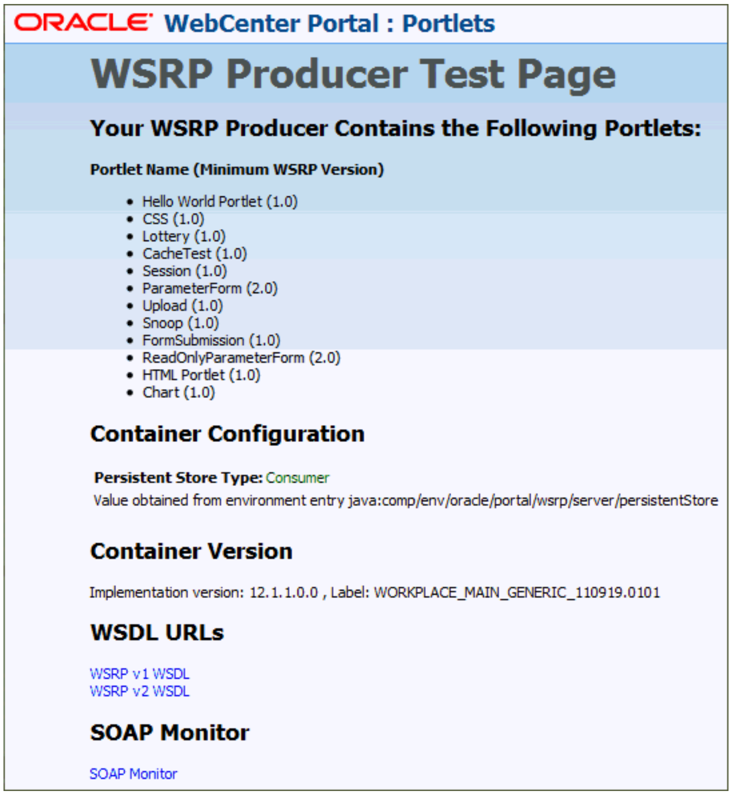
   ```
   http://host:port/applicationname-Portlets-context-root/info
   ```

   where:

   - `host` is the server to which your producer has been deployed.
   - `port` is the HTTP Listener port. Typically, it is `7101`. When the server is started, the port is displayed in the console.
   - `context-root` is the Web application's context root.

   A test page similar to Figure 59–6 displays in a browser window.

Figure 59–6 WSRP Producer Test Page



ORACLE WebCenter Portal : Portlets

WSRP Producer Test Page

Your WSRP Producer Contains the Following Portlets:

Portlet Name (Minimum WSRP Version)

- Hello World Portlet (1.0)
- CSS (1.0)
- Lottery (1.0)
- CacheTest (1.0)
- Session (1.0)
- ParameterForm (2.0)
- Upload (1.0)
- Snoop (1.0)
- FormSubmission (1.0)
- ReadOnlyParameterForm (2.0)
- HTML Portlet (1.0)
- Chart (1.0)

Container Configuration

Persistent Store Type: Consumer

Value obtained from environment entry java:comp/env/oracle/portal/wsrp/server/persistentStore

Container Version

Implementation version: 12.1.1.0.0 , Label: WORKPLACE_MAIN_GENERIC_110919.0101

WSDL URLs

WSRP v1 WSDL
WSRP v2 WSDL

SOAP Monitor

SOAP Monitor

6. While the application is running, you can switch back and forth between JDeveloper and your browser to make changes at design time in your application, save the changes, and then refresh the test page in your browser.

7. When the producer is successfully running, you should register it with an application and add one or more portlets to a page to check that it is working correctly. Registering a producer gives applications the information they require to locate and communicate with that producer. After you register a producer, it is exposed as a connection, and the producer and its portlets become available in the Application Resources panel under the Connections node, or in the Resource Palette.

   To register producers of JSR 286 portlets, follow the instructions provided in Section 63.2.1.1, "How to Register a WSRP Portlet Producer."

   To add your portlets to a page, follow the instructions provided in Section 63.5, "Adding Portlets to a Page."

8. To stop an Integrated WLS instance, in the Run Manager tab, select **DefaultServer** and click the red **Stop** icon. When the instance stops, the application is undeployed, and therefore, becomes unavailable.

   > **Tip:** You can also stop an Integrated WLS instance by clicking the red **Stop** icon in the IntegratedWebLogicServer - Log window and selecting **DefaultServer**.

59.4.2 What Happens When You Run a WSRP Portlet Producer on Integrated WebLogic Server

When you run a WSRP portlet producer on Integrated WLS, the following happens:

- WSDLs and other configuration files are added to the WEB-INF directory to configure the portlets as a web service.
- The `web.xml` file is updated with listener and server classes, filters, parameters, and other configurations that are required to run the JSR 286 portlet producer application successfully.

  For example, the `oracle.portlet.server.adapter.web.ServerContextListener` class, `WSRP_v2_PortletManagement_Service` and `WSRPBaseService` filters, and so on.
- Libraries required for JSR 286 portlets are added to the `weblogic.xml` file, for example, `oracle.portlet-producer.wsrp`.

These configurations vary depending upon the portlet requirements.

59.4.3 How to Deploy a WSRP Portlet Producer to the Integrated WebLogic Server

When you run a WSRP portlet producer application on the Integrated WLS instance, when the instance stops, the application is undeployed and therefore becomes unavailable. For a more persistent testing scenario, you can deploy your portlet producer application to the Integrated WLS so that it is always available while the Default Server is running.

If you choose this method, then you must first create deployment profiles, as described in Section 61.4, "Creating a WAR Deployment Profile." If you deploy your application to the Integrated WLS, then the Deployment Configuration dialog displays to enable you to configure and customize deployment settings. The file system MDS repository precreated by JDeveloper displays in the **Repository Name** field.

For information about deploying and running an application on the Integrated WLS, see Section 7.2, "Deploying a Portal Framework Application to the Integrated WebLogic Server."

59.4.4 Testing Portlet Personalization

If you have implemented personalization for your portlet, then the **Personalize** icon appears on the portlet only for authenticated users. Hence, to test the personalization of a portlet, you must have some form of security implemented for the application consuming the portlet. For testing purposes, you may prefer to just configure the most basic authentication possible. For more information, see Section 74.12, "Configuring Basic Authentication for Testing Portlet Personalization."

59.4.5 Hiding or Removing the WSRP Test Page

For security purposes, you may want to hide the WSRP test page so that it is visible only to administrators, or you may want to remove it entirely.

This section includes the following subsections:

- Section 59.4.5.1, "Hiding the WSRP Test Page"
- Section 59.4.5.2, "Removing the WSRP Test Page"

Note: There is also a Webservice test page, which enables you to build up SOAP requests to the producer in a web browser. For WSRP portlet producers this test page is disabled by default. Although this test page does not provide any useful information for testing your portlet producers, you can enable it, if desired, by extracting the `oracle-webservices.xml` file from the deployed producer's WAR file, setting the `expose-testpage` flag to `true` for both WSRP v1 and WSRP v2 producers, and then repacking the WAR and EAR files and redeploying the producer.

59.4.5.1 Hiding the WSRP Test Page

If you do not want all users to be able to see the WSRP test page, you can protect it so that only administrators can see it.

To hide the WSRP test page:

1. In JDeveloper, open the portlet producer application for which you want to hide the test page.
2. Expand the portlet project (for example, **Portlets**).
3. Expand the **Web Content** node and then the **WEB-INF** node.
4. Right-click **web.xml** and choose **Open**.
5. Click the **Source** tab.
6. Add the following code:

```
<security-role>
  <description>AdministratorRole</description>
  <role-name>Admin</role-name>
</security-role>
<security-constraint>
  <display-name>TestPageInfo</display-name>
  <web-resource-collection>
    <web-resource-name>TestPageInfo</web-resource-name>
    <description>Protect the test page servlet.</description>
    <url-pattern>/info/*</url-pattern>
  </web-resource-collection>
  <auth-constraint>
    <description>Administrators</description>
    <role-name>Admin</role-name>
  </auth-constraint>
  <user-data-constraint>
    <transport-guarantee>NONE</transport-guarantee>
  </user-data-constraint>
</security-constraint>
```

7. Save the `web.xml` file.

59.4.5.2 Removing the WSRP Test Page

You can remove the WSRP test page completely.

To remove the WSRP test page, you must edit an element that is injected into the `web.xml` file at packaging time, so you must edit the `web.xml` file in the resulting EAR file.

To remove the WSRP test page:

1. Extract the `web.xml` file from the EAR file created at packaging time and open it in an editor of your choice.
2. Comment out the following code:

```
<servlet-mapping>
   <servlet-name>WSRPTestPage</servlet-name>
   <url-pattern>/info</url-pattern>
</servlet-mapping>
```

3. Save the `web.xml` file and add the edited file to the EAR file.

59.5 Deploying JSR 286 Portlets to a WebLogic Managed Server

For information about how to deploy JSR 286 portlets to a WebLogic Managed Server, see Chapter 61, "Deploying Portlet Producers."

When you deploy a portlet producer containing JSR 286 portlets to a WebLogic Managed Server, the configuration settings described in Section 59.4.2, "What Happens When You Run a WSRP Portlet Producer on Integrated WebLogic Server" are added to the EAR file.

59.6 Migrating WebLogic Portal Portlets to WebCenter Portal

This section discusses migrating WebLogic Portal portlets developed with the WebLogic Portal's Eclipse IDE to WebCenter Portal's JDeveloper environment.

This section includes the following topics:

- Section 59.6.1, "Migrating Java Portlets from WebLogic Portal to WebCenter Portal"
- Section 59.6.2, "Problems With Migrating WLP Portlets to a WebCenter Portal Application"
- Section 59.6.3, "General Tips for Migrating WLP Portlets to a WebCenter Portal Portlet Producer Application"

Note: There is no direct support or tooling available for migrating WLP portlets to a WebCenter Portal project. In many cases, significant refactoring and recoding is required. This section highlights some of the migration issues and offers recommendations as appropriate.

59.6.1 Migrating Java Portlets from WebLogic Portal to WebCenter Portal

In general, JSR 286 standard portlets (Java portlets) that were developed in WebLogic Portal can be moved directly to a WebCenter Portal/JDeveloper environment. Simply copy all of the portlet artifacts (`portlet.xml`, `.java` files, `.jsp` files, and so on) into a JDeveloper Portlet Producer application project.

Note: Any WebLogic Portal specific APIs used by the portlet must be rewritten to use WebCenter Portal APIs. WebLogic Portal specific APIs will not work in a WebCenter environment.

> **Tip:** You can use the WebLogic Portal Export feature to export your Java portlets to an archive file and then import the archive file into your JDeveloper project. This technique may be simpler than manually copying all the portlet artifacts from one environment to another. See the "Exporting Java Portlets for Use on Other Systems" section in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

59.6.2 Problems With Migrating WLP Portlets to a WebCenter Portal Application

Moving portlets from a WLP development environment to a WebCenter Portal development environment is not directly supported. In general, this process can involve substantial rewriting or refactoring of the migrated portlet code and related files.

> **Note:** If a portlet (regardless of type) was capable of running over WSRP in WebLogic Portal, the portlet can be consumed directly from the WebLogic Portal's portlet producer in a WebCenter Portal consumer. See the "WSRP Interoperability with Oracle WebCenter Portal and Oracle Portal" section in the *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*.

Problems inherent in moving WebLogic Portal portlets directly to a WebCenter Portal project in JDeveloper can include the following:

- **URL Generation** – Some URL types supported by WebLogic Portal do not work in WebCenter Portal, including DesktopURL, CustomEventURL, PageURL, WindowURL, StandalonePortletURL, and possibly others.
- **Events** – The WebCenter Portal consumer does not generate all of the events that the WebLogic Portal framework generates. These unsupported events include Init, LookAndFeelReinit, Notification, Refresh, WindowActivation, WindowDeactivation, and possibly others.
- **Render Dependencies** – WLP render dependencies do not work in WebCenter.
- **WLP Framework APIs** – Many WLP APIs are not supported in WebCenter Portal.

59.6.3 General Tips for Migrating WLP Portlets to a WebCenter Portal Portlet Producer Application

This section provides general guidance on moving WLP portlets into WebCenter Portal's portlet producer environment. Although portlet migration is not directly supported, this section lists tips that might help you with the manual migration process of the various WLP portlet types.

> **Caution:** This section provides general guidance only. As discussed in Section 59.6, "Migrating WebLogic Portal Portlets to WebCenter Portal," direct migration of WLP portlet types to WebCenter Portal application or portlet producer application is not directly supported. In almost all cases, rewriting and refactoring of existing portlet code is required when moving portlets from WLP to WebCenter Portal.
>
> As noted previously, any WebLogic Portal specific APIs used by the portlet must be rewritten to use WebCenter Portal APIs. WebLogic Portal specific APIs will not work in a WebCenter environment.

- **JSP portlets** – Moving JSP portlets directly into a WebCenter Portal project is not supported. You can consider refactoring the JSP portlet into a JSR286 portlet and then migrate it as explained in Section 59.6.1, "Migrating Java Portlets from WebLogic Portal to WebCenter Portal."
- **JSR 168/286 portlets** – Most Java (JSR 168 / 286) portlets can be directly imported to a WebCenter Portal portlet producer and run as JSR286 portlets. Some JSR168 portlets that take advantage of specific error conditions guaranteed by the JSR168 specification may need to be run in a JSR168 compatibility mode. See the "JSR-286/JSR-168 Portlet Compatibility" section in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*. JSR168 portlets using WLP's proprietary eventing (event subscriptions declared in a `.portlet` file) must be re-written to use JSR286 events.
- **Java Page Flow portlets** – JPF portlets are not supported by WebCenter Portal's portlet producer and must be either consumed from a WebLogic Portal WSRP producer or refactored to become JSR286 or JSF portlets.
- **JSF portlets** – If the portlet is written to the JSR329 JSF Portlet bridge in WLP, it should run on a WebCenter producer with no changes. For portlets using the WLP "native" JSF portlet bridge, the portlet must be consumed from a WebLogic Portal producer or upgraded to a JSF 1.2 portlet using the JSR329 bridge. See also the "Working With JSF-Java Portlets" chapter in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.
- **Clipper portlets** – Clipper portlets are not supported in WebCenter portal, but the web clipping features in WebCenter Portal's pagelet producer provide equivalent functionality.
- **Struts portlets** – Moving Struts portlets directly into a WebCenter Portal project is not supported. You can consider refactoring the JSP portlet into a JSR286 portlet and then migrate it as explained in Section 59.6.1, "Migrating Java Portlets from WebLogic Portal to WebCenter Portal."
- **Content Presenter portlets** – WLP Content Presenter portlets will not work over WSRP and will not work with WebCenter. Portal However, equivalent functionality is available in WebCenter Portal's content presenter. See the "Publishing Content Using Content Presenter" chapter in *Building Portals with Oracle WebCenter Portal*.
- **Remote (WSRP) portlets** – Remote (WSRP) portlets consumed in WLP can be consumed in a WebCenter Portal's consumer instead. Remote portlets taking advantage of WLP-specific WSRP features may need modification. For example the custom data transfer feature must be replaced by using events or shared parameters to convey data. See the "WSRP Interoperability with Oracle WebCenter Portal and Oracle Portal" and "Configuring WSRP Security Between WLP and a

WebCenter Portal: Framework Application" chapters in the *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*.

59.7 Troubleshooting JSR 286 Java Portlets

This section provides information to assist you in troubleshooting problems you may encounter while creating and testing JSR 286 portlets.

This section includes the following topics:

- Section 59.7.1, "Issues with Creating JSR 286 Portlets"
- Section 59.7.2, "Issues with Testing JSR 286 Portlets"

59.7.1 Issues with Creating JSR 286 Portlets

This section includes the following topics:

- Section 59.7.1.1, "Cannot Access the Create Portlet Wizard"
- Section 59.7.1.2, "Cannot Add the Portlet Functionality that I Want to the Portlet"

59.7.1.1 Cannot Access the Create Portlet Wizard

Problem

In the New Gallery, I cannot find the Standards-based Java Portlet (JSR 286) option.

Cause

The application in which you are trying to create the JSR 286 portlet was created using WebCenter Portal's Portal Framework application template and therefore is not scoped for portlet creation.

Solution

1. Try creating the portlet in a Portlet Producer Application or any application scoped for portlet creation (any application except for those built using WebCenter Portal's Portal Framework application template).
2. In the New Gallery, click the All Technologies tab to list all available options regardless of the technology scope of the application.

59.7.1.2 Cannot Add the Portlet Functionality that I Want to the Portlet

Problem

I cannot find the option to add certain features, for example portlet events or public render parameters, to the portlet in the Create JSR 286 Java Portlet wizard.

Cause

The Create JSR 286 Java Portlet wizard does not provide the option to add certain features to portlets.

Solution

After you create the portlet using the Create JSR 286 Java Portlet wizard, edit the `portlet.xml` file using the Overview Editor to add advanced functionality. For more information, see Section 59.3, "Developing JSR 286 Java Portlets."

59.7.2 Issues with Testing JSR 286 Portlets

For a list of the issues you may encounter when consuming portlets during the testing phase of portlet development, see Section 63.11, "Troubleshooting Portlets."

60

Building Java Portlets Using the Oracle PDK-Java

This chapter describes how to build Java portlets using the Oracle PDK-Java. Oracle PDK-Java is an Oracle proprietary technology for building Java portlets.

This chapter includes the following topics:

- Section 60.1, "Introduction to PDK-Java Portlets"
- Section 60.2, "Creating a PDK-Java Portlet"
- Section 60.3, "Developing PDK-Java Portlets"
- Section 60.4, "Testing PDK-Java Portlets"
- Section 60.5, "Deploying PDK-Java Portlets"
- Section 60.6, "Creating a Struts Portlet"
- Section 60.7, "Troubleshooting PDK-Java Portlets"

> **Tip:** For building new Java portlets, you should consider using the JSR 286 standard. For more information, see Chapter 59, " Building Standards-Based Java Portlets Using JSR 286."

60.1 Introduction to PDK-Java Portlets

PDK-Java gives you a framework to simplify the development of Java portlets by providing commonly required utilities and enabling you to leverage existing development skills and application components such as JSPs, servlets, and static HTML pages. PDK-Java also enables you to create portlets without having to deal directly with the complexity of communications between WebCenter Portal Framework and producers.

The PDK-Java framework is divided into the following areas:

- The **Producer Adapter** insulates the developer from the HTTP syntax defined by WebCenter Portal Framework for communication with web producers. It translates the information passed between WebCenter Portal Framework and your Java web producer. Without an adapter, your producer would not only manage portlets, but it would also have to communicate this information directly to WebCenter Portal Framework in the expected language. The adapter eliminates the need for your web producer to understand the portal language and vice-versa.
- The **Producer Interface** defines the APIs (functions) required by your Java implementation to integrate with the Producer Adapter. The Producer Adapter receives messages from the Portal Framework application, translates them into

calls to the Producer Interface, and translates the producer's response into a format that the application can understand. The Producer Interface contains a set of Java classes that define the methods your producer implements and, in often, provides a standard implementation. Some of the primary classes are as follows:

  - `ProviderDefinition` (`oracle.portal.provider.v2.ProviderDefinition`)
  - `ProviderInstance` (`oracle.portal.provider.v2.ProviderInstance`)
  - `PortletDefinition` (`oracle.portal.provider.v2.PortletDefinition`)
  - `PortletInstance` (`oracle.portal.provider.v2.PortletInstance`)
  - `ParameterDefinition` (`oracle.portal.provider.v2.ParameterDefinition`)
  - `EventDefinition` (`oracle.portal.provider.v2.EventDefinition`)

- The **Producer Runtime** provides a base implementation that follows the specification of the Producer Interface. The Producer Runtime includes a set of default classes that implement each of the Producer Interfaces and enables you to leverage the rendering, personalization, and security frameworks provided with PDK-Java. These classes and the associated frameworks simplify the development of a producer by implementing common functions for WebCenter Portal Framework requests and providing a declarative mechanism for configuring the producer. Using the Producer Runtime, you can focus your development efforts on the portlets themselves rather than the infrastructure needed to communicate with the Portal Framework application. If the standard behavior of the Producer Runtime does not meet your requirements, then you can easily extend or override specific behaviors. Some of the primary classes are as follows:

  - `DefaultProviderDefinition` (`oracle.portal.provider.v2.DefaultProviderDefinition`)
  - `DefaultProviderInstance` (`oracle.portal.provider.v2.DefaultProviderInstance`)
  - `DefaultPortletDefinition` (`oracle.portal.provider.v2.DefaultPortletDefinition`)
  - `DefaultPortletInstance` (`oracle.portal.provider.v2.DefaultPortletInstance`)
  - `PortletRenderer` (`oracle.portal.provider.v2.render.PortletRenderer`)
  - `PortletPersonalizationManager` (`oracle.portal.provider.v2.personalize.PortletPersonalizationManager`)
  - `PortletSecurityManager` (`oracle.portal.provider.v1.http.DefaultSecurityManager`)

- The **Producer Utilities** provide methods for simplifying the rendering of portlets. The utilities include methods for constructing valid links (`hrefs`), rendering the portlet's container (including the header), rendering HTML forms that work within a page, and supporting portlet caching.

Oracle JPDK producers use open standards, such as XML, SOAP, HTTP, or Java EE for deployment, definition, and communication with applications. WebCenter Portal incorporates portlets from a Oracle JPDK producer, which communicates with the consumer application using SOAP over HTTP.

There are several benefits to developing portlets and exposing them through Oracle JPDK producers:

- Deploy portlets remotely
- Leverage existing web application code to create portlets
- Specify producers declaratively
- Use standard Java technologies (for example, servlets and JSPs) to develop portlets.

To expose your portlets using a Oracle JPDK producer, you must first create a producer that manages your portlets and communicates with WebCenter Portal using SOAP. For more information, see Section 60.5, "Deploying PDK-Java Portlets."

For more information about the PDK-Java, see the *Oracle Fusion Middleware Java API Reference for Oracle PDK-Java* at:

```
http://docs.oracle.com/cd/E23943_
01/apirefs.1111/e10691/index.html?overview-summary.html
```

60.2 Creating a PDK-Java Portlet

WebCenter Portal provides a wizard, available in JDeveloper, for quickly and easily creating the initial framework of your PDK-Java portlets.

This section includes the following topics:

- Section 60.2.1, "How to Create a PDK-Java Portlet"
- Section 60.2.2, "What Happens When You Create a PDK-Java Portlet"

60.2.1 How to Create a PDK-Java Portlet

Using the Create Oracle PDK-Java Portlet wizard in JDeveloper you can quickly and easily create PDK-Java portlets. You can choose which portlet modes you want to implement and the implementation method (JSP, HTTP servlet, Java class, or HTML) to use for each mode. The wizard then creates a simple implementation for each of the selected modes.

To create a PDK-Java portlet using the JDeveloper wizard:

1. In JDeveloper, open the portlet producer application under which you want to create your portlet, or create a new portlet producer application.

   For information about how to create a portlet producer application, see Section 57.4.1, "Portlet Producer Applications."

   > **Note:** If you do not use the WebCenter Portal - Portlet Producer Application template to create the portlet producer application, you must manually add the appropriate portlet building technology scopes to the application.
   >
   > Applications built using the WebCenter Portal - Framework Application template are *not* scoped for portlet creation.

2. Right-click the project under which you want to create your portlet (for example, **Portlets**), and choose **New.**

Note: To create the portlet in an existing producer, right-click the producer's `provider.xml` file and choose **Add Portlet.** This takes you directly to the General Portlet Information page of the Create Oracle PDK-Java Portlet wizard (step 8).

3. In the New Gallery, expand **Web Tier,** select **Portlets** and then **Oracle PDK-Java Portlet,** and click **OK.**
4. On the Provider Details page of the Create Oracle PDK-Java Portlet wizard, enter a name for the new producer to contain your portlet. This name must be unique within the project.

   Tip: In the PDK-Java, the term provider is used instead of producer. A provider is the same thing as a producer.

5. Select **Generate Deployment Properties File.**

   This automatically generates two `.properties` files:

   - *`serviceID`*`.properties` defines properties for a producer with that service ID. The service ID has the same value as the producer name.
   - `_default.properties` is a default properties file. A producer application may have multiple producers, each with its own service ID. On registration, if no service ID is defined, then the default properties file is used.

6. Select **Generate XML Entries.**

   This automatically generates a producer definition file (`provider.xml`) for the producer that contains details of the portlets belonging to the producer, including those generated by the wizard.

7. Select **Generate Index JSP** and then click **Next.**

   This automatically generates an `index.jsp` file that lists all the producers that reside in the application with hyperlinks that enable easy access to producer test pages.

8. On the General Portlet Information page, enter a name and display name for your portlet.

   The name is used internally and is not exposed to users. The display name is displayed to users in portlet selection lists, such as the Component Palette.

   The description is not implemented in Portal Framework applications so you do not need to enter a value in this field unless your portlet is likely to be consumed by other applications, such as Oracle Portal.

9. In the **Timeout Interval (Seconds)** field, enter the number of seconds to allow for rendering the portlet.
10. In the **Timeout Message** field, enter a message to display if the rendering of the portlet exceeds the timeout interval specified and then click **Next.**
11. On the View Modes page, under Show Page, from the **Implementation Style** drop-down list, select the implementation style to use for the portlet's Shared Screen mode.

    - Select **JSP** to implement the portlet's Shared Screen mode as a JavaServer Page. In the **File Name** field, enter the name of the file to be generated by the wizard.

- Select **HTTP Servlet** to implement the portlet's Shared Screen mode as an HTTP servlet. In the **Package Name** field, enter the name of the package that contains the HTTP servlet. In the **Class Name** field, enter the Java class to be referenced with the portlet's Shared Screen mode.
- Select **HTML File** to implement the portlet's Shared Screen mode as an HTML file. In the **File Name** field, enter the name of the file to be generated by the wizard. Note that, when you choose **HTML File,** the following code is added inside the `<renderer>` element of your `provider.xml` file:

  ```
  <showPage class="oracle.portal.provider.v2.render.http.ResourceRenderer">
      <resourcePath>provider_id/portlet_name/file.html</resourcePath>
      <contentType>content_type</contentType>
      <charSet>char_set</charSet>
   </showPage>
  ```

  `charSet` indicates the character set that the producer must use to encode the HTML page. The default character set is determined by JDeveloper preferences. If you require a different character set, you must update this element of `provider.xml` accordingly.
- Select **Java Class** to implement the portlet's Shared Screen mode as a Java class. In the **Package Name** field, enter the name of the package that contains the Java class. In the **Class Name** field, enter the name of the Java class.

For more information about Shared Screen mode, see Section 57.4.2.1, "View Mode."

12. To implement Full Screen mode for your portlet, select **Show Details Page** and then select an implementation style as described for Shared Screen mode in step 11.
13. At this point in the wizard, you can click **Finish** to create the portlet immediately, using the default values for all remaining settings.

    To provide additional details for your portlet, click **Next** and follow the remaining steps.
14. On the Customize Modes page, **Edit Page** is selected by default. To implement Edit mode for your portlet, select an implementation style as described for Shared Screen mode in step 11. If you do not want to implement Edit mode, then deselect **Edit Page.**

    For more information about Edit mode, see Section 57.4.2.2, "Edit Mode."
15. To implement Edit Defaults mode for your portlet, select **Edit Defaults Page**, and then select an implementation style as described for Shared Screen mode in step 11.

    For more information about Edit Defaults mode, see Section 57.4.2.3, "Edit Defaults Mode."
16. Click **Next.**
17. On the Additional Modes page, to implement Help mode for your portlet, select **Help Page**, and then select an implementation style as described for Shared Screen mode in step 11.

    For more information about Help mode, see Section 57.4.2.4, "Help Mode."
18. To implement About mode for your portlet, select **About Page**, and then select an implementation style as described for Shared Screen mode in step 11.

    For more information about About mode, see Section 57.4.2.5, "About Mode."

19. Click **Next.**
20. On the Public Portlet Parameters page, click **Add** to add a public parameter to your portlet.

    This adds a new row to the table of parameters. Double-click each field in the row to provide a name, display name, and description for the parameter.

    Repeat this step to add more public parameters. When you are done, click **Next.**

    Public portlet parameters enable a portlet to communicate with the page on which it resides and with other portlets on that page. For more information, see Section 60.3.3, "How to Implement Public Parameters."
21. Oracle PDK-Java events are not supported in Portal Framework applications, so on the Public Portlets Events page, click **Finish.**

    For more information about events, see the *Portal Developer's Guide for Oracle Portal*.

60.2.2 What Happens When You Create a PDK-Java Portlet

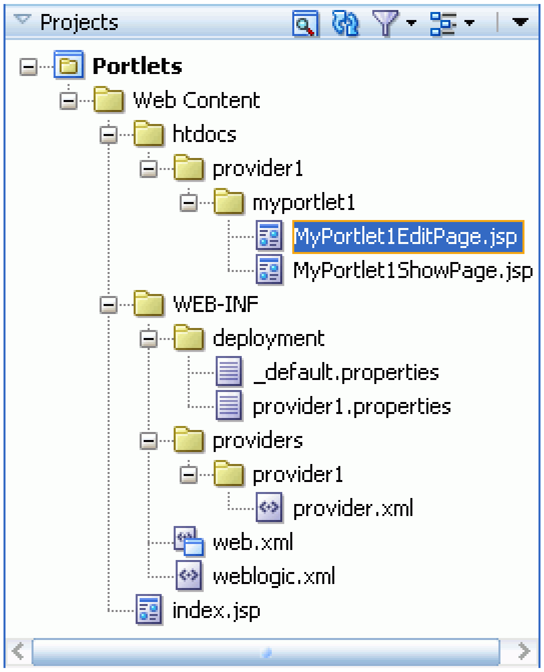
When you use the Create Oracle PDK-Java Portlet wizard, JDeveloper generates a default implementation of the portlet. Specifically, the following files are created:

- Files for each portlet mode you selected, for example `*portletname*EditPage.jsp`.
- `provider.xml` is the producer definition file that contains details of the portlets belonging to the producer.
- `web.xml` is the web deployment descriptor file for the application.
- `weblogic.xml` includes a shared library definition pointing to the PDK-Java shared library.
- `index.jsp` is used by JDeveloper for testing purposes.
- `_default.properties` is the default properties file.
- `*serviceID*.properties` is the properties file for the producer identified by *serviceID*.

All these files are required to deploy and run the portlet successfully, except for `index.jsp`.

You can see all these files in the Application Navigator, as shown in Figure 60–1.

Figure 60–1 Files Generated for a PDK-Java Portlet



```
Projects
Portlets
  Web Content
    htdocs
      provider1
        myportlet1
          MyPortlet1EditPage.jsp
          MyPortlet1ShowPage.jsp
    WEB-INF
      deployment
        _default.properties
        provider1.properties
      providers
        provider1
          provider.xml
      web.xml
      weblogic.xml
    index.jsp
```

60.3 Developing PDK-Java Portlets

When you have built your initial portlet implementation using the Create Oracle PDK-Java Portlet wizard, the next step is to create the code that drives the portlet content and behavior.

You can find the JavaDoc reference for the PDK-Java in the *Oracle Fusion Middleware Java API Reference for Oracle PDK-Java* at:

`http://docs.oracle.com/cd/E23943_01/apirefs.1111/e10691/index.html?overview-summary.html`

This section includes the following topics:

- Section 60.3.1, "General Guidelines for PDK-Java Portlets"
- Section 60.3.2, "How to Add Portlet Modes"
- Section 60.3.3, "How to Implement Public Parameters"
- Section 60.3.4, "How to Implement Private Parameters"
- Section 60.3.5, "How to Use JNDI Variables"
- Section 60.3.6, "How to Access Session Information"
- Section 60.3.7, "How to Enhance PDK-Java Portlet Performance with Caching"
- Section 60.3.8, "How to Manage the Persistence Store for PDK-Java Portlets"
- Section 60.3.9, "How to Move a PDK-Java Portlet Producer"
- Section 60.3.10, "How to Export and Import PDK-Java Portlet Producers at Design Time"

The source code for many of the examples referenced in this section is available as part of the Portlet Developer's Kit (PDK).

When you unzip the PDK-Java, you can find the examples in:

```
../pdk/jpdk/v2/src/oracle/portal/sample/v2/devguide
```

60.3.1 General Guidelines for PDK-Java Portlets

When you build PDK-Java portlets for use in WebCenter Portal, you should consider the following:

- Your portlet must not contain any code that relies upon the URL format or parameters in the request that were not explicitly added by your portlet.
- You should never assume that your portlet is the only one on a page, regardless of the portlet mode. For example, even if your portlet is in Edit mode, you should not assume that it is the only portlet on the page.
- Never write a portlet mode that simply redirects. A redirect can only be issued while processing a post to your portlet or following a link generated by your portlet.

60.3.2 How to Add Portlet Modes

In the Create Oracle PDK-Java Portlet wizard, you add portlet modes by checking boxes on the wizard pages. For more information about using the wizard, see Section 60.2.1, "How to Create a PDK-Java Portlet." For each portlet mode that you select in the wizard, a basic skeleton is created. If you want to add a portlet mode after creating the portlet, you can do that by updating `provider.xml` and creating HTML or JSPs in JDeveloper.

The principles of implementing portlet modes using `RenderManager` are the same for all modes.

For more detailed information about the PDK runtime classes used in this section, see the JavaDoc in the *Oracle Fusion Middleware Java API Reference for Oracle PDK-Java* at:

`http://docs.oracle.com/cd/E23943_01/apirefs.1111/e10691/index.html?overview-summary.html`

To add a portlet mode:

1. In JDeveloper, open the application that contains the portlet.
2. Expand the project that contains the portlet.
3. Expand the **Web Content** node and then the **htdocs** node and then the node for the producer.
4. Right-click the node for the portlet and choose **New.**

   > **Tip:** The node for the portlet is located under **Web Content > htdocs > *provider***.

5. In the New Gallery, expand **Web Tier**, select **HTML** or **JSP**, and click **OK**.

   You must create an HTML file or a JSP for each mode to add to your portlet. For example, to implement Help mode, create an HTML file to provide the help content.

6. In the resulting dialog, enter a file name for the HTML file or JSP and click **OK**.
7. In the visual editor, edit the content of the page to implement the desired functionality.

   For example, for Help mode, you could add the following HTML:

```
<p>This is the <i>Help</i> mode of your portlet!</p>
```

8. In the Application Navigator, right-click the `provider.xml` file for the provider that owns the portlet and choose **Open**.

   > **Tip:** The `provider.xml` file is located under **Web Content > WEB-INF > providers >** ***provider***.

9. Change the value of the appropriate tag for the mode you are adding to `true`.

   For example, if you are adding Help mode, change the `hasHelp` tag as follows:

   ```
   <hasHelp>true</hasHelp>
   ```

   This indicates to the PDK Framework that a link or icon to that mode should be rendered.

10. Add the code to point to the HTML page or JSP that you created earlier for the mode.

    For example, for the Help page, add the following code:

    ```
    <helpPage>/htdocs/myprovider/myportlet/myHelpPage.html</helpPage>
    ```

11. Save your changes.

60.3.3 How to Implement Public Parameters

PDK-Java and WebCenter Portal Framework provide public and private portlet parameters to enable you to easily write reusable, complex portlets. The Create Oracle PDK-Java Portlet wizard creates portlets that are set up to use parameters. This feature enables you to focus solely on adding business logic to your portlets and does not require any changes to `provider.xml`.

Using the Create Oracle PDK-Java Portlet wizard, you can easily create a portlet with public parameters. When you register the producer and drop the portlet on a page, the portlet's parameters are automatically linked to page variables.

> **Note:** Each portlet is limited to 4K of data. The lengths of parameter and event names, display names, and descriptions all contribute toward this 4K limit. Hence, you should not use too many parameters and events for each portlet, or give them lengthy names and descriptions.

To create a portlet with public parameters:

1. In JDeveloper, open the application that contains the portlet.
2. Right-click the project under which you want to create your portlet, and choose **New.**

   > **Note:** To create the portlet in an existing producer, right-click the producer's `provider.xml` file and choose **Add Portlet.** This takes you directly to the General Portlet Information page of the Create Oracle PDK-Java Portlet wizard.

3. In the New Gallery, expand **Web Tier,** select **Portlets** and then **Oracle PDK-Java Portlet,** and click **OK.**
4. Proceed through the Create Oracle PDK-Java Portlet wizard until you reach the Public Portlet Parameters page.

   See Section 60.2.1, "How to Create a PDK-Java Portlet" for basic information about going through the wizard.
5. On the Public Portlet Parameters page, click **Add.**

   This adds a new row to the table of parameters.
6. Replace the default values in the **Name, Display Name,** and **Description** fields with something more meaningful for your parameter.
7. Add more parameters as required and then click **Finish.**
8. In the Application Navigator, right-click the `provider.xml` file for the provider that owns the portlet and choose **Open.**

   The `provider.xml` file is located under **Web Content > WEB-INF > providers >** ***provider.***

   You should see entries for the parameters that you added on the Public Portlet Parameters page in the wizard, for example, as shown in Example 60–1.

Example 60–1 provider.xml Sample, Public Parameters

```
<?xml version = '1.0' encoding = 'UTF-8'?>
<?providerDefinition version="3.1"?>
<provider class="oracle.portal.provider.v2.DefaultProviderDefinition">
  <session>false</session>
  <passAllUrlParams>false</passAllUrlParams>
  <preferenceStore class=
     "oracle.portal.provider.v2.preference.FilePreferenceStore">
   <name>prefStore1</name>
   <useHashing>true</useHashing>
  </preferenceStore>
  <portlet class="oracle.portal.provider.v2.DefaultPortletDefinition">
      <id>1</id>
      <name>MyPortlet</name>
      <title>My Portlet</title>
      <description>My Portlet Description</description>
      <timeout>40</timeout>
      <showEditToPublic>false</showEditToPublic>
      <hasAbout>false</hasAbout>
      <showEdit>true</showEdit>
      <hasHelp>false</hasHelp>
      <showEditDefault>false</showEditDefault>
      <showDetails>false</showDetails>
      <inputParameter class=
        "oracle.portal.provider.v2.DefaultParameterDefinition">
       <name>Parameter_01</name>
       <displayName>Parameter_01</displayName>
       <description>My first parameter</description>
      </inputParameter>
      <inputParameter class=
        "oracle.portal.provider.v2.DefaultParameterDefinition">
       <name>Parameter_02</name>
       <displayName>Parameter_02</displayName>
       <description>My second parameter</description>
      </inputParameter>
      <inputParameter class=
        "oracle.portal.provider.v2.DefaultParameterDefinition">
       <name>Parameter_03</name>
       <displayName>Parameter_03</displayName>
      </inputParameter>
      <renderer class="oracle.portal.provider.v2.render.RenderManager">
         <renderContainer>true</renderContainer>
         <renderCustomize>true</renderCustomize>
         <autoRedirect>true</autoRedirect>
         <contentType>text/html</contentType>
         <showPage>/htdocs/myportlet/MyPortletShowPage.jsp</showPage>
         <editPage>/htdocs/myportlet/MyPortletEditPage.jsp</editPage>
      </renderer>
      <personalizationManager class=
        "oracle.portal.provider.v2.personalize.PrefStorePersonalizationManager">
       <dataClass>
        oracle.portal.provider.v2.personalize.NameValuePersonalizationObject
       </dataClass>
      </personalizationManager>
   </portlet>
</provider>
```

9. In the Application Navigator, right-click the *portletname*ShowPage.jsp for your portlet and choose **Open.**

   The file is located under **Web Content > htdocs >** ***provider*** **>** ***portlet.***

   The portlet includes logic for retrieving the parameters, for example, as shown in Figure 60–2.

Example 60–2 ShowPage.jsp Sample

```
<%@page contentType="text/html; charset=windows-1252"
        import="oracle.portal.provider.v2.render.PortletRenderRequest"
        import="oracle.portal.provider.v2.http.HttpCommonConstants"
        import="oracle.portal.provider.v2.ParameterDefinition"
%>
<%
   PortletRenderRequest pReq = (PortletRenderRequest)
      request.getAttribute(HttpCommonConstants.PORTLET_RENDER_REQUEST);
%>
<P>Hello <%= pReq.getUser().getName() %>.</P>
<P>This is the <b><i>Show</i></b> render mode!</P>
<%
   ParameterDefinition[] params =
       pReq.getPortletDefinition().getInputParameters();
%>
<p>This portlet's input parameters are...</p>
<table align="left" width="50%" ><tr><td><span
class="PortletHeading1">Name</span></td><td><span
class="PortletHeading1">Value</span></td></tr>
<%
   String name = null;
   String value = null;
   String[] values = null;
   for (int i = 0; i < params.length; i++)
   {
       name = params[i].getName();
       values = pReq.getParameterValues(name);
       if (values != null)
       {
           StringBuffer temp = new StringBuffer();
           for (int j = 0; j < values.length; j++)
           {
               temp.append(values[j]);
               if (j + 1 != values.length)
               {
                   temp.append(", ");
               }
           }
           value = temp.toString();
       }
       else
       {
           value = "No values have been submitted yet.";
       }
%>
<tr>
  <td><span class="PortletText2"><%= name %></span></td>
  <td><span class="PortletText2"><%= value %></span></td>
</tr>
<%
   }
%>
</table>
```

10. Add logic to your portlet that allows it to submit parameter values entered by users.

11. Create a second portlet using the same steps that simply displays parameter values that it retrieves.

12. Register the producer with a Portal Framework application. For more information, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

13. Add the two portlets to a page in the application. For more information, see Section 63.5, "Adding Portlets to a Page."

14. In the Structure window of the Application Navigator, right-click an element of the page and choose **Go to Page Definition.**

    The page definition should look similar to Example 60–3. Notice the variables at the page level and the parameters at the portlet level (indicated in bold).

Example 60–3 Page Definition File Sample

```
<?xml version="1.0" encoding="UTF-8"?>
<pageDefinition xmlns="http://xmlns.oracle.com/adfm/uimodel"
                version="10.1.3.38.90" id="untitled1PageDef"
                Package="view.pageDefs">
  <executables>
    <variableIterator id="variables">
      <variable Name="portlet1_Parameter_01" Type="java.lang.Object"/>
      <variable Name="portlet1_Parameter_02" Type="java.lang.Object"/>
      <variable Name="portlet1_Parameter_03" Type="java.lang.Object"/>
    </variableIterator>
    <portlet id="portlet1"
       portletInstance="/oracle/adf/portlet/PdkPortletProducer1_1153936627784
          /applicationPortlets/Portlet1_abfc5a10_010c_1000_8003_82235f50d831"
        class="oracle.adf.model.portlet.binding.PortletBinding"
        xmlns="http://xmlns.oracle.com/portlet/bindings">
      <parameters>
```

```
        <parameter name="Parameter_01" pageVariable="portlet1_Parameter_01"/>
        <parameter name="Parameter_02" pageVariable="portlet1_Parameter_02"/>
        <parameter name="Parameter_03" pageVariable="portlet1_Parameter_03"/>
      </parameters>
    </portlet>
  </executables>
</pageDefinition>
```

15. Run the application.

16. Enter values in the first portlet and the same values should be displayed in the second portlet.

60.3.4 How to Implement Private Parameters

In some cases, you might need a parameter that is known only to the portlet instance. These parameters are known as private parameters because they have no connection to the page and are known only to the portlet. Private parameters often come in handy when you are building navigation for your portlet. For example, if you have a portlet made up of multiple pages, then you can use private parameters to jump to another resource of the portlet.

This section includes the following topics:

- Section 60.3.4.1, "About Private Parameters"
- Section 60.3.4.2, "About Portlet URL Types"
- Section 60.3.4.3, "Building Links with the Portlet URL Types"
- Section 60.3.4.4, "Building Forms with the Portlet URL Types"
- Section 60.3.4.5, "Implementing Navigation within a Portlet"
- Section 60.3.4.6, "Restricting Navigation to Resources"

60.3.4.1 About Private Parameters

Private parameters are used in classic web applications to pass information from links or forms in the browser back to the server. The server in turn takes actions and returns the appropriate content. For example, if the user of a dictionary web site asks for information about hedgehogs, then the URL submitted to the server might append a private parameter as follows:

```
http://dictionary.reference.com/search?q=Hedgehog
```

If the server is responsible for rendering the whole page and the client communicates directly with the server, then this form of URL works well. In a Portal Framework application, the client does not communicate directly with portlets. Instead, WebCenter Portal Framework mediates between the client and the portlet. Moreover, because most pages have multiple portlets, WebCenter Portal Framework communicates with multiple portlets.

For example, suppose a page contains two portlets, a thesaurus portlet and a dictionary portlet. Both portlets use `q` as a parameter to record the search queries made by the user. If the user queries the thesaurus portlet, then the URL used to rerequest the page with the updated thesaurus portlet must contain the thesaurus portlet's parameter, `q`. The thesaurus parameter must also be distinguished from dictionary portlet parameter 1, which performs the same function for that portlet.

You must ensure that the portlet meets the following criteria:

- It properly qualifies its own parameters when they are built into links and forms.

- It leaves unchanged any parameters that do not belong to it.

The following API call transforms an unqualified parameter name into a qualified parameter name:

```
HttpPortletRendererUtil.portletParameter(HttpServletRequest request, String
param);
```

`HttpPortletRendererUtil` is in the package `oracle.portal.provider.v2.render.http`.

For example:

```
qualParamQ = HttpPortletRendererUtil.portletParameter(r, "q");
```

To fetch the value of a portlet parameter from the incoming request, you can use the following API:

> **Note:** The API converts the parameter name into the qualified parameter name before fetching the value from the incoming request. Hence, you need not perform this step.

```
PortletRenderRequest.getQualifiedParameter(String name)
```

`PortletRenderRequest` is in the package `oracle.portal.provider.v2.render`.

For example:

```
valueQ = r.getQualifiedParameter("q");
```

The other aspect of a portlet's responsibilities with private parameters is to not disturb the parameters on the URL that it does not own. The utilities you may use to ensure adherence to this rule are discussed in Section 60.3.4.3, "Building Links with the Portlet URL Types" and Section 60.3.4.4, "Building Forms with the Portlet URL Types."

60.3.4.2 About Portlet URL Types

When a portlet renders itself, WebCenter Portal Framework passes it various URLs, which the portlet can then use to render links. You can fetch and manipulate these URLs to simplify the task of creating links. The following is a list of the URLs provided to portlets:

- **PAGE_LINK** is a URL to the page upon which the portlet instance resides. You use this URL as the basis for all intraportlet links. If the portlet renders a link that navigates the user to another section of the same portlet, then this navigation must be encoded as a set of parameters using the PAGE_LINK.
- **DESIGN_LINK** is a URL to the portlet's personalization (Edit mode) page. A portlet's Edit and Edit Defaults modes are not rendered on the same page as the portlet. The Edit and Edit Defaults modes take over the entire browser window. The portlet's Edit and Edit Defaults modes are not necessarily accessible to every user. It represents a minimal, static framework in which the portlet is free to render its personalization options. This URL is only of use when rendering Personalize links.
- **BACK_LINK** is a URL to a useful return point from the current page where the portlet renders itself. For example, when the portlet is rendering its personalization page (Edit mode), this link refers to the page on which the portlet resides and from which the user navigated to the personalization page. Consequently, it is the link you encode in the buttons that accept or cancel the

pending action. This URL is only useful for the desktop rendering of portlets (usually in Edit or Edit Defaults mode).

60.3.4.3 Building Links with the Portlet URL Types

To build links with Portlet URL types, you must access them and use them when writing portlet rendering code. To fetch the URL for a link, you call the following APIs in PDK-Java:

```
portletRenderRequest.getRenderContext().getPageURL()
portletRenderRequest.getRenderContext().getEventURL()
portletRenderRequest.getRenderContext().getDesignURL()
portletRenderRequest.getRenderContext().getLoginServerURL()
portletRenderRequest.getRenderContext().getBackURL()
```

In portlet navigation, you must add (or update) your portlet's parameters in the page URL. To perform this task, you can use the following API to build a suitable URL:

```
UrlUtils.constructLink(
    PortletRenderRequest pr,
    int linkType, -- UrlUtils.PAGE_LINK in this case
    NameValue[] params,
    boolean encodeParams,
    boolean replaceParams)
```

`UrlUtils` resides in the package called `oracle.portal.provider.v2.url`. Notice that you do not actually fetch the page URL yourself. Rather you use the supplied portlet URL type, `UrlUtils.PAGE_LINK`.

The parameter names in the `params` argument should be fully qualified. Moreover, if you properly qualify the parameters, `UrlUtils.constructLink` with the appropriate `linkType` does not disturb other URL parameters that are not owned by the portlet.

An alternative version of `UrlUtils.contructLink` accepts a URL as the basis for the returned URL. If you require an HTML link, then you can use `UrlUtils.constructHTMLLink` to produce a complete anchor element.

The following example portlet, `ThesaurusLink.jsp`, uses the parameter `q` to identify the word for which to search the thesaurus. It then creates links on the found, related words that the user may follow to get the thesaurus to operate on that new word. To see the initial submission form that sets the value of `q`, see the example in Section 60.3.4.4, "Building Forms with the Portlet URL Types."

```
<%
    String paramNameQ = "q";
    String qualParamNameQ =
    HttpPortletRendererUtil.portletParameter(paramNameQ);
    PortletRenderRequest pRequest = (PortletRenderRequest)
        request.getAttribute(HttpCommonConstants.PORTLET_RENDER_REQUEST);
    String paramValueQ = pRequest.getQualifiedParameter(paramNameQ);
%>
<!-- Output the HTML content -->
<center>
    Words similar to <%= paramValueQ %>
    <br>
    Click the link to search for words related to that word.
    <br>
    <ul>
<%
        String[] relatedWords = Thesaurus.getRelatedWords(paramValueQ);
        NameValue[] linkParams = new NameValue[1];
        for (int i=0; i<=relatedWords.length; i++)
        {
            linkParams[0] = new NameValue(
                qualParamNameQ, relatedWords[i]);
%>
            <li>
            <b> <%= relatedWords[i] %> </b>
            <%= UrlUtils.constructHTMLLink(
                pRequest,
                UrlUtils.PAGE_LINK,
                "(words related to " + relatedWords[i] + ")",
                "",
                linkParams,
                true,
                true)%>
           </li>
<%
        }
%>
   </ul>
</center>
```

60.3.4.4 Building Forms with the Portlet URL Types

The use of portlet parameters in forms is similar to their use in links. The following two fundamental rules continue to apply:

- Qualify the portlet's parameter names.
- Do not manipulate or remove the other parameters on the incoming URL.

In terms of markup and behavior, forms and links differ quite considerably. However, just as with links, PDK-Java contains utilities for complying with these two basic rules.

A parameter name is just a string, whether it is a link on a page or the name of a form element. Therefore, the code for properly qualifying the portlet's parameter name is the same as that described in Section 60.3.4.3, "Building Links with the Portlet URL Types."

Forms differ from links in the way you ensure that the other parameters in the URL remain untouched. Once you open the form in the markup, you can make use of the following APIs:

```
UrlUtils.htmlFormHiddenFields(pRequest,UrlUtils.PAGE_LINK, formName);
UrlUtils.htmlFormHiddenFields(someURL);
```

where `formName = UrlUtils.htmlFormName(pRequest,null).`

> **Note:** Just as parameters in URLs and element names in forms require qualification to avoid clashing with other portlets on the page, form names must be fully qualified because any given page might have several forms on it.

The `htmlFormHiddenFields` utility writes HTML hidden form elements into the form, one form element for each parameter on the specified URL that is not owned by the portlet.

```
<INPUT TYPE="hidden" name="paramName" value="paramValue">
```

Thus, you need only to add their portlet's parameters to the form.

The other item of which you should be aware is how to derive the submission target of your form. In most cases, the submission target is the current page:

```
formTarget = UrlUtils.htmlFormActionLink(pRequest,UrlUtils.PAGE_LINK)
```

The value of `formTarget` can be the action attribute in an HTML form or the target attribute in a `SimpleForm`. Even though the method name includes HTML, it actually just returns a URL and thus you can use it in mobile portlets, too.

The following example form renders the thesaurus portlet's submission form. For the portlet that results from the submission of this form, see the example in Section 60.3.4.3, "Building Links with the Portlet URL Types."

```
<%
    String paramNameSubmit = "submit";
    String paramNameQ = "q";
    String qualParamNameQ =
        HttpPortletRendererUtil.portletParameter(paramNameQ);
    String qualParamNameSubmit =
    HttpPortletRendererUtil.portletParameter(paramNameSubmit);
    PortletRenderRequest pRequest = (PortletRenderRequest)
        request.getAttribute(HttpCommonConstants.PORTLET_RENDER_REQUEST);
    String formName = UrlUtils.htmlFormName(pRequest,"query_form");
%>
<!-- Output the HTML content -->
<center>
    <b>Thesaurus</b>
    Enter the word you want to search for
    <form name="<%= formName %>" method="POST"
        action="<%= UrlUtils.htmlFormActionLink(pRequest,UrlUtils.PAGE_LINK) %>">
        <%= UrlUtils.htmlFormHiddenFields(pRequest,UrlUtils.PAGE_LINK, formName)%>
        <table><tr><td>
            Word of interest:
        </td><td>
            <input
                type="text"
                size="20"
                name="<%= qualParamNameQ %>"
                value="">
        </td></tr></table>
        <input type=submit name="<%= qualParamNameSubmit %>" Value="Search">
    </form>
</center>
```

60.3.4.5 Implementing Navigation within a Portlet

You can implement navigation within a portlet in one of three ways:

- Pass navigation information in rendered URLs using private portlet parameters. Branching logic within the portlet code then determines which section of the portlet to render based on the URL. This option represents a small extension to the thesaurus example presented in Section 60.3.4.3, "Building Links with the Portlet URL Types" and Section 60.3.4.4, "Building Forms with the Portlet URL Types." Basically, instead of performing thesaurus search operations using the value of parameter `q`, the portlet branches based on the parameter value and renders different content accordingly.

- Pass navigation information as described in the previous item but use PDK-Java to interpret the parameter and thus branch on its value. This option requires some further changes to the thesaurus example and is more fully explained later in this section.
- Use session storage to record the portlet state and private parameters to represent actions rather than explicit navigation. This method provides the only way that you can restore the portlet to its previous state when the user navigates off the page containing the portlet. Once the user leaves the page, all private portlet parameters are lost and you can only restore the state from session storage, assuming you previously stored it there. This option requires that you understand and implement session storage. For more information about implementing session storage, see Section 60.3.6, "How to Access Session Information."

The following portlet code comes from the multi-page example in the sample producer of PDK-Java:

```
<portlet>
    <id>11</id>
    <name>Multipage</name>
    <title>MultiPage Sample</title>
    <shortTitle>MultiPage</shortTitle>
    <description>
        This portlet depicts switching between two screens all
        in an application page.
    </description>
    <timeout>40</timeout>
    <timeoutMessage>MultiPage Sample timed out</timeoutMessage>
    <renderer class="oracle.portal.provider.v2.render.RenderManager">
        <contentType>text/html</contentType>
        <showPage>/htdocs/multipage/first.jsp</showPage>
        <pageParameterName>next_page</pageParameterName>
    </renderer>
</portlet>
```

Note: The value of `pageParameterName` is the name of a portlet parameter, `next_page`, that the PDK-Java framework intercepts and interprets as an override to the value of the `showPage` parameter. If the PDK-Java framework encounters the qualified version of the parameter when the multipage portlet is requested, then it renders the resource identified by `next_page` rather than `first.jsp`. PDK-Java does not render the parameter within the portlet, that responsibility falls to the portlet.

You can modify the thesaurus example to operate with the use of this parameter. Specifically, you can use the form submission portlet to be the input for the thesaurus (the first page of the portlet), then navigate the user to the results page, which contains links to drill further into the thesaurus. The following examples illustrate these changes.

> **Note:** The example that follows is most useful for relatively simple cases, such as this thesaurus example. If your requirements are more complex (for example, you want to build a wizard experience), then you should consider using an MVC framework such as Struts. For information about how to build portlets from struts applications, see Section 60.6, "Creating a Struts Portlet."

ThesaurusForm.jsp:

```
<%
    PortletRenderRequest pRequest = (PortletRenderRequest)
        request.getAttribute(HttpCommonConstants.PORTLET_RENDER_REQUEST);
    String paramNameSubmit = "submit";
    String paramNameQ = "q";
    String qualParamNameQ =
        HttpPortletRendererUtil.portletParameter(pRequest, paramNameQ);
    String qualParamNameSubmit =
    HttpPortletRendererUtil.portletParameter(pRequest, paramNameSubmit);
    String formName = UrlUtils.htmlFormName(pRequest,"query_form");
%>
<!-- Output the HTML content -->
<center>
    <b>Thesaurus</b>
    Enter the word you want to search for
    <form name="<%= formName %>" method="POST"
        action="<%= UrlUtils.htmlFormActionLink(pRequest,UrlUtils.PAGE_LINK) %>">
        <%= UrlUtils.htmlFormHiddenFields(pRequest,UrlUtils.PAGE_LINK, formName)
%>
        <%= UrlUtils.emitHiddenField(
                HttpPortletRendererUtil.portletParameter(request, "next_page"),
                "htdocs/path/ThesaurusLink.jsp" ) %>
        <table><tr><td>
            Word of interest:
        </td><td>
            <input
                type="text"
                size="20"
                name="<%= qualParamNameQ %>"
                value="">
        </td></tr></table>
        <input type=submit name="<%= qualParamNameSubmit %>" Value="Search">
    </form>
</center>
```

Notice how next_page must be explicitly set to point to ThesaurusLink.jsp. If you do not explicitly set next_page in this way, then it defaults to the resource registered in provider.xml, which is ThesaurusForm.jsp.

ThesaurusLink.jsp:

```
<%
    PortletRenderRequest pRequest = (PortletRenderRequest)
        request.getAttribute(HttpCommonConstants.PORTLET_RENDER_REQUEST);
    String paramNameQ = "q";
    String paramNameNextPage = "next_page";
    String qualParamNameQ =
    HttpPortletRendererUtil.portletParameter(pRequest, paramNameQ);
    String qualParamNameNextPage =
        HttpPortletRendererUtil.portletParameter(pRequest, paramNameNextPage);
    String paramValueQ = pRequest.getQualifiedParameter(paramNameQ);
%>
<!-- Output the HTML content -->
<center>
    Words similar to <%= paramValueQ %>
    <br>
    Click the link to search for words related to that word.
    <br>
    <ul>
<%
        Thesaurus t = new Thesaurus();
        String[] relatedWords = t.getRelatedWords(paramValueQ);
        NameValue[] linkParams = new NameValue[2];
        linkParams[0] = new NameValue(
            qualParamNameNextPage, "htdocs/path/ThesaurusLink.jsp");
        for (int i=0; i<relatedWords.length; i++)
        {
            linkParams[1] = new NameValue(
                qualParamNameQ, relatedWords[i]);
%>
            <li>
            <b> <%= relatedWords[i] %> </b>
            <%= UrlUtils.constructHTMLLink(
                pRequest,
                UrlUtils.PAGE_LINK,
                "(words related to " + relatedWords[i] + ")",
                "",
                linkParams,
                true,
                true)%>
           </li>
<%
        }
%>
   </ul>
   <a href="<%=XMLUtil.escapeXMLAttribute
               (pRequest.getRenderContext().getPageURL())%>">
      Reset Portlet
   </a>
</center>
```

60.3.4.6 Restricting Navigation to Resources

One limitation of implementing navigation with private parameters is that users could potentially navigate to portlet resources that you prefer to restrict. To control navigation to restricted resources, you can create a *whitelist* of acceptable resources to which a user may navigate. If you do not construct a whitelist to restrict navigation, then your portlet's resources are accessible according to the following default rules:

- Any path immediately beneath the servlet root context is navigable. For example, /index.jsp is accessible but /WEB-INF/web.xml is not.
- Any path under the htdocs directory is navigable. For example, both /htdocs/multipage/first.jsp and /htdocs/lottery/lotto.jsp are accessible.

To change this default behavior, you can add allowable path values to the provider definition file, provider.xml. For example, suppose you have a portlet where a JSP is used as a controller to forward requests to other pages depending on the pageParameterName private parameter. The XML excerpt in Example 60–4 allows resources under /htdocs/multiportlet to be shown. All other resources are restricted.

Example 60–4 Whitelist Excerpt from the provider.xml File

```
<portlet class="oracle.portal.provider.v2.DefaultPortletDefinition">
   <id>1</id>
   <name>Multipage</name>
   <title>A MultiPage Portlet</title>
   ...
   <renderer class="oracle.portal.provider.v2.render.RenderManager">
          <contentType>text/html</contentType>
          <showPage>/htdocs/multiportlet/controller.jsp</showPage>
          <pageParameterName>show_page</pageParameterName>
          <allowedPath>/htdocs/multiportlet/*</allowedPath>
   </renderer>
</portlet>
```

The pattern matching rules for this feature are similar to URL pattern matching in `web.xml` files. The rules are as follows:

- To match the defined patterns, the resource path must exactly match unless wildcards are used.
- The first wildcard is for path matching and consists of a string beginning with `/` and ending with `/*`. Any resource whose path starts with this string is matched. For an `<allowedPath>` value of `/htdocs/sub1/*`, valid values of the private parameter include `/htdocs/sub1/file.jsp` and `/htdocs/sub1/sub2/file2.jsp`.
- The second wildcard is for file type matching and consists of a string starting with `*.` and ending with a file extension. Valid values for the page parameter end with that file extension. For an `<allowedPathvalue>` of `*.jsp`, valid values of the private parameter include `/htdocs/sub1/file.jsp` and `/htdocs/sub1/file2.jsp`.

60.3.5 How to Use JNDI Variables

When writing Java portlets, you may set deployment-specific properties through the JNDI service such that their values may be retrieved from your producer code. In this way, you can specify any property in a producer deployment and then easily access it anywhere in your producer code.

You can use JNDI variables to change producer property values after the producer has been deployed. The environment entry must be declared in `web.xml`. It can then be updated on deployment using a deployment plan.

PDK-Java provides utilities to enable the retrieval of both producer and non-producer JNDI variables within a Java EE container.

This section includes the following topics:

- Section 60.3.5.1, "Declaring JNDI Variables"
- Section 60.3.5.2, "Setting JNDI Variable Values"
- Section 60.3.5.3, "Retrieving JNDI Variables"

60.3.5.1 Declaring JNDI Variables

You declare JNDI variables in the `web.xml` file for your producer. The format for declaring a JNDI variable is as follows:

```
<env-entry>
    <env-entry-name>variableName</env-entry-name>
    <env-entry-type>variableType</env-entry-type>
    <env-entry-value>variableValue</env-entry-value>
</env-entry>
```

The `env-entry-name` element contains the name by which you want identify the variable. `env-entry-type` contains the fully qualified Java type of the variable. `env-entry-value` contains the variable's default value.

This section includes the following topics:

- Section 60.3.5.1.1, "Variable Types"
- Section 60.3.5.1.2, "Variable Naming Conventions"
- Section 60.3.5.1.3, "Examples"

60.3.5.1.1 Variable Types In the `env-entry-type` element, you must supply the fully qualified Java type of the variable, which is expected by your Java code. The Java types you may use in your JNDI variables are as follows:

- `java.lang.Boolean`
- `java.lang.String`
- `java.lang.Integer`
- `java.lang.Double`
- `java.lang.Float`

The Java EE container uses these type declarations to automatically construct an object of the specified type and gives it the specified value when you retrieve that variable in your code.

60.3.5.1.2 Variable Naming Conventions The PDK-Java defines environment variables that can be set at the individual producer service level or at the web application level. To avoid naming conflicts between different producer services or different application components packaged in the same web application, Oracle recommends you devise some naming convention.

> **Note:** If you use the `EnvLookup` method, then you must use `oracle/portal/provider/service/property`. You cannot substitute your own company name or component in this case.

For example:

- Producer service-specific names should be of the form:

  `company``/`*`component name`*`/`*`producer name`*`/`*`variable name`*

- Shared names must be of the form:

  `company``/`*`component name`*`/`*`producer name`*`/global`

where:

- *`company`* is the name of the company owning the application.
- *`component name`* is the name of the application or component with which the producer is associated.
- *`producer name`* is the service name of the producer.
- *`variable name`* is the name of the variable itself.

As you can see, these naming conventions are similar to those used for Java packages. This approach minimizes the chance of name collisions between applications or application components. PDK-Java provides utilities that enable you to retrieve variables in this form without hard coding the service name of the producer into your servlets or JSPs. The service name need only be defined in the producer's WAR file. For more information about retrieving JNDI variables, see Section 60.3.5.3, "Retrieving JNDI Variables."

60.3.5.1.3 Examples The following examples illustrate producer variable names:

```
oracle/portal/myProvider/myDeploymentProperty
oracle/portal/myprovider/myProperties/myProperty
```

The following example illustrates non-producer variable names:

```
oracle/portal/myOtherProperty
```

60.3.5.2 Setting JNDI Variable Values

In your producer deployment, you may want to set a new value for some or all of your JNDI variables. You can perform this task by setting the values manually within a WLS deployment plan. Deployment plans can be created for the producer deployment through the WLS console.

To set variable values manually within a deployment plan:

1. Go to the producer deployment with the WLS console and create a new deployment plan if one does not exist.
2. Edit the deployment plan XML file. For each deployment property you want to set, add the following variable definition directly under the `<deployment-plan>` tag:

   ```
   <variable-definition>
     <variable>
       <name>jndi_var_def</name>
       <value>false</value>
     </variable>
   </variable-definition>
   ```

3. To tie this variable definition to the actual JNDI variable, add the following for each property under the `WEB-INF/web.xml` module descriptor (`oracle/portal/sample/rootDirectory` is used as an example):

   ```
   <module-descriptor external="false">
     <root-element>web-app</root-element>
     <uri>WEB-INF/web.xml</uri>
     <variable-assignment>
       <name>jndi_var_def</name>

   <xpath>/web-app/env-entry/[env-entry-name="oracle/portal/sample/rootDirectory"]
   /env-entry-value</xpath>
      </variable-assignment>
   </module-descriptor>
   ```

4. Save and close the file.
5. Select Update on the producer deployment to apply the deployment plan for the new settings to take effect.

60.3.5.3 Retrieving JNDI Variables

JNDI is a standard Java EE technology. As such, you can access JNDI variables through Java EE APIs. For example:

```
String myVarName = "oracle/portal/myProvider/myVar"
String myVar = null;
try
{
   InitialContext ic = new InitialContext();
   myVar = (String)ic.lookup("java:env/" + myVarName);
}
catch(NamingException ne)
{
   exception handling logic
}
```

In addition to the basic Java EE APIs, PDK-Java includes a simple utility class for retrieving the values of variables defined and used by the PDK itself. These variables conform to the naming convention described in Section 60.3.5.1.2, "Variable Naming Conventions" and are of the form:

```
oracle/portal/provider_service_name/variable_name
oracle/portal/variable_name
```

To use these APIs, you need only provide the *provider_service_name* and the *variable_name*. The utilities construct the full JNDI variable name, based on the information you provide, and look up the variable using code similar to that shown earlier and return the value of the variable.

The EnvLookup class (oracle.portal.utils.EnvLookup) provides two lookup() methods. One retrieves producer variables and the other retrieves non-producer variables. Both methods return a java.lang.Object, which can be cast to the Java type you are expecting.

The following code example illustrates the retrieval of a producer variable:

```
EnvLookup el = new EnvLookup();
String s = (String)el.lookup(myProviderName, myVariableName);
```

myProviderName represents the service name for your producer, which makes up part of the variable name. *myVariableName* represents the portion of the variable name that comes after the producer's service name. The example assumes the variable being retrieved is of type java.lang.String.

To retrieve a non-producer variable, you use the same code, you pass only one parameter, the variable name, to the lookup(), again excluding the oracle/portal prefix.

```
EnvLookup el = new EnvLookup();
Object o = el.lookup(myVariableName);
```

Table 60–1 shows the JNDI variables provided by default with PDK-Java. If you do not declare these variables, then PDK-Java looks for their values in their original locations (web.xml and the deployment properties file).

Table 60–1 PDK-Java JNDI Variables

Variable	Description
oracle/portal/provider/*provider_name*/autoReload	Boolean auto reload flag. Defaults to true.

Table 60–1 (Cont.) PDK-Java JNDI Variables

Variable	Description
`oracle/portal/provider/`*`provider_name`*`/definition`	Location of producer's definition file.
`oracle/portal/provider/global/log/logLevel`	Log setting (0 through 8). 0 being no logging and 8 the most possible logging.
`oracle/portal/provider/`*`provider_name`*`/maxTimeDifference`	Producer's HMAC time difference.
`oracle/portal/provider/<service_name>/resourceUrlKey`	Authentication key for resource proxying through the Parallel Page Engine. For more information, see the *Administrator's Guide for Oracle Portal*.
`oracle/portal/provider/`*`provider_name`*`/rootDirectory`	Location for producer personalizations. No default value.
`oracle/portal/provider/`*`provider_name`*`/sharedKey`	HMAC shared key. No default value.
`oracle/portal/provider/`*`provider_name`*`/showTestPage`	(non-producer) A Boolean flag that determines if a producer's test page is accessible. Defaults to true.
`oracle/portal/provider/global/transportEnabled`	A Boolean flag that determines whether Edit Defaults personalizations may be exported and imported.

60.3.6 How to Access Session Information

When a user accesses a page, it initiates a public, unauthenticated session and tracks information about the session across requests. If the user logs in, then this session becomes an authenticated session of the logged-in user. This session terminates when any of the following occur:

- The browser session terminates (that is, the user closes all the browser windows).
- The user explicitly logs out.
- The session times out because the user's idle time exceeds the configured limit.

As part of the metadata generation, all of the producers that contribute portlets to the page are contacted, if they specified during registration that they be called for some special processing. This call allows producers to do processing based on the user session, log the user in the producer's application if needed, and establish producer sessions. For producers, this call is referred to as `initSession`. As most web-enabled applications track sessions using cookies, this API call enables the producer of the application to return cookies.

You can use the session store to save and retrieve information that persists during the portal session. This information is only available, and useful, to you during the life of the session. You should store only temporary information in the session store. Application developers may use the session store to save information related to the current user session. Data in the session store can be shared across portlets.

If the information you want to store must persist across sessions, then you may want to store it in the preference store instead. Some common applications of the session store are as follows:

- To cache data that is expensive to load or calculate (for example, search results).
- To cache the current state of a portlet (for example, the current range, or page, of search results displayed in the portlet, or sequence of events performed by user).

Before you implement session storage, you should carefully consider the performance costs. Because portlets and producers are remote, it can be a relatively expensive operation to create and maintain even a small amount of information in the session store. For this reason, you may want to avoid altogether any session storage for public pages that are accessed frequently by many users.

Furthermore, while using the session store with producers, you create a stateful application that tracks state information in memory. Similarly, you create a stateful application if you use the file-system implementation of preference store.

If scalability is an important concern for you, then a stateful application may cause you problems. Stateful applications can affect the load-balancing and failover mechanism for your configuration. Even though you may deploy multiple middle-tiers, you must implement sticky routing (where the same node handles subsequent requests in the same session) to track state. Sticky routing may result in lopsided load-balancing or loss of session data in case a node crashes, affecting failover. This issue is one reason why many developers prefer to build stateless applications. However, if scalability is not a concern, then a stateful application should present no problems for you.

The PDK Framework represents the session with a `ProviderSession` object, which is established during the call to the Provider Instance's `initSession` method. This object is associated with the `ProviderUser`. To make data persistent between requests, you must write data into the session object using the `setAttribute` method on the `ProviderSession` object. This method maps a `java.lang.Object` to a `java.lang.String` and stores that mapping inside the session object. The `String` can then be used to retrieve the `Object` during a subsequent request, provided the session is still valid.

A producer session may become invalid for the following reasons:

- The session times out.
- The `invalidate` method on `ProviderSession` is called.
- The JVM process running the servlet container is terminated.

All portlets contained by the same `ProviderInstance` share the same session for a particular `ProviderUser`. Therefore, data unique to a particular portlet instance must be mapped to a unique `String` in the session. This is accomplished using the `portletParameter` method in the `PortletRendererUtil` class. This method makes a supplied `String` parameter or attribute name unique to a `PortletInstance`, by prefixing it with a generated identifier for that instance. You can use the returned instance-specific name to write portlet instance data into the session.

For more detailed information about the PDK Framework classes, see the JavaDoc in the *Oracle Fusion Middleware Java API Reference for Oracle PDK-Java* at:

http://docs.oracle.com/cd/E23943_01/apirefs.1111/e10691/index.html?overview-summary.html

In the example in this section, session storage is used to count the number of times your portlet has rendered in Shared Screen mode.

To implement session storage:

- Import `ProviderSession`, `PortletRendererUtil`, and `HttpPortletRendererUtil`.
- Retrieve the producer session.
- Read and write the session by accessing it from within your Java portlet.
- Set the session to true in `provider.xml`.
- Register the producer for session storage and set the Login Frequency.

The steps that follow describe how to add a session count to your portlet that displays how many times the portlet has been rendered for the current session.

1. After using the wizard to create a portlet, you can edit the JSP for the Show page in Oracle JDeveloper. You must import the following classes:

```
<%@page contentType="text/html; charset=windows-1252"
import="oracle.portal.provider.v2.render.PortletRenderRequest"
import="oracle.portal.provider.v2.http.HttpCommonConstants"
import="oracle.portal.provider.v2.ProviderSession"
import="oracle.portal.provider.v2.render.PortletRendererUtil"
import="oracle.portal.provider.v2.render.http.HttpPortletRendererUtil"
%>
```

2. Insert code that checks for a valid session first and then increments the count and displays it. If the session is valid and a previously stored value exists, then you display the value, increment the count, and store the new value. If the session is valid but no previously stored value exists, then you initialize a new count starting with 1, and display and store the value. You also want to obtain the unique string key for this portlet and then use an it in an array to count the session. If no session information was received, then you want to provide information to the user indicating they may need to log in again.

```
<%
PortletRenderRequest pReq = (PortletRenderRequest)
request.getAttribute(HttpCommonConstants.PORTLET_RENDER_REQUEST);
ProviderSession pSession = pReq.getSession();
  if (pSession != null)
  {
    String key = PortletRendererUtil.portletParameter(pReq, "count");
    Integer i = (Integer)pSession.getAttribute(key);
    if (i == null)
    {
      i = new Integer(0);
    }
    i = new Integer(i.intValue()+1);
    pSession.setAttribute(key, i);
%>

<p>Render count in this session: <%=i%> </p>

<%
  }
  else
  {
%>

<p>The session has become invalid</p>
<br>
Please log out and log in again.
<%
  }
```

```
%>
```

3. By default, the wizard does not set session to true in `provider.xml`. You must update this flag in order for the producer to receive session information from the portal. You should only set this tag to true if you are using session information in your producer or portlets. By setting this flag to true, extra load is added to the producer calls.

   ```
   <provider class="oracle.portal.provider.v2.DefaultProviderDefinition">
   <session>true</session>
   ```

4. Register your producer with session support. For a reminder on how to register your portlet, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

5. If you have not added your Java portlet to a page, then do so now. Ensure that you perform the following tasks:

   - Refresh the producer to accept the new changes.
   - Re-login in case your session is no longer valid.

60.3.7 How to Enhance PDK-Java Portlet Performance with Caching

When you have completed the basic functionality of your portlet, you may want to turn your attention to portlet performance.

Caching is a common technique for enhancing the performance of web sites that include a great deal of dynamic content. JSR 286 portlets support expiry-based and validation-based caching.

For more information about caching, see Section 57.4.5, "Portlet Performance."

This section includes the following topics:

- Section 60.3.7.1, "Activating Caching for PDK-Java Portlets"
- Section 60.3.7.2, "Implementing Expiry-Based Caching in PDK-Java Portlets"
- Section 60.3.7.3, "Implementing Validation-Based Caching in PDK-Java Portlets"

60.3.7.1 Activating Caching for PDK-Java Portlets

To use the caching features in your producers, you must first activate the middle tier cache. This cache is known as the PL/SQL Cache because it is the same cache used by `mod_plsql`, the Oracle HTTP Server plug-in that calls database procedures, and hence database producers, over HTTP.

Usually, your administrator is responsible for the configuration details of caching.

60.3.7.2 Implementing Expiry-Based Caching in PDK-Java Portlets

Expiry-based caching is a simple caching scheme to implement, and can be activated declaratively in your XML producer definition. You can set an expiry time for the output of any `ManagedRenderer` you use by setting its `pageExpires` property to the number of minutes you want the output to be cached for.

To add expiry-based caching:

1. After you have used the Create Oracle PDK-Java Portlet wizard to build a portlet as described in Section 60.2.1, "How to Create a PDK-Java Portlet," edit the `provider.xml` file and set the `pageExpires` property tag of `showPage` to the

required value. For example, to cache portlet output for 1 minute, set pageExpires to 1.

By default the wizard generates a standard and compressed tag for showPage. Expand the tag to include a subtag of pageExpires:

```
<showPage class="oracle.portal.provider.v2.render.http.ResourceRenderer">
   <resourcePath>/htdocs/mycacheportlet/MyCachePortletShowPage.jsp
      </resourcePath>
   <pageExpires>1</pageExpires>
</showPage>
```

2. Test that the portlet is cached for 1 minute by adding some JSP code to your show page. You can simply add the current time to your JSP.

```
<%@page contentType="text/html; charset=windows-1252"
   import="oracle.portal.provider.v2.render.PortletRenderRequest"
   import="oracle.portal.provider.v2.http.HttpCommonConstants"
   import="java.util.Date"
   import="java.text.DateFormat"
%>

<%
 PortletRenderRequest pReq = (PortletRenderRequest)
   request.getAttribute(HttpCommonConstants.PORTLET_RENDER_REQUEST);
 DateFormat df = DateFormat.getDateTimeInstance(DateFormat.LONG,
   DateFormat.LONG,pReq.getLocale());
 String time = df.format(new Date());
%>

<P>Hello <%=pReq.getUser().getName() %>.</P>
<P>This is the <b><i>Edit</i></b> render mode!</P>
<P>This information is correct as of <%=time%>.</P>
```

When viewing the portlet, you see that the time (including seconds) is constant for one minute. After the time has expired, the portlet displays the most current time and a new cache is set.

60.3.7.3 Implementing Validation-Based Caching in PDK-Java Portlets

Adding validation-based caching requires slightly more effort, but gives you explicit control over exactly which requests to your producer are cache hits. As an example, you may want to update the cache only when data within the portlet has changed. To implement this algorithm, you must override the prepareResponse method. The signature of the BaseManagedRenderer.prepareResponse method is:

```
public boolean prepareResponse(PortletRenderRequest pr)
                        throws PortletException,
                               PortletNotFoundException
```

In your version of prepareResponse(), do the following:

- Retrieve the cached version identifier set by the consumer in the render request by calling the HttpPortletRendererUtil.getCachedVersion() method:

```
public static java.lang.String getCachedVersion
    (PortletRenderRequest request)
```

- If the portlet finds the previously cached version valid, then the appropriate header must be set by calling the HttpPortletRendererUtil.useCachedVersion()

method. It also instructs the RenderManager that it is not necessary to call renderBody() to render the portlet body.

```
public static void useCachedVersion(PortletRenderRequest request)
```

Otherwise, use HttpPortletRendererUtil.setCachedVersion() to generate a new version of the portlet, which is cached. It also indicates to the consumer that the renderBody() method has to be called to regenerate the portlet content.

```
public static void setCachedVersion(PortletRenderRequest request,
                                    java.lang.String version,
                                    int level)
                             throws java.lang.IllegalArgumentException
```

For validation-based caching, you need not update provider.xml. You can view the portlet by refreshing the page or adding the portlet to a page and updating the content. If the content has changed, then the portlet shows the new content. If the content has not changed, then a cached version of the portlet is displayed.

60.3.8 How to Manage the Persistence Store for PDK-Java Portlets

The portlet persistence store is used for persisting consumer registration handles and portlet preference data. PDK-Java portlet producers can use one of two types of persistence store: File or Database. The database used for the persistence store must be JDBC-compatible.

For more information, see Section 57.4.4, "Portlet Personalization and Customization."

This section includes the following topics:

- Section 60.3.8.1, "Setting up a Persistence Store for a PDK-Java Producer"
- Section 60.3.8.2, "Migrating a PDK-Java Producer Persistence Store"

60.3.8.1 Setting up a Persistence Store for a PDK-Java Producer

The type of persistence store used for PDK-Java producers is determined by the preferenceStore tag in the provider.xml file.

Table 60–2 lists and describes the attributes and parameters used with the preferenceStore tag.

Table 60–2 Attributes and Parameters of the preferenceStore Tag

Attribute/Parameter	Description

`class`	This required attribute specifies the Java class that defines the location and other details of portlet preferences. For example, a file-based persistence store might use:
	`<preferenceStore class="oracle.portal.provider.v2.preference.FilePreferenceStore">`
	A database persistence store might use:
	`<preferenceStore class="oracle.portal.provider.v2.preference.DBPreferenceStore">`
	OmniPortlet uses its own class, for example:
	`<preferenceStore class="oracle.webdb.reformlet.ReformletFilePreferenceStore">`

`name`	This required parameter provides a name for the persistence store. Use any value you choose. For example:
	`<preferenceStore class="oracle.portal.provider.v2.preference.DBPreferenceStore">`
	`<name>MyPDKProducerPreferenceStore</name>`
	`</preferenceStore>`

`connection`	This required parameter for a database persistence store points to a JNDI connection that connects with a schema containing the portlet persistence store. For example:
	`<preferenceStore class="oracle.portal.provider.v2.preference.FCFDBPreferenceStore">`
	`<name>MyPDKProducerPreferenceStore</name>`
	`<connection>java:comp/env/jdbc/portletPrefs</connection>`
	`</preferenceStore>`

`rootDirectory`	This optional parameter specifies the location where the file-based persistence store preferences are stored. When this parameter is not included with the `preferenceStore` tag, the default file-based persistence store location is used. This is the same folder where the producer's provider definition file is stored.

`useHashing`	This optional parameter is used when specifying a file based persistence store, and accepts the value `true` or `false`. When it is set to `true`, each preference data file is stored in an extra subdirectory with a name determined by hashing the data file name. Using this parameter can improve file system performance by limiting the number of preference data files stored in a single directory.
	For example:
	`<preferenceStore class="oracle.portal.provider.v2.preference.FilePreferenceStore">`
	`<name>PDKProducerPreferenceStore</name>`
	`<useHashing>true</useHashing>`
	`</preferenceStore>`

60.3.8.2 Migrating a PDK-Java Producer Persistence Store

PDK-Java has two `PreferenceStore` implementations, `DBPreferenceStore` and `FilePreferenceStore`. `DBPreferenceStore` persists data using a JDBC-compatible relational database and `FilePreferenceStore` persists data using the file system.

If you have installed Oracle PDK-Java, then you can manage the information stored in the persistence store by using the Preference Store Migration and Upgrade Utility, which is included in the `pdkjava.jar` file. Note that you must run this tool from `WC_ORACLE_HOME`.

Note: You must set the classpath when running this tool to include `pdkjava.jar`, `ptlshare.jar`, and `ojdbc6.jar`. For example:

```
java -classpath WC_ORACLE_HOME\wlserver_10.3\server\lib\ojdbc6.jar;

WC_ORACLE_HOME\jdeveloper\webcenter\modules\oracle.portlet.server_
11.1.1\pdkjava.jar;
WC_ORACLE_HOME\jdeveloper\webcenter\modules\oracle.portlet.server_
11.1.1\ptlshare.jar
oracle.portal.provider.v2.preference.MigrationTool
```

The syntax of the migration utility is:

```
java oracle.portal.provider.v2.preference.MigrationTool
  -mode [file | db | filetodb | filetofile | dbtofile | dbtodb]
  [-remap language | locale]
  [-countries iso_country_code]
  [-pref1UseHashing true | false]
  [-pref1Driver driver]
  {-pref1RootDirectory directory |
   -pref1User username -pref1Password password -pref1URL url}
  [-pref2UseHashing true | false]
  [-pref2Driver driver]
  {-pref2RootDirectory directory |
   -pref2User username -pref2Password password -pref2URL url}
  [-upfixwpi filename]
```

where

- `-mode` is the mode in which you want to run the Preference Store Migration and Upgrade Utility

  `filetodb`, `filetofile`, `dbtofile`, or `dbtodb` indicates to run in migration mode. See Section 60.3.8.2.1, "Migration Mode" for more information about this mode.

  `file` or `db` indicates to run in upgrade mode. See Section 60.3.8.2.2, "Upgrade Mode" for more information about this mode.

- `-remap` is the `localePersonalizationLevel` (language or locale). Note that you only must use this option to change `localePersonalizationLevel` as part of your upgrade or migration.
- `-countries` specifies a prioritized list of ISO country codes, indicating your order of preference in a collision between remapped preferences for different countries. `-countries` is only meaningful if you also specified the `-remap` option.
- `-pref1UseHashing` specifies whether you want to employ hashing on the source for this operation.
- `-pref1Driver` is the driver for the source database. If you do not specify this parameter, the nearest matched driver is used.
- `-pref1RootDirectory` is the path of a source file system, for example, `j2ee/home/applications/jpdk/jpdk/WEB-INF/providers/sample`.
- `-pref1User` is the user name for a source database.
- `-pref1Password` is the password for a source database.
- `-pref1URL` is the URL to a source database, for example, `jdbc:oracle:thin:@myserver.mydomain.com:1521:mysid`.

- `-pref2UseHashing` specifies whether you want to employ hashing on the destination for this operation.
- `-pref2Driver` is the driver for the destination database. If you do not specify this parameter, the nearest matched driver is used.
- `-pref2RootDirectory` is the path of a destination file system, for example, `j2ee/home/applications/jpdk/jpdk/WEB-INF/providers/sample`.
- `-pref2User` is the user name for a destination database.
- `-pref2Password` is the password for a destination database.
- `-pref2URL` is the URL to a destination database, for example, `jdbc:oracle:thin:@myserver.mydomain.com:1521:mysid`.
- `-upfixwpi` indicates a log file for the operation.

This section includes the following subsections:

- Section 60.3.8.2.1, "Migration Mode"
- Section 60.3.8.2.2, "Upgrade Mode"

60.3.8.2.1 Migration Mode Use a migration mode to copy data from a source persistence store to a target persistence store. When the utility is run in this mode, the persistence stores for all the portlet definitions are updated.

Table 60–3 describes the migration modes in which you can run the utility.

Table 60–3 Migration Modes in Which to Run the Utility

Mode	Description
`filetodb`	Use when data must be copied from a `FilePreferenceStore` to a `DBPreferenceStore`.
`filetofile`	Use when data must be copied from one `FilePreferenceStore` to another `FilePreferenceStore` that is in a different location.
`dbtofile`	Use when data must be copied from a `DBPreferenceStore` to a `FilePreferenceStore`.
`dbtodb`	Use when data must be copied from one `DBPreferenceStore` to another `DBPreferenceStore` that is based on a different database table.

If the destination for the operation is a database, you must ensure that the destination WebLogic Server is created using the WebCenter Portal portlet template and the appropriate schemas have been created using the RCU. For more information, see the *Installation Guide for Oracle WebCenter Portal*.

When using a migration mode, you can also use the `-remap` and `-countries` options to specify that the data must be upgraded while being migrated. Specifically, you use these options to ensure that the locale-specific preferences are appropriately remapped.

You can use the other options accepted by the utility to specify the properties of the persistence stores involved in the upgrade or migration process. These options must correspond to the tags you specify in `provider.xml` to describe the persistence stores.

Properties beginning with the prefix `-pref1` correspond to properties of the source persistence store (in an upgrade mode, this is the only persistence store). For example, specifying `-pref1UseHashing true -pref1RootDirectory` j2ee/home/applications/jpdk/jpdk/WEB-INF/providers/sample sets the useHashing and rootDirectory properties of a source FilePreferenceStore.

When a migration basic mode is selected, properties beginning with the prefix -pref2 correspond to properties of the target persistence store. For example, specifying -pref2User portlet_prefs -pref2Password portlet_prefs -pref2URL jdbc:oracle:thin:@myserver.mydomain.com:1521:mysid sets the database connection details on a target DBPreferenceStore.

Example 60–5 PDK-Java Migration Utility Command Line, Migration

```
java -classpath WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_
11.1.1/pdkjava.jar;
WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_11.1.1/ptlshare.jar;
WC_ORACLE_HOME/ucm/shared/classes/ojdbc14.jar \
oracle.portal.provider.v2.preference.MigrationTool \
-mode dbtofile \
-pref1User portlet_prefs \
-pref1Password portlet_prefs \
-pref1URL jdbc:oracle:thin:@myserver.mydomain.com:1521:mysid \
-pref2RootDirectory /mydirectory/preferences
```

60.3.8.2.2 Upgrade Mode Use an upgrade mode to upgrade data in place, and to modify existing locale-specific preferences in the persistence store so that the naming format used is compatible with the current version of WebCenter Portal and a given localePersonalizationLevel setting.

Table 60–4 describes the upgrade modes in which you can run the utility.

Table 60–4 Upgrade Modes in Which to Run the Utility

Mode	Description
file	Use when data in a FilePreferenceStore must be upgraded.
db	Use when data in a DBPreferenceStore must be upgraded.

An upgrade mode can be used in the following scenarios:

- You have upgraded from Oracle PDK 9.0.4.0.0 or earlier and want to use existing portlets with the default localePersonalizationLevel setting of language (In earlier releases, the default setting was locale).
- You have upgraded from Oracle Portal 9.0.2.0.0 or earlier and want to use existing portlets with a localePersonalizationLevel setting of locale (Oracle Portal now uses different names for some locales and therefore some existing data must be remapped).
- You want to change the localePersonalizationLevel for an existing portlet from locale to language or vice-versa.

When using an upgrade mode, you must use the -remap option to specify the localePersonalizationLevel (language or locale) that you are upgrading to. You can also use the -countries option to specify a prioritized list of ISO country codes, indicating your order of preference in a collision between remapped preferences for different countries. For example, if you specify -remap language -countries GB,US in the command, then it means that if the utility comes across both US English and British English preferences (en_US and en_GB) in a given preference store, it remaps the British English preference to become the English-wide preference (en).

Example 60–6 PDK-Java Migration Utility Command Line, Upgrade

```
java -classpath WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_
11.1.1/pdkjava.jar:
WC_ORACLE_HOME/webcenter/modules/oracle.portlet.server_11.1.1/ptlshare.jar:WC_
ORACLE_HOME/ucm/shared/classes/ojdbc14.jar \
  oracle.portal.provider.v2.preference.MigrationTool \
 -mode file -remap language
 -countries GB,US -pref1UseHashing true
 -pref1RootDirectory j2ee/home/applications/jpdk/jpdk/WEB-INF/providers/sample
```

60.3.9 How to Move a PDK-Java Portlet Producer

In some situations, you may want to move a portlet producer. For example, you may need to move it to a new server.

To move a PDK-Java portlet producer:

1. Install the new producer.
2. Make the persistence store of the original producer available to the new producer by performing one of the following tasks:
   - Migrate the persistence store using the Preference Store Migration and Upgrade Utilities (see Section 60.3.8.2, "Migrating a PDK-Java Producer Persistence Store" for more information), or
   - Configure the new producer to use the same persistence store as the original producer. If the database persistence store is being used, then you must point the WebLogic Server data source to the same database as the original producer.
3. Update the URL of the producer registration by using Enterprise Manager Fusion Middleware Control or the WLST commands: `setWSRPProducerRegistration` or `setPDKJavaProducerRegistration`.

60.3.10 How to Export and Import PDK-Java Portlet Producers at Design Time

You can export and import portlet producers at design time. For more information, see Section 59.3.15, "How to Export and Import Portlet Producers at Design Time."

60.4 Testing PDK-Java Portlets

Before making your portlets available in a production environment, it is highly advisable to test them first to make sure that they behave as expected.

This section includes the following topics:

- Section 60.4.1, "How to Test PDK-Java Portlet Producer Applications on Integrated WebLogic Server"
- Section 60.4.2, "What Happens When You Test PDK-Java Portlet Producer Applications on Integrated WebLogic Server"
- Section 60.4.3, "How to Deploy a PDK-Java Portlet Producer to the Integrated WebLogic Server"
- Section 60.4.4, "How to Test Portlet Personalization"

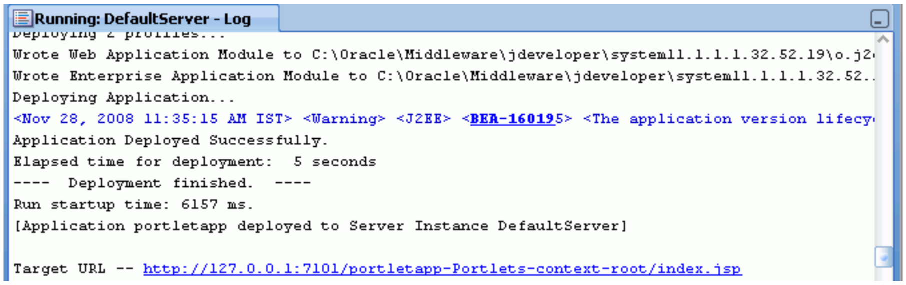
60.4.1 How to Test PDK-Java Portlet Producer Applications on Integrated WebLogic Server

The Integrated WebLogic Server (Integrated WLS) provides a quick and easy way of testing your portlets because it is preconfigured so that you can run applications within JDeveloper without needing to create deployment profiles.

To test a PDK-Java portlet on Integrated WLS:

1. In JDeveloper, open the portlet producer application that owns the portlet that you want to test.
2. Expand the portlet project (for example, **Portlets**).
3. Right-click a JSP page, for example, `index.jsp` in the project folder and select **Run**. Running `index.jsp` triggers packaging and deployment of your portlet producer application on an instance of Integrated WLS named after the application.
4. Check the IntegratedWebLogicServer - Log window to monitor the deployment progress. The log shows the URL of the application test page, as shown in Figure 60–2. The format of the URL is `http://`*`host:port/application_name`*`-Portlets-context-root/index.jsp`.

Figure 60–2 DefaultServer - Log

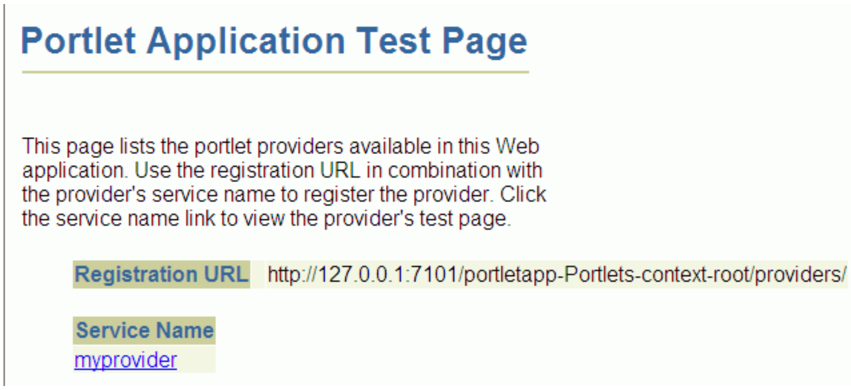


Running: DefaultServer - Log

```
Deploying 2 profiles...
Wrote Web Application Module to C:\Oracle\Middleware\jdeveloper\systemll.1.1.1.32.52.19\o.j2
Wrote Enterprise Application Module to C:\Oracle\Middleware\jdeveloper\systemll.1.1.1.32.52..
Deploying Application...
<Nov 28, 2008 11:35:15 AM IST> <Warning> <J2EE> <BEA-160195> <The application version lifecy
Application Deployed Successfully.
Elapsed time for deployment:  5 seconds
----  Deployment finished.  ----
Run startup time: 6157 ms.
[Application portletapp deployed to Server Instance DefaultServer]

Target URL -- http://127.0.0.1:7101/portletapp-Portlets-context-root/index.jsp
```

5. The PDK-Java Application Test page displays in a browser window, as shown in Figure 60–3.

Figure 60–3 Portlet Producer Application Test Page



Portlet Application Test Page

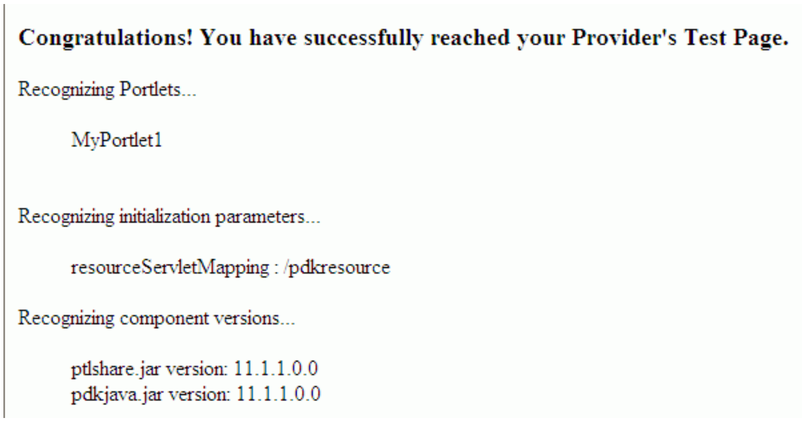
This page lists the portlet providers available in this Web application. Use the registration URL in combination with the provider's service name to register the provider. Click the service name link to view the provider's test page.

Registration URL	http://127.0.0.1:7101/portletapp-Portlets-context-root/providers/

Service Name
myprovider

6. Click the link underneath **Service Name**. Your browser should open with a page similar to the one shown in Figure 60–4. The URL of this page is the one required to register the producer with another application.

Figure 60–4 Producer Test Page



Congratulations! You have successfully reached your Provider's Test Page.

Recognizing Portlets...

MyPortlet1

Recognizing initialization parameters...

resourceServletMapping : /pdkresource

Recognizing component versions...

ptlshare.jar version: 11.1.1.0.0
pdkjava.jar version: 11.1.1.0.0

7. Alternatively, you can construct the URL yourself as follows:

   ```
   http://host:port/context-root/providers/producer_name
   ```

   where:

   - `host` is the server to which your producer has been deployed.
   - `port` is the HTTP Listener port. Typically, it is `7101`. When the server is started, the port is displayed in the console.
   - `context-root` is the Web Application's Context Root, which you specified earlier and can be found in the WAR Deployment Profile Properties under General.
   - `producer_name` is the name of the portlet's producer. A WAR file may contain multiple producers, hence you should always include the name of the producer for clarity. Otherwise, you get the default producer, which is the first producer created. The default producer is defined by the `_default.properties` file. This is created with the first producer in a project.

   If you enter this URL in your browser, you should see a page similar to the one in Figure 60–4.

8. While the application is running, you can switch back and forth between JDeveloper and your browser to make changes at design time in your application, save the changes, and then refresh the test page in your browser.

9. When the producer is successfully running, you should register it with an application and add one or more portlets to a page to check that it is working correctly. Registering a producer gives applications the information they require to locate and communicate with that producer. After you register a producer, it is exposed as a connection, and the producer and its portlets become available in the Application Resources panel under the Connections node, or in the Resource Palette.

   To register producers of PDK-Java portlets, follow the instructions provided in Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

   To add your portlets to a page, follow the instructions provided in Section 63.5, "Adding Portlets to a Page."

10. To stop an Integrated WLS instance, in the Run Manager tab, select **DefaultServer** and click the red **Stop** icon. When the instance stops, the application is undeployed, and therefore, comes unavailable.

> **Tip:** You can also stop an Integrated WLS instance by clicking the red **Stop** icon in the IntegratedWebLogicServer - Log window and selecting **DefaultServer**.

60.4.2 What Happens When You Test PDK-Java Portlet Producer Applications on Integrated WebLogic Server

When you run PDK-Java portlets on Integrated WLS the following happens:

- Configuration files for PDK-Java portlets are added to the `WEB-INF` directory.
- The `web.xml` file is updated with listener and server classes, filters, parameters, and other configurations that are required to run the portlet producer application successfully.

  For example, the ResourceServlet pdkresource, the `oracle.portlet.server.service.ContextFilter` filter, and so on. These configurations vary depending upon the portlet requirements.
- Libraries required for PDK-Java portlets are added to the `weblogic.xml` file, for example, `oracle.portlet-producer.jpdk`.

60.4.3 How to Deploy a PDK-Java Portlet Producer to the Integrated WebLogic Server

When you run a PDK-Java portlet producer application on the Integrated WLS instance, when the instance stops, the application is undeployed and therefore becomes unavailable. For a more persistent testing scenario, you can deploy your portlet producer application to the Integrated WLS so that it is always available while the Default Server is running.

If you choose this method, then you must first create deployment profiles, as described in Section 61.4, "Creating a WAR Deployment Profile." If you deploy your application to the Integrated WLS, then the Deployment Configuration dialog displays to enable you to configure and customize deployment settings. The file system MDS repository precreated by JDeveloper displays in the **Repository Name** field.

For information about deploying and running an application on the Integrated WLS, see Section 7.2, "Deploying a Portal Framework Application to the Integrated WebLogic Server."

60.4.4 How to Test Portlet Personalization

If you have implemented personalization for your portlet, then the **Personalize** link only appears on the portlet for authenticated users. Hence, to test the personalization of a portlet (the **Personalize** link), you must have some form of security implemented for the application consuming the portlet. For testing purposes, you may prefer to just configure the most basic authentication possible. For more information, see Section 74.12, "Configuring Basic Authentication for Testing Portlet Personalization."

60.5 Deploying PDK-Java Portlets

You can deploy your portlet producer to any WebLogic Managed Server that is configured to support WebCenter Portal portlet producers. For a list of prerequisites that you must complete before deployment, see Section 61.1, "Introduction to

Deploying Portlet Producers."

The first step of deploying a PDK-Java portlet producer is to create a WAR deployment profile to indicate how the producer and its associated files should be packaged. For more information, see Section 61.4, "Creating a WAR Deployment Profile."

You can deploy PDK-Java portlets only as EAR files, so after creating the WAR deployment profile, you must also create an EAR deployment profile to package the entire application. For more information, see Section 7.3.2.2, "Creating Deployment Profiles."

Note: While creating the EAR deployment profile, ensure that the WAR file is included in the application's EAR file.

After you have created the EAR deployment profile, you can deploy your portlet producer to the managed server. For more information, see Section 61.5, "Deploying a Portlet Producer to a WebLogic Managed Server."

Note: When deploying a PDK-Java portlet producer, you will not see the Select deployment type dialog, as the producer does not contain JSR 286 portlets.

When you deploy a PDK-Java portlet producer to a WebLogic Managed Server, the configuration settings described in Section 60.4.2, "What Happens When You Test PDK-Java Portlet Producer Applications on Integrated WebLogic Server" are added to the application EAR file at design time.

60.6 Creating a Struts Portlet

Oracle PDK contains extensions to integrate Apache Struts applications. This section explains how to build a portlet from an existing struts application. You can also follow these steps to create a portlet that uses the Model View Controller paradigm. The PDK-Java extensions described in this section rely on Apache Struts 1.1.

You can use the Struts framework to enhance portlet behavior. For example, a Struts controller may be used for page flow within a portlet. A portlet renderer is used as a bridge between portlet render requests and Struts servlet requests

The following code shows a portion of the producer definition file (`provider.xml`):

```
...
<renderContainer>true</renderContainer>
    <renderCustomize>true</renderCustomize>
    <autoRedirect>true</autoRedirect>
    <contentType>text/html</contentType>
    <showPage class="oracle.portal.provider.v2.render.http.StrutsRenderer">
        <defaultAction>showCustomer.do</defaultAction>
    </showPage>
</renderer>
...
```

The `showPage` of the Struts portlet contains two important components:

- The renderer class (`oracle.portal.provider.v2.render.http.StrutsRenderer`) receives the render requests and forwards them to the Struts Action Servlet.

- The `defaultAction` tag defines the Struts action that is used by default when the portlet is called for the first time.

The PDK-Java enables you to easily develop a view (portlet view) of your Struts application. This view enforces a consistent look and feel of your Struts portlet using portal styles, and enables the end user to use the application within the portal.

To create a Struts portlet, you must use the PDK-Java Struts tags, which are extensions of the default Struts JSP tags. This development process is similar to that of creating a standalone Struts application. For portlets in a producer application to use the Struts framework, the Struts components must be part of the same web application.

To publish a part of an existing Struts application as a portlet, Oracle recommends that you first create a new view to serve as the portlet view of your application. This view uses existing objects (`Actions`, `ActionForm`, and so on) with a new mapping and new JSPs.

> **Note:** Although Oracle recommends that you create a portlet view of your application, you could alternatively replace your application's struts tags with PDK-Java struts tags. This approach enables your application to run both as a standalone struts application and a portlet.

In this example, you create a portlet that enables you to add a new entry to a blog. Figure 60–5 and Figure 60–6 show how you submit a blog and save a blog entry.

Figure 60–5 Submitting a Blog

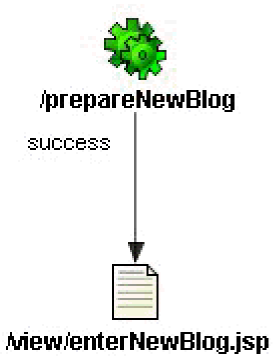
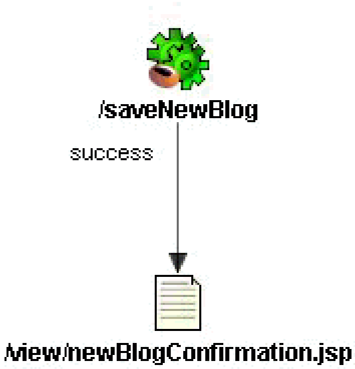


Figure 60–6 Saving a Blog Entry



prepareNewBlog is a simple empty action that redirects the request to the enterNewBlog.jsp page. This page shows a form for submitting a new blog.

The corresponding entry in the struts-config.xml is:

```
<action path="/prepareNewBlog" scope="request"
    type="view.PrepareNewBlogAction" >
    <forward name="success" path="/view/enterNewBlog.jsp"/>
</action>
<action path="/saveNewBlog" name="blogForm" scope="request"
    type="view.SaveNewBlogAction" input"/view/enterNewBlog.jsp"  >
    <forward name="success" path="/view/newBlogConfirmation.jsp"/>
</action>
```

This section includes the following topics:

- Section 60.6.1, "How to Create a New Flow and View to Host the Portlet Actions"
- Section 60.6.2, "How to Create the New JSPs"
- Section 60.6.3, "How to Create a Portlet"
- Section 60.6.4, "How to Extend the Portlet to Add Business Logic"
- Section 60.6.5, "How to Register the Producer"

60.6.1 How to Create a New Flow and View to Host the Portlet Actions

To create a new view, first create a new set of ActionMappings (page flow) that redirects the various actions and requests to Portal-specific JSPs.

```
<action path="/portal/prepareNewBlog" scope="request"
    type="view.PrepareNewBlogAction" >
    <forward name="success" path="/view/portal/enterNewBlog.jsp"/>
</action>
<action path="/portal/saveNewBlog" name="blogForm" scope="request"
    type="view.SaveNewBlogAction" input="/view/enterNewBlog.jsp"  >
    <forward name="success" path="/view/portal/newBlogConfirmation.jsp"/>
</action>
```

As you can see, only the path attributes are modified. The FormBean Action responsible for the application business logic remains unchanged.

60.6.2 How to Create the New JSPs

As specified in the previous step, the actions forward the request to new JSPs, which are responsible for rendering the portlet content. Your new portlet view JSPs can share the HTML with the standalone view, but ensure the portlet meets the following criteria:

- Uses styles that enforce a consistent look and feel with the rest of the page.
- Contains HTML code that is allowed in HTML table cells (that is, no <html>, <body>, and <frame> tags).
- Uses the PDK-Java version of the Struts HTML tag library. This renders URLs in the correct format to work in a portlet context.

The PDK Struts HTML tag library contains versions of the Struts HTML tags that can be used in portlet markup.

> **Note:** You can register the Oracle PDK with Oracle JDeveloper so that you can drop the tags from the Oracle JDeveloper Components Palette. For more information, see the *Registering a Custom Tag Library in JDeveloper* section in the Oracle JDeveloper online Help.

60.6.3 How to Create a Portlet

You can create your Struts portlet either manually or by using the Create Oracle PDK-Java Portlet wizard. Although the wizard does not explicitly offer Struts support, you can use the wizard to build your Struts portlet.

To create a portlet:

1. In JDeveloper, open the Oracle PDK-Java Portlet wizard.

   For more information, see Section 60.2.1, "How to Create a PDK-Java Portlet."

2. On the View Modes page of the wizard, for the Show Page mode, select an **Implementation Style** of **Java Class**.

3. For the **Package Name**, enter `oracle.portal.provider.v2.render.http`.

4. For the **Class Name**, enter `StrutsRenderer`. This generates the skeleton of the portlet renderer class, `StrutsRenderer`.

5. As the `StrutsRenderer` is part of the PDK, you do not need this generated file. So, when you finish the wizard, you must delete the file generated by the wizard. To do so, click the file in the System Navigator window, then from the **File** menu, select **Erase from Disk** in JDeveloper.

6. Edit the `provider.xml` and change the following properties:

   At the producer level, perform the following:

   - If the Struts application uses sessions (for example, the form synchronizer token mechanism is used or `<actionInSession>` is set to true), then enable session handling:

     ```
     <session>true</session>
     ```

   At the portlet level, perform the following:

   - If you want users to always return to the same portlet state as when they left the container page, then you can configure the struts renderer to save the struts action in the struts context:

     ```
     <actionInSession>true</actionInSession>
     ```

     If you prefer that users always start from the beginning of the portlet when they return from outside the container page, then you should not save the struts action:

     ```
     <actionInSession>false</actionInSession>
     ```

     Note that this setting is the default behavior.

   - Specify the first action to raise when the portlet is called. Use the following code:

     ```
     <showPage class="oracle.portal.provider.v2.render.http.StrutsRenderer">
     <defaultAction>/portal/prepareNewBlog.do</defaultAction>
     </showPage>
     ```

60.6.4 How to Extend the Portlet to Add Business Logic

In your application, you should add code specific to your environment, such as the user's information, personalization, and localization. To do so, you can create a new `Action` class that is only called in context, and handles all business logic.

60.6.5 How to Register the Producer

Now that your portlet is ready to be used by consumers, you must make it accessible by registering it. For information about how to register your PDK-Java portlet, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

60.7 Troubleshooting PDK-Java Portlets

This section provides information to assist you in troubleshooting problems you may encounter while creating and testing PDK-Java portlets.

This section includes the following topics:

- Section 60.7.1, "Cannot Access the Create Portlet Wizard"
- Section 60.7.2, "Cannot Add the Portlet Functionality that I Want to the Portlet"

60.7.1 Cannot Access the Create Portlet Wizard

Problem

In the New Gallery, I cannot find the Oracle PDK-Java Portlet option.

Cause

The application in which you are trying to create the PDK-Java portlet was created using WebCenter Portal's Portal Framework application template and therefore is not scoped for portlet creation.

Solution

1. Try creating the portlet in a Portlet Producer Application or any application scoped for portlet creation (any application except for those built using WebCenter Portal's Portal Framework application template).
2. In the New Gallery, click the All Technologies tab to list all available options regardless of the technology scope of the application.

60.7.2 Cannot Add the Portlet Functionality that I Want to the Portlet

Problem

I cannot find the option to add certain features, for example portlet events or public render parameters, to the portlet in the Create Oracle PDK-Java Portlet wizard.

Cause

The Create Oracle PDK-Java Portlet wizard does not provide the option to add certain features to portlets.

Solution

After you create the portlet using the Create Oracle PDK-Java Portlet wizard, edit the portlet to add advanced functionality. For more information, see Section 60.3, "Developing PDK-Java Portlets."

61

Deploying Portlet Producers

This chapter describes how to use Oracle JDeveloper to deploy portlet producers to an Oracle WebLogic Managed Server configured to test application deployment or host applications for production.

This chapter includes the following topics:

- Section 61.1, "Introduction to Deploying Portlet Producers"
- Section 61.2, "Creating and Provisioning a WebLogic Managed Server for Deploying Portlet Producers"
- Section 61.3, "Creating a Connection to a Portlet Producer WebLogic Managed Server"
- Section 61.4, "Creating a WAR Deployment Profile"
- Section 61.5, "Deploying a Portlet Producer to a WebLogic Managed Server"

For information about how to deploy producers using Fusion Middleware Control, Oracle WebLogic Server Administration Console, or WLST, see the "Deploying Portlet Producer Applications" section in *Administering Oracle WebCenter Portal*.

For more general information about deployment of applications, see Chapter 7, "Deploying and Testing Your Portal Framework Application."

61.1 Introduction to Deploying Portlet Producers

You can deploy your portlet producers directly from JDeveloper to any Oracle WebLogic Managed Server that is configured to support WebCenter Portal portlet producers.

A WebLogic Managed Server resides outside of JDeveloper as part of a domain, and is managed by an Administration server within that domain. A WebLogic Managed Server hosts applications, along with the libraries and other resources needed by those applications. A domain, which is a logically related group of Oracle WebLogic Server resources, can have any number of managed servers. Managed servers can be configured to run applications in a test environment, a production environment, or both.

The steps for deploying a portlet producer to a WebLogic Managed Server are:

1. Create and provision a WebLogic Managed Server instance that contains all the required shared libraries. For more information, see Section 61.2, "Creating and Provisioning a WebLogic Managed Server for Deploying Portlet Producers."
2. As the WebLogic Managed Server resides outside JDeveloper, you must create a connection to it. For more information, see Section 61.3, "Creating a Connection to

a Portlet Producer WebLogic Managed Server."

3. Create an application WAR deployment profile. For more information, see Section 61.4, "Creating a WAR Deployment Profile."
4. Deploy the portlet producer to the WebLogic Managed Server. For more information, see Section 61.5, "Deploying a Portlet Producer to a WebLogic Managed Server."

> **Note:** Before you deploy the portlet producer, you must remove the `test-all` application role if you enabled the automatic grants feature in the Configure ADF Security wizards (see Section 74.3.1, "Configuring ADF Security Settings"). Because the `test-all` role makes all ADF resources public, its presence increases the risk that your application may leave some resources unprotected. You must therefore remove the role before you migrate the application-level policy store.
>
> For more information, see the "How to Remove the test-all Role from the Application Policy Store" section in the *Fusion Developer's Guide for Oracle Application Development Framework*.

61.2 Creating and Provisioning a WebLogic Managed Server for Deploying Portlet Producers

Before you can deploy your portlet producer to a WebLogic Managed Server, you must create a WebLogic Managed Server based on the Custom Services Producer template, `oracle.wc_custom_services_producer_template_11.1.1.jar`, which contains all the required shared libraries.

Using this template creates a Custom Services Producer managed server named `WC_CustomServicesProducer` and targets all the necessary resources to it. It also adds the following JDBC data sources:

- `mds-CustomServicesProducerDS` (for accessing the `MDS` schema)
- `WebCenter-CustomServicesProducerDS` (for accessing the `WebCenter` schema)
- `Activities-CustomServicesProducerDS` (for accessing the `Activities` schema)
- `Portlet-CustomServicesProducerDS` (for accessing the `Portlet` schema)

To create a Custom Services Producer managed server:

1. Start the Configuration Wizard in graphical mode.

   For more information see the "Starting the Configuration Wizard in Graphical Mode" section in *Creating Domains Using the Configuration Wizard*.

2. On the Welcome page, select **Extend an existing WebLogic domain**, and then click **Next**.

> **Note:** If you prefer, you can create a new domain for your managed server. For more information, see the "Creating a New Domain" section in *Installation Guide for Oracle WebCenter Portal*.

3. On the Select a WebLogic Domain Directory page, select a valid domain directory, and then click **Next**.

A domain directory contains a `config` directory, which contains a `config.xml` file. In the navigation tree, these directories are indicated by a blue folder icon.

4. On the Select Extension Source page, select **Extend my domain using an existing extension template**, then specify the path of the template as follows:

   - On UNIX operating systems:

     ```
     WebCenter_ORACLE_HOME/common/templates/applications/oracle.wc_custom_
     services_producer_template_11.1.1.jar
     ```

   - On Windows operating systems:

     ```
     WebCenter_ORACLE_HOME\common\templates\applications\oracle.wc_custom_
     services_producer_template_11.1.1.jar
     ```

5. Click **Next**.
6. For information about the remaining steps in this wizard, see the "Extending a WebLogic Domain in Graphical Mode" section in *Creating Domains Using the Configuration Wizard*.

Note: Although portlet producers only require access to the `MDS` schema, it is advisable to configure all of the JDBC data sources created for the managed server to avoid warnings later.

61.3 Creating a Connection to a Portlet Producer WebLogic Managed Server

Before you can use JDeveloper to deploy your portlet producer to a WebLogic Managed Server instance that resides outside JDeveloper, you must create a connection to the domain that contains the managed server instance where you will deploy the portlet producer. Before you create a connection to a WebLogic Managed Server instance, ensure that the target managed server is up and running and has the required libraries.

To create a WebLogic Managed Server connection for portlet producers:

1. In JDeveloper, from the **File** menu, choose **New**.
2. In the New Gallery, expand **General**, select **Connections**, and then **Application Server Connection**.
3. Click **OK**.
4. In the Create Application Server Connection wizard, for Step 1, enter a name for the new connection (for example, `WC_MyPortletProd`), and then click **Next**.
5. At Step 2, specify the user name and password for authentication, and then click **Next**.
6. At Step 3, enter the host name of the WebLogic Managed Server (for example `webcenter.myserver.example.com`) and the port number (for example `7888`).
7. In the **WLS Domain** field, specify the name of the domain in which the WebLogic Managed Server is created (for example, `wc_server`), and then click **Next**.
8. At Step 4, click **Test Connection**.

   If the test is successful, you now have a connection to the target WebLogic Managed Server.

9. Click **Finish**.

61.4 Creating a WAR Deployment Profile

To deploy portlet producers to a managed server that resides outside JDeveloper, you must create a deployment profile to indicate how the producer and its associated files should be packaged. To do this, you must create a Web Application Archive (WAR) file.

To create a WAR deployment profile:

1. In the Application Navigator, right-click the project folder that contains your portlet producer, for example, **Portlets**, and choose **New**.
2. In the New Gallery, expand **General**, select **Deployment Profiles**, then **WAR File**, and click **OK**.
3. In the Create Deployment Profile -- WAR File dialog, enter a name for your deployment profile and click **OK**.
4. In the Edit WAR Deployment Profile Properties dialog, select **Specify Java EE Web Context Root**, enter a context root, then click **OK**.
5. In the Project Properties dialog, under Deployment Profiles, select the WAR file you just created and click **OK**.

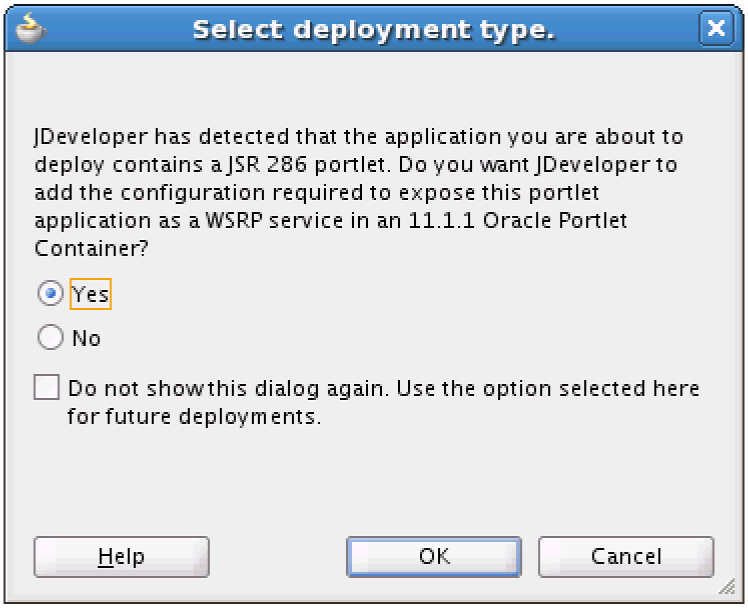
61.5 Deploying a Portlet Producer to a WebLogic Managed Server

After you have created the deployment profile, you can deploy your portlet producer to the managed server.

To deploy a portlet producer to a WebLogic Managed Server:

1. In the Application Navigator, right-click the project folder, for example, **Portlets**, and choose **Deploy**, then the deployment profile (WAR file) that you created in Section 61.4, "Creating a WAR Deployment Profile."
2. In the Deploy dialog, on the Deployment Action page, select **Deploy to Application Server**, then click **Next**.
3. On the Select Server page, select the connection to the Managed Server, then click **Next**.
4. On the WebLogic Options page, select **Deploy to selected instances in the domain**, and select the managed server to which you want to deploy the portlet producer, and then click **Finish**.
5. If your application contains JSR 286 portlets, the Select deployment type dialog displays (Figure 61–1). Select **Yes** and then click **OK** to add the configuration required to expose this application as a WSRP service.

Figure 61–1 The Select Deployment Type Dialog



Select deployment type.

JDeveloper has detected that the application you are about to deploy contains a JSR 286 portlet. Do you want JDeveloper to add the configuration required to expose this portlet application as a WSRP service in an 11.1.1 Oracle Portlet Container?

● Yes

○ No

□ Do not show this dialog again. Use the option selected here for future deployments.

> **Tip:** This dialog does not display if, during a previous deployment, you selected **Do not show this dialog again**.

6. The message `Deployment started` displays in the Deployment - Log window. If the application is successfully deployed to the targeted server instance, the message `Deployment finished` displays in the log.

   > **Note:** If you are deploying your portlet producer in a cluster environment, you will receive the following warning:
   >
   > ```
   > WARNING:
   > oracle.webcenter.lifecycle.exception.LifecycleLockedException: A
   > lock exists that prevents export set import.
   > ```
   >
   > This is expected behavior. When you deploy your application, the producer metadata exported into the EAR file (as a MAR file) needs to be imported into an MDS schema for use in the production environment. Importing the metadata occurs automatically during deployment. This import only needs to happen with one node in the cluster, so a lock is created to prevent other nodes in the cluster trying to perform the same operation.

7. After the deployment has finished, check the log for any errors that may have occurred during deployment.

8. To confirm that your application has been successfully deployed, display the producer test page in your browser. The URL for the test page is:

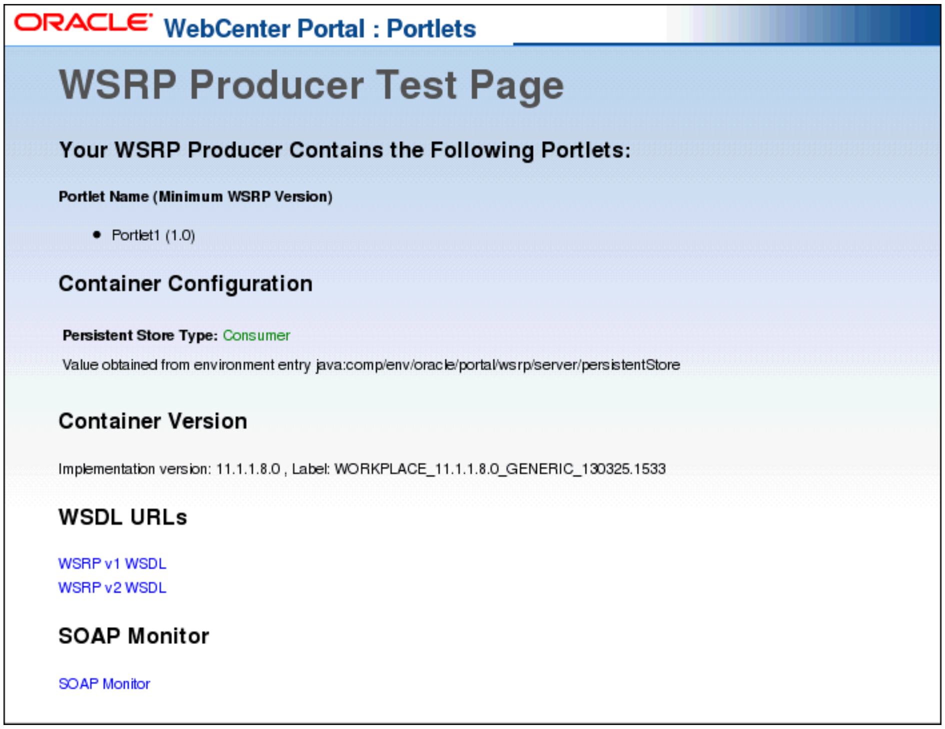
   ```
   http://host:port/context-root/info
   ```

   where:

   - *`host`* is the server to which you deployed the application.
   - *`port`* is the HTTP Listener port. Typically this is `7101`.

- `context-root` is the application's context root as defined in the Edit WAR Deployment Profile Properties (see Section 61.4, "Creating a WAR Deployment Profile").

Figure 61–2 WSRP Producer Test Page



ORACLE WebCenter Portal : Portlets

WSRP Producer Test Page

Your WSRP Producer Contains the Following Portlets:

Portlet Name (Minimum WSRP Version)

- Portlet1 (1.0)

Container Configuration

Persistent Store Type: Consumer

Value obtained from environment entry java:comp/env/oracle/portal/wsrp/server/persistentStore

Container Version

Implementation version: 11.1.1.8.0 , Label: WORKPLACE_11.1.1.8.0_GENERIC_130325.1533

WSDL URLs

WSRP v1 WSDL
WSRP v2 WSDL

SOAP Monitor

SOAP Monitor

62

Creating Pagelets with Pagelet Producer

This chapter describes Oracle WebCenter Portal's Pagelet Producer (previously known as Oracle WebCenter Ensemble), which provides a collection of useful tools and features that facilitate dynamic pagelet development.

This chapter includes the following sections:

- Section 62.1, "About Pagelet Producer"
- Section 62.2, "Configuring Pagelet Producer Settings"
- Section 62.3, "Creating Pagelet Producer Objects"
- Section 62.4, "Working with Pagelet Chrome for WSRP and Oracle JPDK Portlets"
- Section 62.5, "Working with OpenSocial Gadgets"
- Section 62.6, "Building Custom Pagelets Using Pagelet Producer"
- Section 62.7, "Using Pagelets in Web Applications"
- Section 62.8, "Examples and Advanced Topics"
- Section 62.9, "Troubleshooting Pagelets"

62.1 About Pagelet Producer

This section provides an introduction to Pagelet Producer concepts and features. It describes how you can use Pagelet Producer, its underlying architecture and components, and introduces key concepts.

This section includes the following topics:

- Section 62.1.1, "Overview"
- Section 62.1.2, "Pagelet Producer Architecture"
- Section 62.1.3, "Requirements"

62.1.1 Overview

A pagelet is a reusable user interface component. Any HTML fragment can be a pagelet, but pagelet developers can also write pagelets that are parameterized and configurable, to dynamically interact with other pagelets, and respond to user input. Pagelets can be run on any Web page, including within a portal or other Web application. Pagelets can be used to expose platform-specific portlets in other Web environments.

Pagelet Producer provides a collection of useful tools and features that facilitate dynamic pagelet development, and lets you leverage investments in existing Web infrastructure by making it usable in new ways. Pagelet Producer can be used to consume:

- Web UI from applications that do not expose integration APIs or portlets out of the box
- Standard portlets such as WSRP (JSR-168 or JSR-286), JPDK, CSP, and WebParts

It can also deliver Web UI to WebCenter Portal, Sites, or pretty much any HTML page with the added benefits of role-based access control to Pagelet Producer resources, and reverse proxying of Web resources with HTML markup parsing, clipping, injection and event handling (inter-pagelet communication).

Pagelet Producer provides:

- Tools for consuming existing Web UI and re-using it as portable components called *pagelets*
- Alternatives for integrating non-standard/non-compliant containers and components that do not support portlet standards. For example, you can:
  - Capture functionality from Web applications that do not expose portlets
  - Make existing WSRP, JPDK, or Content Syndication Protocol (CSP) portlets available for use in a non-portal setting
- Injectors and parsers to modify HTML markup
- A JavaScript framework for inter-pagelet communication and event handling

62.1.2 Pagelet Producer Architecture

This section describes the Pagelet Producer architecture and key components...

This section includes the following subsections:

- Section 62.1.2.1, "Pagelet Producer Architecture and Components"
- Section 62.1.2.2, "Pagelet Producer Key Concepts"
- Section 62.1.2.3, "Pagelet Producer Console"
- Section 62.1.2.4, "Using HTTP and Content Syndication Protocol"
- Section 62.1.2.5, "Pagelet Producer Proxy"

62.1.2.1 Pagelet Producer Architecture and Components

Figure 62–1 shows a high-level view of the Pagelet Producer components and their interactions. Figure 62–1 also reflects the way in which the pagelet request is being handled in Pagelet Producer. The request is received by the Proxy Servlet that maps incoming requests to the resource. Next, the request is authenticated. If the user can access the requested resource, pagelet processing starts by requesting HTML markup from the backend system. After the markup is received it is modified using any defined clippers, parsers, and so forth.

Figure 62–1 Pagelet Producer - High-Level Architecture

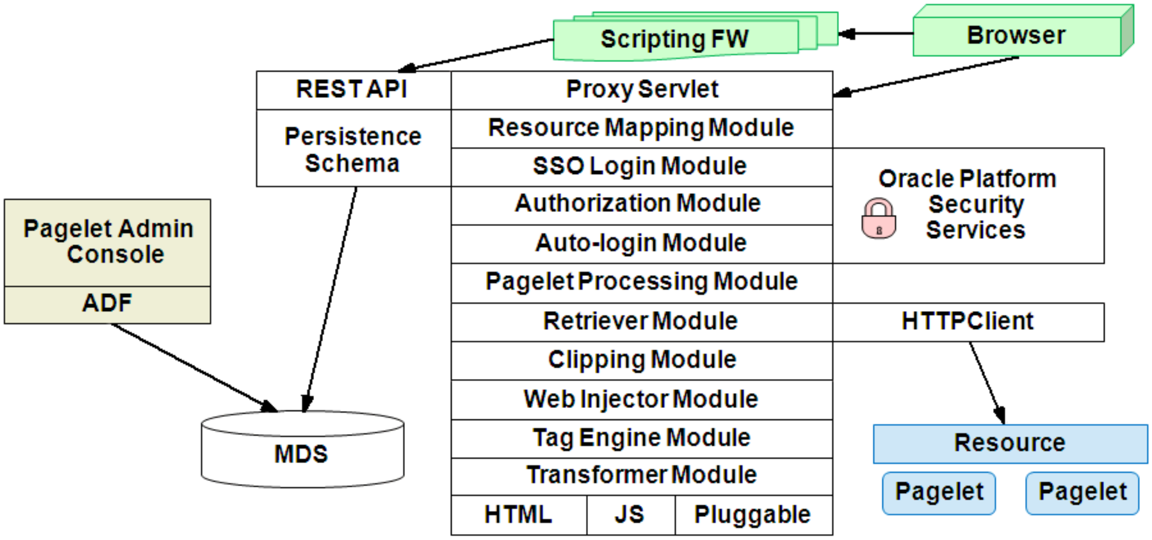
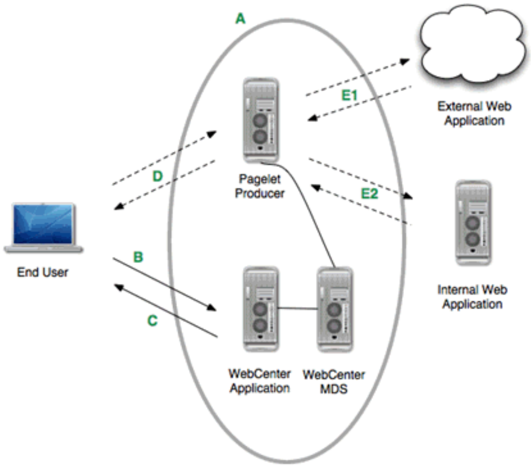


Figure 62–2 provides a different view of component interaction:

Figure 62–2 Pagelet Producer - Interaction Flow



A: A Pagelet Producer application runs on a J2EE application server. Note that Pagelet Producer does not require the WebCenter schema, but it does require an MDS Instance (typically shared with WebCenter).

B: User calls a WebCenter Portal page that contains a pagelet.

C: WebCenter Portal returns the page, plus the JavaScript that will call Pagelet Producer to render the pagelet.

D: The JavaScript makes a render call to Pagelet Producer.

E: The Pagelet Producer can call external (**E1**) or internal (**E2**) Web applications as sources of HTML content. Pagelet Producer transforms the content (i.e., rewrites the URL) and returns it to the browser for insertion into the page. Pagelet Producer itself can be externally accessible (i.e., in the DMZ).

62.1.2.2 Pagelet Producer Key Concepts

The following key concepts are useful when working with Pagelet Producer:

- **Resources** are core objects used to register applications within Pagelet Producer, including stand-alone Web applications, Pagelet Producers and OpenSocial containers. Creating a resource allows the proxy to map internal applications to external URLs, manage authentication, and transform applications. Registering a Web application as a Pagelet Producer resource allows you to do the following:

  - Proxy internal Web applications to external addresses
  - Manage authentication, both at the proxy level and at the resource level
  - Transform proxied Web applications, including URL rewriting

  For more information about creating resources, see Section 62.3.1, "Creating Resources."

- **Pagelets** are sub-components of a Web page accessed through Pagelet Producer that can be injected into any proxied application. Any application on a Pagelet Producer resource that returns markup can be registered as a pagelet, which can then be displayed in a portal or Framework application, or any other Web application.

  Any HTML fragment can be a pagelet. Pagelet developers can create pagelets that are parameterized and configurable, dynamically interact with other pagelets, and respond to user input using Asynchronous Javascript and XML (AJAX) patterns.

  For more information about creating pagelets, see Section 62.3.2, "Creating Pagelets."

Pagelet Producer registration is dynamic. Additions and updates to existing producers are immediately available. In most cases, it is not necessary to restart the portal or Framework application or the managed server.

62.1.2.3 Pagelet Producer Console

The **Pagelet Producer Console** is a browser-based administration tool used to create and manage the various objects in your Pagelet Producer deployment. From the Console you can register Web applications as resources, create pagelets, manage proxy and transformation settings, and more.

The Pagelet Producer Console is accessible from any Web browser at the following URL:

```
http://<host>:<port>/pagelets/admin
```

The Pagelet Producer Console can also be launched in accessibility mode at:

```
http://<host>:<port>/pagelets/admin/accessible
```

During runtime, the Pagelet Producer Console is also accessible from the WebCenter Portal Shared Assets tab.

> **Note:** Pagelet Producer Console supports the standard administration languages and Dutch only. If you configure the browser language to something other than one of these languages, it will revert to the language defined for the current server.

For more information about using the Pagelet Producer Console to configure Pagelet Producer and create objects, see Section 62.2, "Configuring Pagelet Producer Settings" and Section 62.3, "Creating Pagelet Producer Objects." For information about using the Pagelet Producer Console to register producers and migrate pagelet data, see the "Managing the Pagelet Producer" chapter in *Administering Oracle WebCenter Portal*.

62.1.2.4 Using HTTP and Content Syndication Protocol

HTTP is a protocol used mostly for transferring Web page content and XML between a server and a client. Content Syndication Protocol (CSP) is a platform-independent protocol based on the open standard of HTTP 1.1 that extends HTTP defining the syntax of communication between Pagelet Producer and external CSP resources.

Services on external resources communicate with Pagelet Producer using CSP. For example, when a browser requests a page, Pagelet Producer makes simultaneous requests to each external resource to retrieve the pagelet content for the page. The external resource reads the current user's preferences from the CSP headers sent by Pagelet Producer and sends back the appropriate HTML. Pagelet Producer inserts the HTML into the page markup. Any images stored in the Image Service are retrieved and displayed by the browser.

This section contains the following subsections:

- Section 62.1.2.4.1, "HTTP"
- Section 62.1.2.4.2, "Content Syndication Protocol"

62.1.2.4.1 HTTP HTTP communication is made up of requests and responses. Requests and responses are essentially lists of name-value pairs of metadata in headers, along with an optional body. The body is the data that is being transferred (an HTML page or XML file). The metadata in the headers is information about the request or response itself (for example, what language the content is in, or how long the browser should cache it). The request and response each contain specific information as described below. For more detailed information on HTTP, see RFC 2616 (`http://www.faqs.org/rfcs/rfc2616.html`).

The client sends the server an **HTTP Request**, asking for content. The request body is used only for requests that transfer data to the server, such as POST and PUT.

HTTP Request Format:

```
[METHOD] [REQUEST-URI] HTTP/[VERSION]
[fieldname1]: [field-value1]
[fieldname2]: [field-value2]
[request body, if any]
```

HTTP Request Example:

```
GET /index.html HTTP/1.1
Host: www.xmlns.oracle.com
User-Agent: Mozilla/3.0 (compatible; Opera/3.0; Windows 95/NT4)
Accept: */*
Cookie: username=JoeSmith
```

The server sends back an **HTTP Response** that contains page content and important details, such as the content type, when the document was last modified, and the server type. The response contains an error message if the requested content is not found.

HTTP Response Format:

```
HTTP/[VERSION] [CODE] [TEXT]
[fieldname1]: [field-value1]
[fieldname2]: [field-value2]
[response body, if any (document content here)]
```

HTTP Response Example:

```
HTTP/1.0 200 Found
Last-modified: Thursday, 20-Nov-97 10:44:53
Content-length: 6372
Content-type: text/html
<!DOCTYPE HTML PUBLIC '-//W3C//DTD HTML 3.2 Final// EN'><HTML>
...followed by document content...
```

Custom HTTP headers can be configured to include specialized information.

> **Note:** Header size limits are controlled by the server that hosts the code. The standard limit for IIS/ASP is 60K. Java Application Servers range from 2K to 10K. These limits are generally configurable; see your server documentation for more information.

Services can also access standard HTTP headers, such as the Set-Cookie header or HTTP 1.1 basic authentication header. If you want to investigate HTTP further, you can view all the headers being passed back and forth between your browser and Web server using logging (as described in Section 62.6.3, "Debugging Pagelets"). HTTP is used in conjunction with SSL to serve up secure content. Single sign-on (SSO) also uses HTTP headers for basic authentication.

62.1.2.4.2 Content Syndication Protocol Content Syndication Protocol (CSP) extends HTTP and defines proprietary headers to pass settings between Pagelet Producer and external CSP resources (specifically, Oracle WebCenter Interaction portlets). CSP outlines how these services use HTTP to communicate and modify settings. The latest version of the CSP protocol is 1.4, and is available from:

http://docs.oracle.com/cd/E13158_01/alui/wci/docs103/devguide/references/CSP1.4.pdf

The custom CSP headers used to communicate system and user configuration variables (see Table 62–1) can also be used by pagelets.

Table 62–1 Pagelet Producer Headers

Header Name	Description
User ID	The User ID of the currently logged in user. This value can be used to determine if the session has expired. If UserID=2, the default 'Guest' user is logged in; any other user's session has ended.
User Name	The name of the logged in user. The user's name can be used to personalize display or pre-fill form fields.
Image Service URL	The URL to the root virtual directory of the Image Service in the user's implementation of Pagelet Producer. This location should be used for all static images used in services.
Stylesheet URL	The URL to the current user's style sheet. In each implementation of Pagelet Producer, the UI is customized. In some portals, users can choose between a selection of stylesheets. Using these styles ensures that pagelets appear in the style of the current user's implementation of Pagelet Producer.
Pagelet ID	The ID for the current resource (pagelet), and the instance ID for the current pagelet. This value is useful for appending to the names of HTML forms and client-side JavaScript functions to ensure unique form and function names on the page to avoid name conflicts.
Host Page URL	The URL to the page that hosts the pagelet. Preference pages need this URL to return the user to the correct page after settings are configured. This value can also be used to allow a single pagelet to display different content on different pages.

62.1.2.5 Pagelet Producer Proxy

Pagelet Producer acts as a proxy server, brokering transactions between client computers and external resources. This configuration is typically used to serve content to clients that would otherwise be unable to access the external resource, but it can also be used to impose additional security restrictions on the client, including the use of policies. The proxy hides the external resource so that the content appears to come directly from the proxy server.

This architecture makes Pagelet Producer the single point of access for content, and allows external resources to reside on a private network or behind a firewall. As long as Pagelet Producer can connect to the external resource, users can view the content, even if they cannot access it directly. To the browser, Pagelet Producer appears to be the source of content on the external resource.

When a user interacts with a service, any request made to a URL in the proxy is automatically rerouted through Pagelet Producer. To the user, the content appears to come from Pagelet Producer; the external resource is an unknown back-end system.

There are many benefits to this configuration. The most useful to services are:

- **Dynamic functionality and personalization**: Pagelet Producer intercepts request from pagelets, which allows the response to be modified dynamically, using information from MDS, the request, or the response"
- **Security**: Services can allow users to access content that is not publicly available. Files stored on a secure server can be made available by including specific URLs in the configuration of the proxy.

> **WARNING: The proxy is a powerful feature and can compromise security if incorrectly configured. Allowing direct access to a external resource that hosts unprotected private content could create a dangerous security gap.**

- **Performance**: Pagelet Producer caches proxied content, decreasing response time for end users and improving performance on the external resource. While proxying works efficiently for content like HTML, it is generally not appropriate for binary data like static images. Images do not need to be transformed, and proxying large images can adversely affect performance. This is one reason the Image Service should be used to prevent routing static images through the proxy.

Note that all URLs to other proxied CSP or Web resources will be proxied by default unless specified in the **Do not proxy hosts** field. For more information about configuring proxying, see Section 62.2.3, "Configuring Proxy Settings."

Keep the following warnings and best practices in mind when implementing services that use the proxy:

- **URL transformation**: Pagelet Producer must transform code so that proxied URLs open correctly. Before Pagelet Producer sends a response, it parses the HTML and looks for URLs containing the **HTTP Proxy Server URL** field prefix (see Section 62.2.3, "Configuring Proxy Settings"). Pagelet Producer transforms any URLs that should be proxied before returning the response to the client. Relative URLs are transformed to point to the correct location.
- **Scripting limitations**: JavaScript constructs that dynamically create URLs can cause problems, because they are run after content is already transformed. VBScript is not transformed by the proxy; you can continue to use dynamic scripts and VBScript as long as your code is proxy-aware. Parsers and Web injectors can

be used to implement targeted control over URL rewriting. For details on parsers and Web injectors, see Section 62.6.2, "Modifying Pagelet Functionality at Runtime."

- **URL encoding**: It is a best practice to encode all headers that are URLs to prevent unexpected transformation. In JSP, encode all URLs that are written. If the code writes URLs in the body of a page (for example, a link to a preferences page) it should be encoded. The standard Java servlet command `response.encodeURL()` is the preferred method, but you can also use `URLEncoder.encode(url)`. In the .NET framework, the `HttpUtility.URLEncode` class provides the necessary functionality. Note that for .NET, there is no need to encode the redirect URL; this is handled automatically by the back end.

62.1.3 Requirements

Install WebCenter Portal following the instructions in the *Oracle Fusion Middleware Installation Guide for Oracle WebCenter*. Make sure that all dependent components are also installed and configured, including WebCenter Content Server, the discussions server, and Pagelet Producer.

By default the Services Producer is automatically deployed to the `WC_Portlet` managed server in the WebCenter Portal domain. If the `WC_Portlet` managed server was not created during installation or there is a requirement to run the Services Producer separately, there is a custom Services Producer template that can be used to create the `WC_CustomServicesProducer` managed server. This managed server contains the Oracle WebCenter Services Producer component as well as pre-configured JDBC data sources for accessing the WebCenter Portal, Activities, and MDS schemas. For more information, see the "Oracle WebCenter Portal: Custom Services Producer Template" section in the *Domain Template Reference*.

62.2 Configuring Pagelet Producer Settings

This section explains important configuration settings that affect all Pagelet Producer resources and how to set them using the Settings pages of the Pagelet Producer Console. For an introduction to the Pagelet Producer Console, see Section 62.1.2.3, "Pagelet Producer Console."

The following pages are included in the Settings section:

- Section 62.2.1, "Configuring a WCI Data Source"
- Section 62.2.2, "Configuring Logging Settings"
- Section 62.2.3, "Configuring Proxy Settings"
- Section 62.2.4, "Configuring Transform Settings"
- Section 62.2.5, "Configuring CSP Settings"
- Section 62.2.6, "Configuring Kerberos Settings"
- Section 62.2.7, "Configuring OpenSocial Settings"

62.2.1 Configuring a WCI Data Source

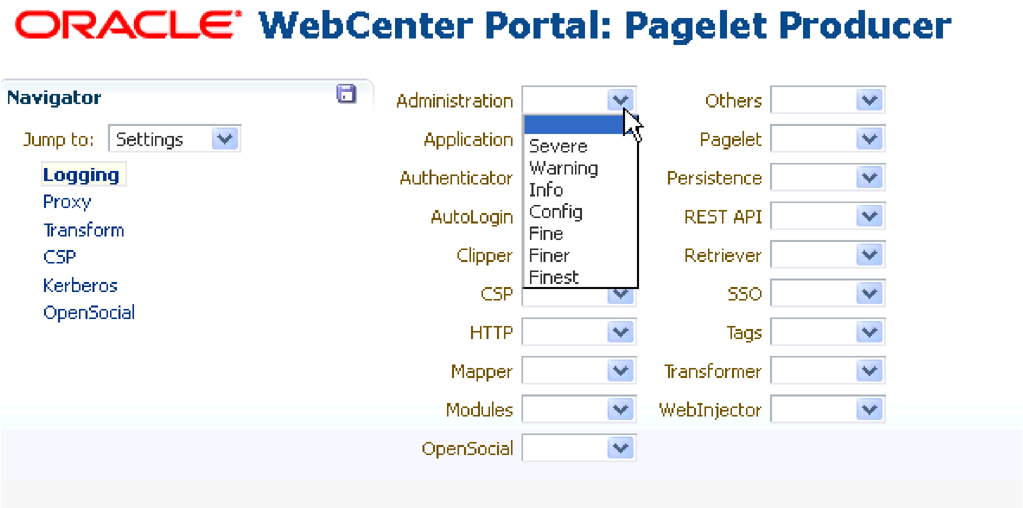
A CSP login token is required to consume WCI resources, and a data source is required for that login token to be propagated from Pagelet Producer to CSP portlets. Pagelet Producer generates a login token that is sent to all remote portlets to propagate user identity and validate incoming requests. Follow the steps in the "Configuring JDBC Data Sources" section in *Configuring and Managing JDBC Data Sources for Oracle*

WebLogic Server to configure the data source. Note that the data source must be named `wcidb`.

62.2.2 Configuring Logging Settings

The Logging page lets you set logging levels for Pagelet Producer components.

Figure 62–3 Pagelet Producer Console: Settings - Logging



To enable logging for any component, choose one of the following logging levels:

- Severe
- Warning
- Info
- Config
- Fine
- Finer
- Finest

Logging messages can be viewed in the managed server log files. In Oracle WebLogic Server, this would be `*domain_home*/servers/*managed server name*/*managed server name*.log` and `*managed server name*-diagnostic.log`.

62.2.3 Configuring Proxy Settings

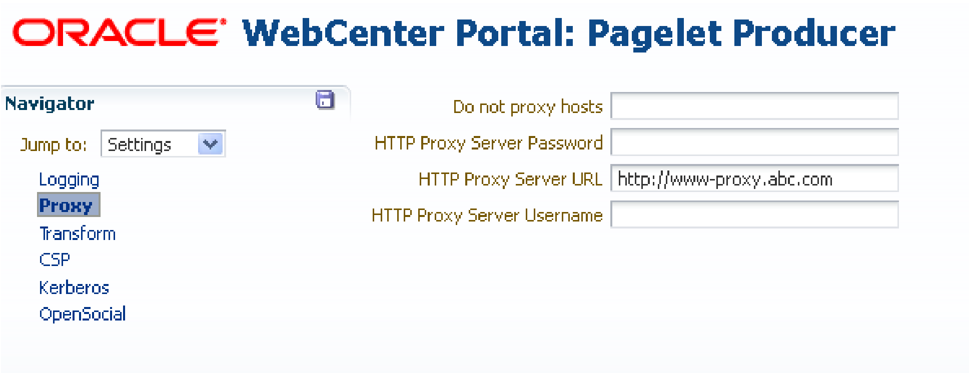
The Proxy page lets you define a list of URLs that will not be proxied, and set the URL, user name, and password for the HTTP proxy if required.

You must restart Pagelet Producer after changing the proxy settings.

Note: If an HTTP proxy is required for external connections in the deployment environment, initial server startup will report connection errors. These errors are not an indication of problems with the environment; they indicate that some external OpenSocial libraries cannot be loaded remotely. The errors can be resolved by configuring the proxy settings as described above and restarting the server.

> **Note for Oracle WebLogic Server deployments:** The HTTP Proxy Server URL entered on the Proxy page is applied to all applications running on the server that hosts Pagelet Producer (on Oracle WebLogic Server, this setting is applied to all applications running on the `WC_Portlet` managed server). Oracle WebLogic Server users should pay particular attention to this setting and make sure that the WLS Administrative Server host and all clustered managed servers are included in the "Do not proxy hosts" list.

Figure 62–4 Pagelet Producer Console: Settings - Proxy



Jump to: Settings

Do not proxy hosts

HTTP Proxy Server Password

HTTP Proxy Server URL http://www-proxy.abc.com

HTTP Proxy Server Username

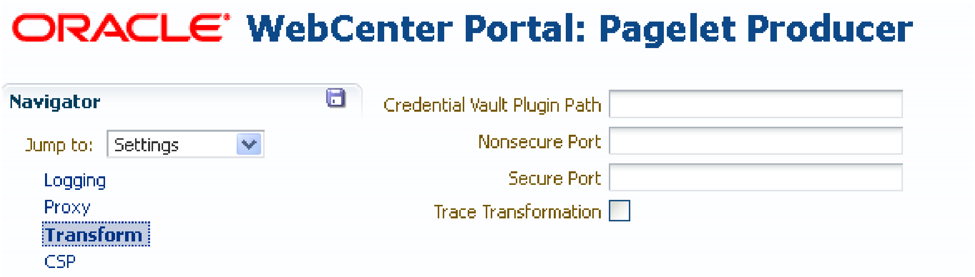
The Proxy page contains the following settings:

- The **Do not proxy hosts** field lets you define a list of semicolon-separated list of URLs that will not be proxied (wildcards are allowed). For Oracle WebLogic Server deployments, be sure to include the WLS Administrative Server host and all clustered managed servers in this list.
- The **HTTP Proxy Server Password** field lets you set the password for the proxy server.
- The **HTTP Proxy Server URL** field lets you define the proxy server URL.
- The **HTTP Proxy Server Username** field lets you define the username with which to access the proxy server.

62.2.4 Configuring Transform Settings

The Transform page lets you enter the path to the credential vault provider and configure secure and insecure ports for Pagelet Producer. This page also lets you choose whether or not to log pre- and post- transformation content.

Figure 62–5 Pagelet Producer Console: Settings - Transform



Credential Vault Plugin Path

Nonsecure Port

Secure Port

Trace Transformation □

The Transform page contains the following fields:

- The **Credential Vault Plugin Path** field lets you define a path to the credential vault, where plug-ins are stored.
- The **Nonsecure Port** field lets you define a non-secure port for Pagelet Producer.

> **Note:** The Nonsecure Port defaults to 8889. If Pagelet Producer is deployed on a different port, change this entry and restart the server.

- The **Secure Port** field you define a non-secure port for Pagelet Producer.
- The **Trace Transformation** option, when checked, turns on logging for pre- and post- transformation content. Note that this option, although useful for debugging, should not be turned on in production environments.

62.2.5 Configuring CSP Settings

CSP is a platform-independent protocol based on the open standard of HTTP 1.1. CSP defines the syntax of communication between Pagelet Producer and external resources. It also defines custom headers as well as outlines how services use HTTP to communicate and modify settings.

The CSP page lets you configure the Oracle WebCenter Interaction Credential Mapper, SOAP API service, and image service.

> **Note:** This page may be ignored if Oracle WebCenter Interaction is not present in your deployment. These settings are used for backwards compatibility with CSP portlets written for Oracle WebCenter Interaction.

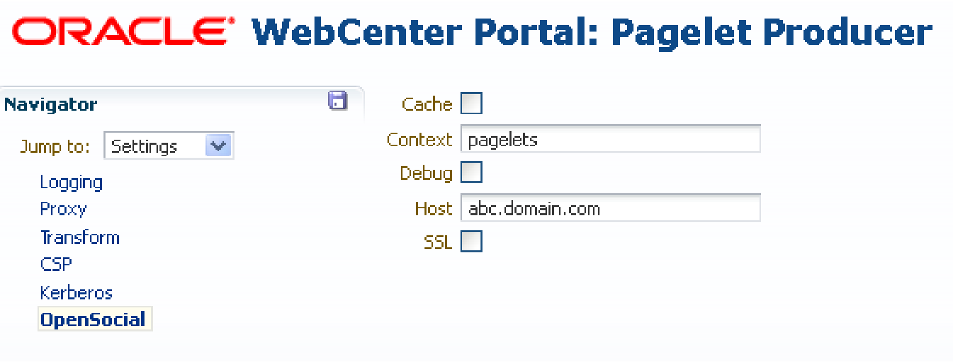
62.2.6 Configuring Kerberos Settings

The Kerberos page is used to define the paths to the Kerberos configuration files (`java.security.krb5.conf` and `java.security.auth.login.conf`). These two configuration files are needed to configure the Kerberos realm and KDC to instruct HTTPClient where to retrieve the Kerberos Service ticket.

62.2.7 Configuring OpenSocial Settings

The OpenSocial page lets you configure Pagelet Producer for use with OpenSocial gadgets.

Figure 62–6 Pagelet Producer Console: Settings - OpenSocial



Cache ☐

Context pagelets

Debug ☐

Host abc.domain.com

SSL ☐

The OpenSocial page includes the following settings:

- The **Cache** option enables Pagelet Producer internal caching for OpenSocial gadgets.
- The **Context** field defines the context to which Pagelet Producer is deployed. This value should be left at the default setting ("pagelets") unless a change is required by the OpenSocial container. For details on changing the context, see the "Redeploying Pagelet Producer to a Different Context" section in *Administering Oracle WebCenter Portal*.
- The **Debug** option enables debugging for OpenSocial gadgets (disables JavaScript obfuscation).
- The **Host** field should contain the fully-qualified domain name of Pagelet Producer host. This value should be retrieved automatically from the environment; if it is not, restart the server to pick up the correct configuration settings. As with the Context setting, this value should be left at the default unless a change is required by the OpenSocial container.
- The **SSL** option enables SSL for OpenSocial gadgets.

> **Note:** You must also configure the secure (HTTPS) and nonsecure (HTTP) ports before importing OpenSocial gadgets. For details on these settings, see Section 62.2.4, "Configuring Transform Settings."

62.3 Creating Pagelet Producer Objects

This section describes how to create and configure the various objects in a Pagelet Producer deployment, including resources, pagelets, Web injectors, parsers and hosted files.

As explained in Section 62.1.2.3, "Pagelet Producer Console," the Pagelet Producer Console is a browser-based administration tool used to create and manage the various objects in a Pagelet Producer deployment. This section describes the settings required for each type of object:

- Section 62.3.1, "Creating Resources"
- Section 62.3.2, "Creating Pagelets"
- Section 62.3.3, "Creating Web Injectors"
- Section 62.3.4, "Creating Custom Parsers"
- Section 62.3.5, "Creating Hosted Files"

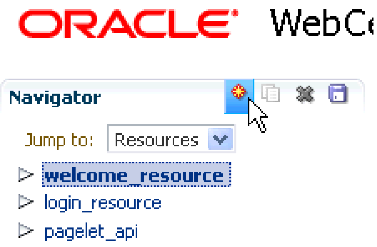
62.3.1 Creating Resources

Resources are applications registered with Pagelet Producer. Registering an application as a resource allows the proxy to map internal applications to external URLs, manage authentication, and transform application functionality.

To create a new resource, use the steps below:

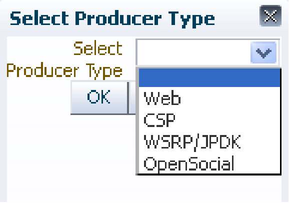
1. Select the **Resources** option from the dropdown list in the Pagelet Producer Console navigator.
2. Click on any existing resource and click the **Create** icon in the navigator toolbar. (This button is only enabled when you have selected an object type that can be created.)

Figure 62–7 Pagelet Producer Console - Create Resource



3. In the **Select Producer Type** dialog box, choose the type of producer that the resource will be configured to proxy from the dropdown list:
   - **Web**: Any standard Web application
   - **CSP**: CSP portlet provider application (for use with Oracle WebCenter Interaction)
   - **WSRP/JPDK**: WSRP or Oracle JPDK portlet producer (before you create a resource of this type, register the associated producer as described in the "Managing the Pagelet Producer" chapter in *Administering Oracle WebCenter Portal*).
   - **OpenSocial**: OpenSocial Container

Figure 62–8 Select Producer Type Dialog



4. Click **OK**. An entry called "<new>" will be added to the list of resources. This new resource will include the necessary configuration pages for the producer type chosen.
5. Configure the resource in the Pagelet Producer Console. The required configuration pages differ based on the type of producer. To save your changes at any time, click the **Save** icon in the navigator toolbar.
   - Section 62.3.1.1, "Configuration Pages: Web and CSP Resources"

  - Section 62.3.1.2, "Configuring WSRP and JPDK Resources"
  - Section 62.3.1.3, "Configuring OpenSocial Resources (OpenSocial Gadget Producers)"

Once the resource is defined, create the pagelets and other objects within the resource. For more information, refer to the following sections:

- Section 62.3.2, "Creating Pagelets"
- Section 62.3.3, "Creating Web Injectors"
- Section 62.3.4, "Creating Custom Parsers"
- Section 62.3.5, "Creating Hosted Files"

62.3.1.1 Configuration Pages: Web and CSP Resources

This section describes how to configure Web and CSP resources.

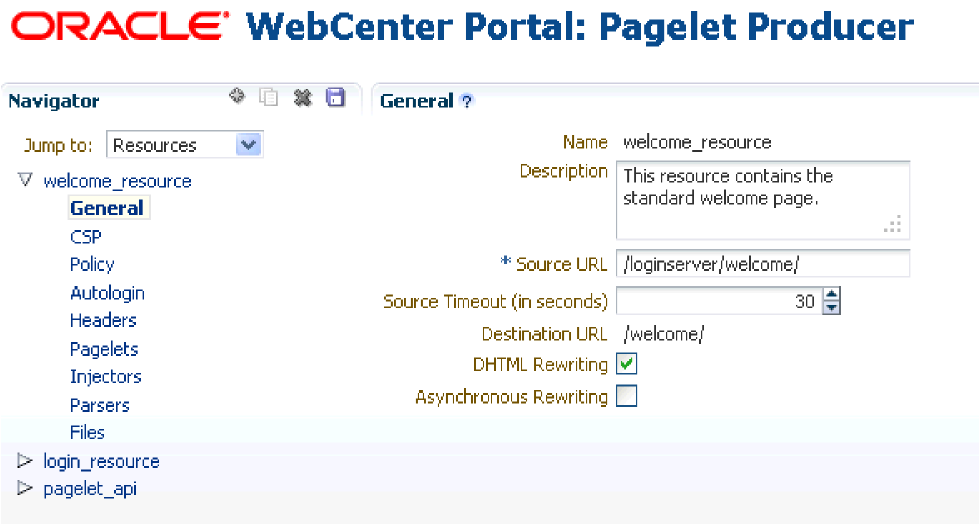
This section includes the following subsections:

- Section 62.3.1.1.1, "Configuring General Settings"
- Section 62.3.1.1.2, "Configuring CSP settings"
- Section 62.3.1.1.3, "Configuring Policy Settings"
- Section 62.3.1.1.4, "Configuring Autologin"
- Section 62.3.1.1.5, "Configuring Autologin: Form Login"
- Section 62.3.1.1.6, "Configuring Autologin: Basic Login and NTLM Login"
- Section 62.3.1.1.7, "Configuring Autologin: Kerberos Login"
- Section 62.3.1.1.8, "Configuring Autologin: Authentication Sources"
- Section 62.3.1.1.9, "Configuring Headers"

This section uses the welcome_resource created when Pagelet Producer is installed as an example.

62.3.1.1.1 Configuring General Settings Use the **General** page (see Figure 62–9), to enter basic information about the resource.

Figure 62–9 Pagelet Producer Console: Resource - General Page



ORACLE WebCenter Portal: Pagelet Producer

Name welcome_resource

Description This resource contains the standard welcome page.

* Source URL /loginserver/welcome/

Source Timeout (in seconds) 30

Destination URL /welcome/

DHTML Rewriting ☑

Asynchronous Rewriting □

- Enter a **Name** for the resource.
- Enter a **Description** for the resource (optional).
- In the **Source URL** field, type the URL to the location of the Web application resource to be proxied. For example, `http://internalServer/foo/`.

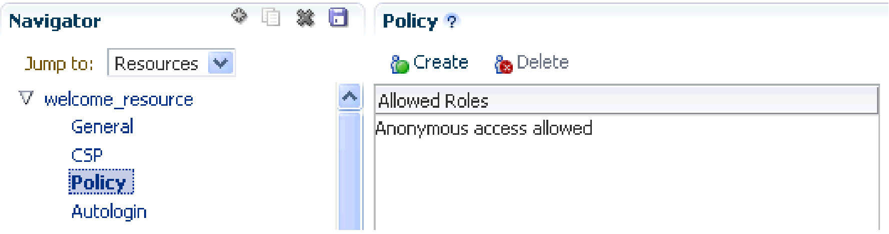
> **Note:** If you are configuring an ADF Web Application as a resource, the Source URL cannot be any more specific than `http://`*`hostname:portnumber`*`/context-root/`.

- By default, Pagelet Producer attempts to connect to the resource for 30 seconds before returning an error message. To change this value, enter a new **Source Timeout** period in seconds.
- In the **Destination URL** field, type the relative path to be used to access the resource. This path will be used to create an URL to the resource on the server that hosts Pagelet Producer.
- To enable Dynamic HTML, choose **DHTML Rewriting.** This option supports URLs that are not in the original HTML returned from the server, but are added by DHTML. In most cases, this option should be enabled.
- To enable rewriting of DHTML through asynchronous Ajax calls select **Asynchronous Rewriting**.

62.3.1.1.2 Configuring CSP settings By default, the CSP login token is not passed to the proxied resource. To enable this feature, choose **Send CSP Login Token**. Note that the CSP page is only available for CSP resources.

62.3.1.1.3 Configuring Policy Settings The Policy page (see Figure 62–10) lets you limit access to a resource to specific roles within WebCenter Portal.

Figure 62–10 Pagelet Producer Console: Resource - Policy Page



Allowed Roles

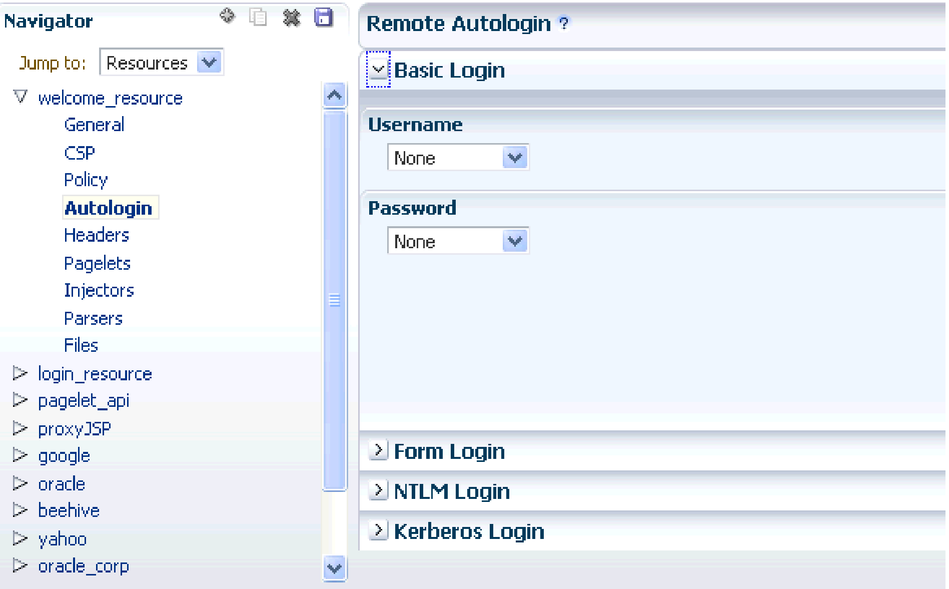
Anonymous access allowed

The J2EE container hosting Pagelet Producer (such as Oracle WebLogic Server) is responsible for establishing the role memberships associated with the current user. A resource can specify multiple roles on the Policy page, and users will be allowed access if they are a member of any of the specified roles; otherwise they will be directed to a suitable J2EE container delegated authentication page to establish the required credentials. If no roles are entered in the list, anonymous access is allowed, and the resource is termed as an "anonymous resource".

> **Note:** The role name(s) entered on this page must match those created in the J2EE container (such as Oracle WebLogic Server).

62.3.1.1.4 Configuring Autologin The Autologin feature allows Pagelet Producer to supply credentials to applications automatically. The Autologin page (see Figure 62–11) lets you configure authentication information for all users who access the resource.

Figure 62–11 Pagelet Producer Console: Resource - Autologin Page



Username: None

Password: None

The following sections describe how to configure credential mapping for authentication:

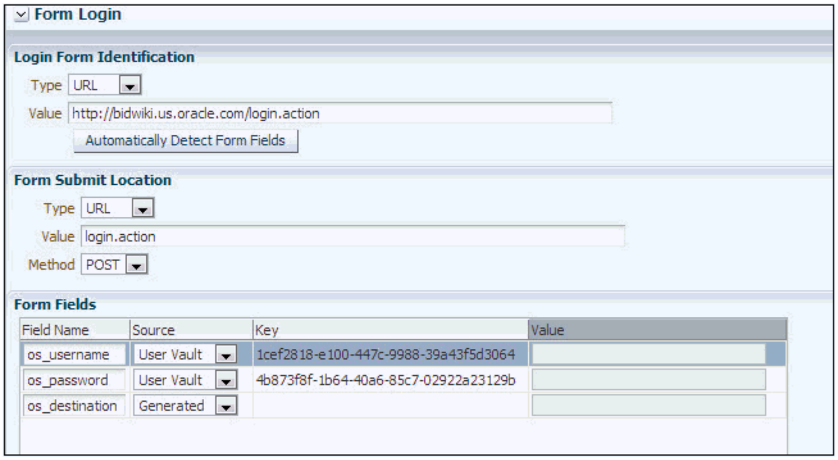
- Section 62.3.1.1.5, "Configuring Autologin: Form Login" describes how to configure autologin for a resource that prompts for authentication with an HTML form.

- Section 62.3.1.1.6, "Configuring Autologin: Basic Login and NTLM Login" describes how to configure autologin for a resource that prompts for authentication with basic authentication or NTLM.
- Section 62.3.1.1.7, "Configuring Autologin: Kerberos Login" describes how to configure autologin for a resource that prompts for authentication with Kerberos.
- Section 62.3.1.1.8, "Configuring Autologin: Authentication Sources" describes the static, user profile, and credential vault authentication field sources.

62.3.1.1.5 Configuring Autologin: Form Login This section describes how to configure Autologin for a resource that prompts for authentication with an HTML form.

1. On the **Autologin** page for the resource, expand the **Form Login** section (Figure 62–12).

Figure 62–12 Autologin Page - Form Login



Form Login

Login Form Identification

Type: URL

Value: http://bidwiki.us.oracle.com/login.action

Form Submit Location

Type: URL

Value: login.action

Method: POST

Form Fields

Field Name	Source	Key	Value
os_username	User Vault	1cef2818-e100-447c-9988-39a43f5d3064	
os_password	User Vault	4b873f8f-1b64-40a6-85c7-02922a23129b	
os_destination	Generated		

2. The login page can be identified by an URL or a regular expression. In the **Login Form Identification** section, choose one of the following options:
   - If the login form is located at a static URL, select **URL** and enter the URL in the **Value** field. You can choose to **Automatically Detect Form Fields** on the page or enter them manually as described in step 4 below.
   - If the login form is dynamic, select **RegEx** and type the regular expression pattern into the box.
3. Set the login form action. In the **Form Submit Location** section, choose one of the following options:
   - If the login form action is a static URL, select **URL** and type the URL into the box. Choose the action for the form submission: POST or GET.
   - If the login form is dynamic, select **RegEx** and type the regular expression pattern into the box.
4. To map fields from the form to authentication field sources, either click **Automatically Detect Form Fields** in the Login Form Identification section as described above or enter them manually using the process below:

   a. Click **Create** to add a new row to the **Form Fields** list.

   b. Enter the name of the HTML form input in the **Field Name** box.

c. For details on how to configure the **Source** and **Value** properties, see Section 62.3.1.1.8, "Configuring Autologin: Authentication Sources."

> **Note:** Sensitive fields should be stored securely using the credential vault (User Vault or Secured).

d. To delete field mappings, click **Delete**.

5. The logout page and login error pages can also be identified by an URL or a regular expression. In the **Logout Page Identification** and **Login Error Page Identification** sections, choose one of the following options:

   - If the page is located at a static URL, select **URL** and type the URL into the field provided.
   - If the page is dynamic, select **RegEx** and type the regular expression pattern into the field provided.

62.3.1.1.6 Configuring Autologin: Basic Login and NTLM Login This section describes how to configure autologin for a resource that prompts for authentication with basic authentication or NTLM.

1. On the **Autologin** page for the resource, expand the **Basic Login** or **NTLM Login** section.

> **Note:** Basic authentication transmits passwords as plain text, and therefore, it must not be used in production systems. Further, it is strongly recommended that the underlying transport is HTTPS.

2. In the **Username** and **Password** sections, choose the appropriate authentication source and enter a value as necessary. For details on how to configure these properties, see Section 62.3.1.1.8, "Configuring Autologin: Authentication Sources.".

62.3.1.1.7 Configuring Autologin: Kerberos Login This section describes how to configure autologin for a resource that prompts for authentication using Kerberos. For information on defining basic Kerberos settings, see Section 62.2, "Configuring Pagelet Producer Settings."

1. On the **Autologin** page for the resource, expand the **Kerberos Login** section.
2. In the **Username** and **Password** sections, choose the appropriate authentication source and enter a value as necessary. For details on how to configure these properties, see the next section, Section 62.3.1.1.8, "Configuring Autologin: Authentication Sources."
3. In the **SPN** field, enter the Service Principal Name (SPN) for the Kerberos account, in the format `http://`*`hostname_with_kerberos`*. (Before the Kerberos authentication service can use an SPN to authenticate a service, the SPN must be registered on the account object that the service instance uses to log on.)

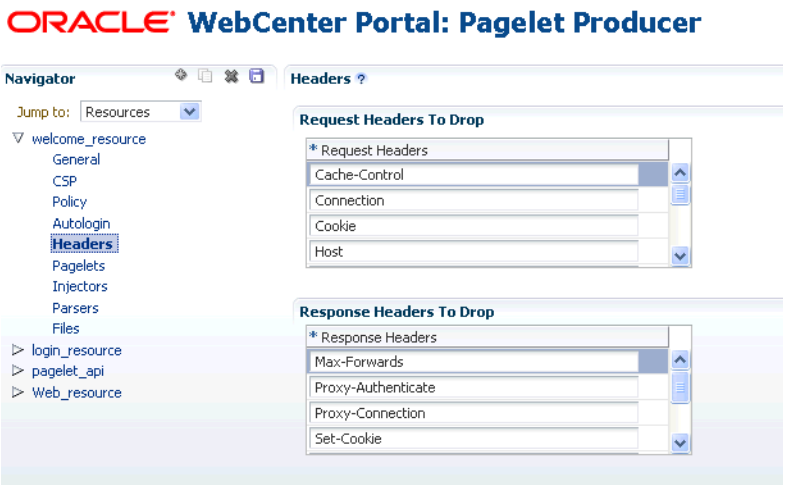
62.3.1.1.8 Configuring Autologin: Authentication Sources Authentication sources define the source for login fields. Table 62–2 describes each of the authentication field source values:

Table 62–2 Pagelet Producer Authentication Sources

Field	Description
Unsecured	Uses the provided authentication information for all users accessing the resource. Type the static value in the field provided.
Secured	Uses the field value is entered by an administrator in the Pagelet Producer Administration Console. The value is stored in the Credential Vault and is shared among all users, including non-authenticated (anonymous) users. The field key is auto-generated and displayed as a read-only field in the Administration Console.
User Vault	Prompts the user for credentials the first time the resource is accessed. The supplied credentials are encrypted and stored in the credential vault, and each subsequent access to the resource is authenticated with the stored credentials. The field key is auto-generated and displayed as a read-only field in the Administration Console. In the second field, enter the name of the credential vault to use, or leave the entry as "default" to use the server vault. **Note:** When you choose `User Vault`, the user will be presented with an error page that includes a link: "Click here to access pagelet directly." This link opens the authentication dialog. This is a known issue and occurs only the first time the resource is accessed by a user.
Generated	(Form Login only) The field value is taken from the backend server response markup.

62.3.1.1.9 Configuring Headers The Headers page (see Figure 62–13) lets you choose request and response headers that should be dropped from the HTTP that is provided by Pagelet Producer.

Figure 62–13 Pagelet Producer Console: Resource - Headers Page



Request Headers To Drop

* Request Headers
Cache-Control
Connection
Cookie
Host

Response Headers To Drop

* Response Headers
Max-Forwards
Proxy-Authenticate
Proxy-Connection
Set-Cookie

Some header elements should be blocked from being passed to back-end applications. For example, when using delegated (third-party SSO) authentication, the SSO system might insert some headers that need not be passed to the back-end applications. When passed, these headers might interfere with the back-end application functionality.

The following headers are dropped by default:

Request Headers	Response Headers
- Cache-Control	- Max-Forwards
- Connection	- Proxy-Authenticate
- Cookie	- Proxy-Connection
- Host	- Set-Cookie
- Max-Forwards	- Trailer
- Pragma	- Transfer-Encoding
- Proxy-Connection	- Upgrade
- Proxy-Authorization	
- TE	
- Trailer	
- Transfer-Encoding	
- Upgrade	

The Content-Length header is always implicitly dropped, because manipulating content during the proxying operation renders the content length invalid in almost all cases.

To add a header to the list, click **Create** and enter the header name in the field provided.

Once the Web or CSP resource is defined, you can create pagelets and other objects. For more information, see the following sections:

- Section 62.3.2, "Creating Pagelets"
- Section 62.3.3, "Creating Web Injectors"
- Section 62.3.4, "Creating Custom Parsers"
- Section 62.3.5, "Creating Hosted Files"

62.3.1.2 Configuring WSRP and JPDK Resources

This section describes how to configure WSRP/JPDK resources based on WSRP or Oracle JPDK portlet producers.

> **Note:** Before you can create a resource based on a WSRP or Oracle JPDK portlet producer, you must register the producer as described in the "Managing the Pagelet Producer" chapter in *Administering Oracle WebCenter Portal*.

This section includes the following subsections:

- Section 62.3.1.2.1, "Configuring General Settings"
- Section 62.3.1.2.2, "Configuring Policy Settings"

62.3.1.2.1 Configuring General Settings Use the **General** page to enter basic information about a WSRP or JPDK resource.

- Choose the portlet producer type from the **Portlet Producer** dropdown list. This list is populated with the producers that have been registered as described in the "Managing the Pagelet Producer " chapter in *Administering Oracle WebCenter Portal*.

- Enter a **Name** for the resource.
- Enter a **Description** for the resource (optional).

62.3.1.2.2 Configuring Policy Settings The Policy page lets you limit access to a resource to specific roles within Oracle WebCenter Portal.

The J2EE container hosting Pagelet Producer (such as Oracle WebLogic Server) is responsible for establishing the role memberships associated with the current user. A resource can specify multiple roles on the Policy page, and users will be allowed access if they are a member of any of the specified roles; otherwise they will be directed to a suitable J2EE container delegated authentication page to establish the required credentials. If no roles are entered in the list, anonymous access is allowed, and the resource is termed as an "anonymous resource".

> **Note:** The role name(s) entered on this page must match those created in the J2EE container (such as Oracle WebLogic Server).

Once the WSRP or JPDK resource is defined, you can create pagelets and Web injectors. See the following sections for more information:

- Section 62.3.2, "Creating Pagelets"
- Section 62.3.3, "Creating Web Injectors"

62.3.1.3 Configuring OpenSocial Resources (OpenSocial Gadget Producers)

This section describes how to configure OpenSocial resources based on OpenSocial gadget producers.

- Section 62.3.1.3.1, "Configuring General Settings"
- Section 62.3.1.3.2, "Configuring Policy Settings"

> **Note:** Configure Pagelet Producer for use with OpenSocial before creating an OpenSocial resource. For more information, see Section 62.2.7, "Configuring OpenSocial Settings."

62.3.1.3.1 Configuring General Settings Use the **General** page to enter basic information about the resource.

- Enter a **Name** for the resource.
- Enter a **Description** for the resource (optional).

62.3.1.3.2 Configuring Policy Settings The Policy page lets you limit access to a resource to specific roles within Oracle WebCenter Portal.

The J2EE container hosting Pagelet Producer (such as Oracle WebLogic Server) is responsible for establishing the role memberships associated with the current user. A resource can specify multiple roles on the Policy page, and users will be allowed access if they are a member of any of the specified roles; otherwise they will be directed to a suitable J2EE container delegated authentication page to establish the required credentials. If no roles are entered in the list, anonymous access is allowed, and the resource is termed as an "anonymous resource".

Note: The role name(s) entered on this page must match those created in the J2EE container (such as Oracle WebLogic Server).

Once the OpenSocial resource is defined, you can create pagelets and files. Refer to the following sections for more information:

- Section 62.3.2, "Creating Pagelets"
- Section 62.3.5, "Creating Hosted Files"

62.3.2 Creating Pagelets

The pagelets collection lists the pagelets associated with the resource. To create a new pagelet, select the **Pagelets** section under the resource you want to use in the Pagelet Producer Console and click the **Create** icon in the toolbar. A pagelet called "<new>" will be added to the list. To modify an existing pagelet, click the pagelet name.

This section contains the following subsections:

- Section 62.3.2.1, "Configuring General Settings"
- Section 62.3.2.2, "Configuring Preferences"
- Section 62.3.2.3, "Configuring Parameters"
- Section 62.3.2.4, "Configuring the Clipper"
- Section 62.3.2.5, "Accessing the Pagelet and Preference Editor"

62.3.2.1 Configuring General Settings

Enter a **Name** for the pagelet and the **Library** name with which to associate the pagelet. (A pagelet library is a user-defined way to group related pagelets.) Enter a **Description** for the pagelet (optional).

- **For Web and CSP pagelets**, type the relative path to the pagelet in the **URL Suffix** field (do not include the Source URL prefix you entered for the resource). If you leave the URL Suffix blank, then the entire resource will be considered the pagelet.
- **For pagelets based on WSRP or Oracle JPDK portlets**, choose the portlet on which to base the pagelet from the **Portlet** dropdown list. This list is populated with the portlets on the WSRP or Oracle JPDK portlet producer associated with the parent resource. Any public parameters associated with the portlet will automatically be imported as pagelet parameters. For more information on support for WSRP and Oracle JPDK portlets, see Section 62.4, "Working with Pagelet Chrome for WSRP and Oracle JPDK Portlets."
- **For pagelets based on OpenSocial gadgets**, enter the location of the gadget XML schema in the **Gadget URL** field. Click the **Import Gadget Metadata** button to import the following information from the XML schema:

    - **Gadget name**: This value will be imported into the Description field on the General page.
    - **Gadget user preferences**: The pagelet parameters on the Configuring Parameters page will be populated with the gadget's user preferences.

  For more information on support for OpenSocial gadgets, see Section 62.5, "Working with OpenSocial Gadgets."

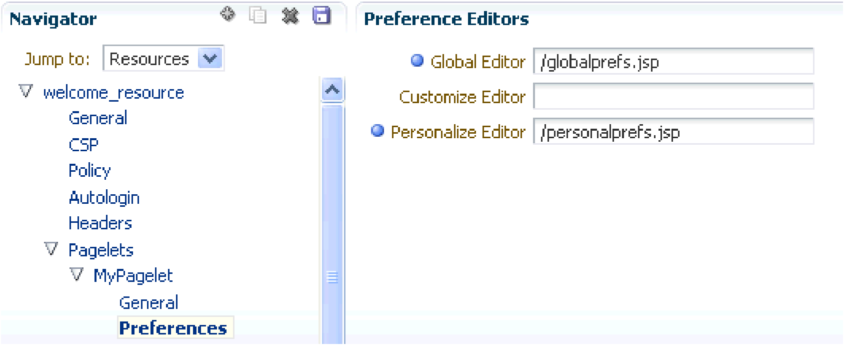
To block access to the pagelet, choose **Disabled**. If the pagelet is included on any pages, it will display a simple error message.

62.3.2.2 Configuring Preferences

On the Preferences page (see Figure 62–14), enter the relative URLs to any preference pages required by the pagelet: Global, Customize, or Personalize. Do not include the Source URL prefix you entered for the resource. (As noted above, for OpenSocial gadgets with user preferences, a default entry will be created; this entry should not be modified.)

The Preferences page is not used by WSRP or Oracle JPDK-based pagelets.

Figure 62–14 Pagelet Producer Console: Pagelets - Preferences Page



Global Editor /globalprefs.jsp

Customize Editor

Personalize Editor /personalprefs.jsp

62.3.2.3 Configuring Parameters

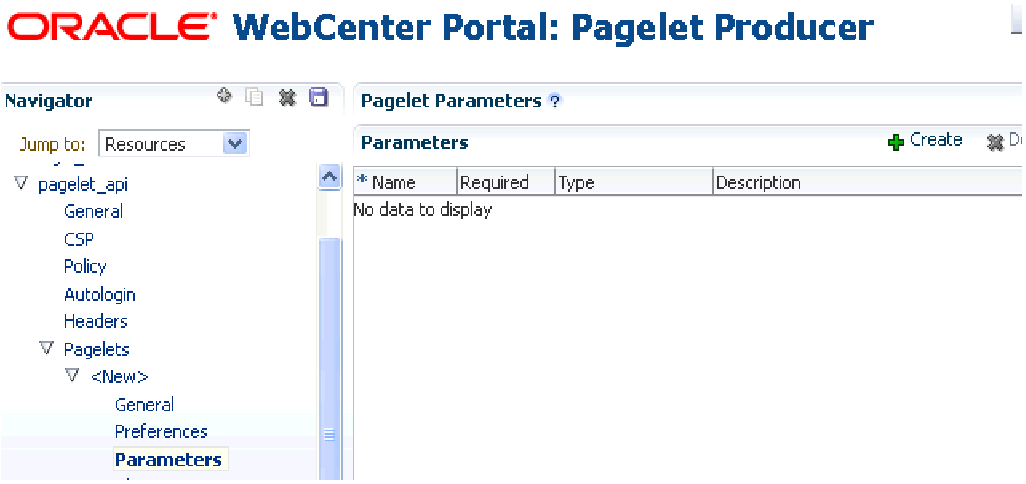
Data can be passed to pagelets using pagelet parameters. Parameters pass name-value pairs to the pagelet application as described below.

On the Parameters page (see Figure 62–15), enter the **Parameters** that should be passed to the pagelet.

To add a parameter, click **Create**.

- Enter the **Name** of the parameter.
- If the parameter is required by the pagelet, select the **Required** checkbox.
- Choose the appropriate data **Type**: string or numeric.
- Enter a **Description** (optional).

Figure 62–15 Pagelet Producer Console: Pagelets - Parameters Page



* Name	Required	Type	Description
No data to display			

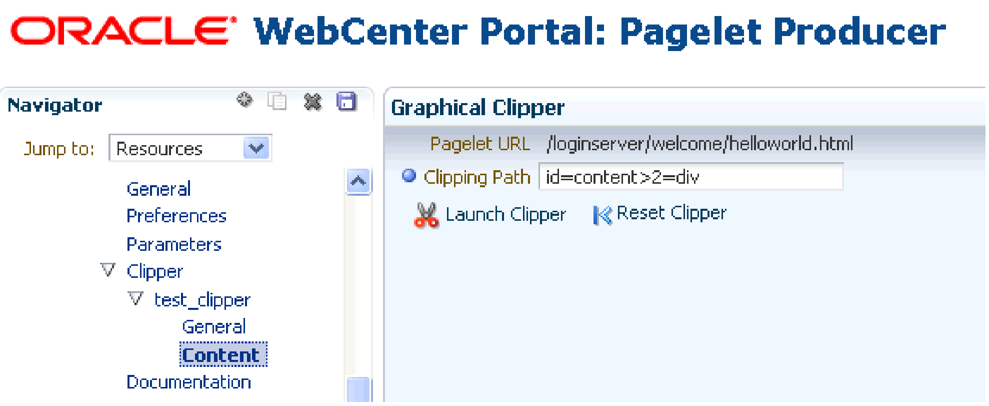
62.3.2.4 Configuring the Clipper

Clipping lets you create a pagelet by clipping a portion of a larger Web page in a proxied application. A news Web page, for example, may contain a box listing the latest headlines. By identifying the containing HTML for that box, you can clip only the headlines and serve that subset of the news Web page as a pagelet.

To create a clipper, select the **Clipper** section under the pagelet and click the **Create** icon in the toolbar. A new clipper will be created with two configuration pages:

- On the **General** page, enter a name for the clipper.
- On the **Content** page (see Figure 62–16), define the clipper content.

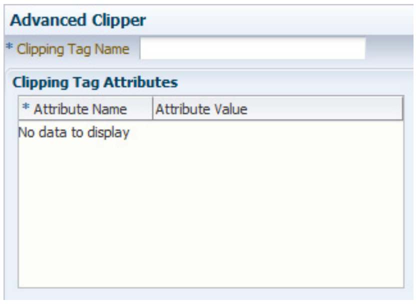
Figure 62–16 Pagelet Producer Console: Clipper - Content Page



Pagelet URL /loginserver/welcome/helloworld.html
Clipping Path id=content>2=div

- To use a graphical tool to select page content, click **Launch Clipper**.
- To specify HTML tag attributes that describe the section to be clipped, expand the **Advanced Clipper** section (Figure 62–17) and enter the tag name and associated attribute(s).

Figure 62–17 Advanced Clipper



* Attribute Name	Attribute Value
No data to display	

Keep the following in mind when using the clipper:

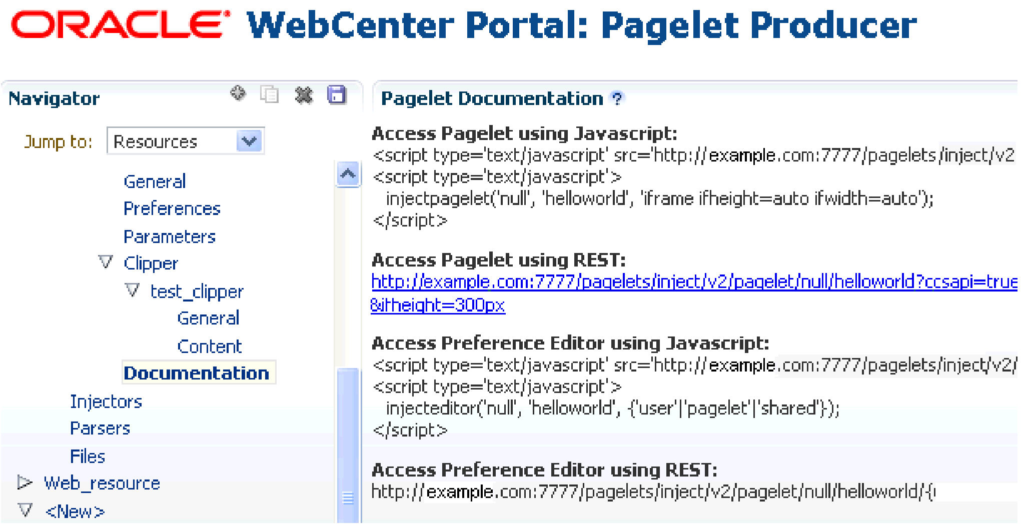
- If the back-end resource is accessed over HTTPS, make sure the Pagelet Producer Console is also accessed over a secure port.
- If the clip source is protected by a login form or other form of authentication, make sure to configure Autologin for the parent resource as described in Section 62.3.1.1.4, "Configuring Autologin." If you are using the vault to store credential values (see Section 62.3.1.1.8, "Configuring Autologin: Authentication Sources"), make sure to capture the credentials prior to using the clipper.

- If you are having problems with the clipper, make sure the configured pagelet URL can be loaded by the browser without redirects. If necessary, change the pagelet suffix to reflect the final URL loaded by the browser after following all the redirects.
- Images and code overwritten using hosted files cannot be clipped. (For more information about hosted files, see Section 62.3.5, "Creating Hosted Files.")
- If the graphical clipper cannot be used (for example, if the page ID is not available), use the Advanced Clipper to define the page region to clip using a regular expression.

62.3.2.5 Accessing the Pagelet and Preference Editor

Use the Documentation page (see Figure 62–18) to display sample code with which to access the pagelet and preference editor using either JavaScript or the REST API.

Figure 62–18 Pagelet Producer Console: Pagelets - Documentation Page



Access Pagelet using Javascript:

```
<script type='text/javascript' src='http://example.com:7777/pagelets/inject/v2
<script type='text/javascript'>
  injectpagelet('null', 'helloworld', 'iframe ifheight=auto ifwidth=auto');
</script>
```

Access Pagelet using REST:

http://example.com:7777/pagelets/inject/v2/pagelet/null/helloworld?ccsapi=true&ifheight=300px

Access Preference Editor using Javascript:

```
<script type='text/javascript' src='http://example.com:7777/pagelets/inject/v2/
<script type='text/javascript'>
  injecteditor('null', 'helloworld', {'user'|'pagelet'|'shared'});
</script>
```

Access Preference Editor using REST:

http://example.com:7777/pagelets/inject/v2/pagelet/null/helloworld/{

62.3.3 Creating Web Injectors

A Web injector inserts content into a specified location in the proxied resource page. The content may be any text, including HTML, CSS, JavaScript, and pagelet declarations. An empty injector may also be used to remove unwanted content from a page. Injectors cannot be created for OpenSocial resources.

To create a Web injector, select the **Injectors** section under the resource you want to use and click the **Create** icon in the toolbar. A new injector called "<new>" will be added to the list. Injectors can then be configured using the General and Content configuration pages as described in the following sections:

- Section 62.3.3.1, "Configuring General Settings"
- Section 62.3.3.2, "Injecting Content"

62.3.3.1 Configuring General Settings

Use the General page (see Figure 62–19) to configure basic settings for the injector.

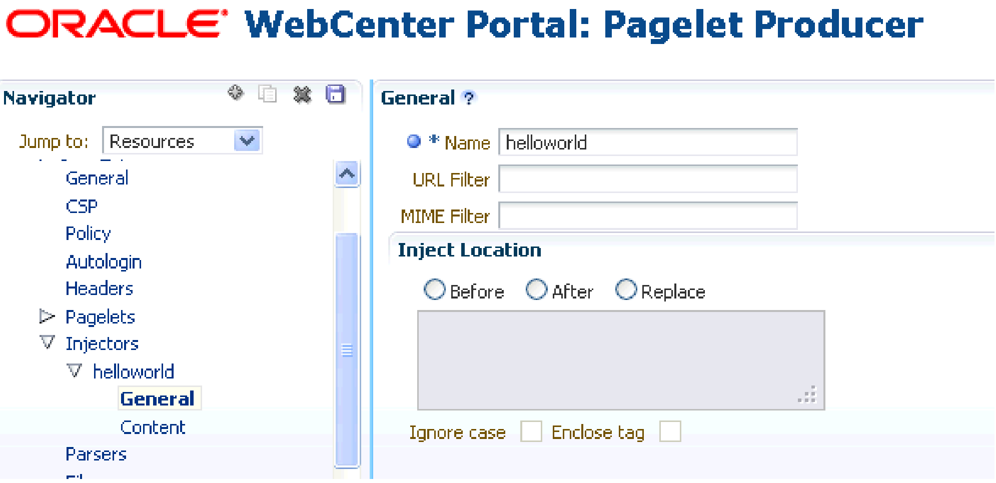
Enter a **Name** for the Web injector.

The injector can be applied to a subset of the resource by typing a URL pattern into the **URL Filter** box. The injector will be applied only to those URLs within the resource that begin with the text in the URL Filter box. If the box is empty or contains only a '/', the injector will be applied to the entire resource.

To restrict the injector to specific kinds of content, type a comma separated list of MIME types in the **MIME Filter** box. For example, *text/html* restricts the injector to HTML content, while *text/css* only restricts the injector to CSS content.

In the **Inject Location** section, define where in the resource's output the injection will be made in relation to a unique string. Enter the unique string in the field provided and choose **Before**, **After** or **Replace** to define where to put the content relative to the string. If you choose to replace the string, you can use the **Enclose tag** to replace both the string and the enclosing tag. You can choose to ignore the case of the string by selecting **Ignore case**.

Figure 62–19 Pagelet Producer Console: Injectors - General Page



Name: helloworld

62.3.3.2 Injecting Content

Use the Content page to define content to be injected using the injector. Content to be injected may be any text, including HTML, CSS, JavaScript, and pagelet declarations.

For example, the following code could be injected at the beginning of a page. The example registers a handler function with the page load event and then uses the handler to modify the page markup (by finding and hiding the header and footer).

```
<script type="text/javascript">
if (window.addEventListener) {
  window.addEventListener('load', hideHeaderFooter, false);
} else if (document.attachEvent) {
  window.attachEvent('onload', hideHeaderFooter);
}
function hideHeaderFooter() {
  var header = null;
  // find the header table by class
  if (document.getElementsByClassName) {
    header = document.getElementsByClassName('page_header')[0];
  } else {
    // for older versions of IE
    var tables = document.getElementsByTagName('table');
    for (var table in tables) {
      if (table.class == 'page_header') {
        header = table;
        break;
      }
    }
  }
  if (header != null) {
    header.style.display = 'none';
  }
  // now find and hide the footer (easier to find, since it has an id)
  var footer = document.getElementById('t23PageFooter');
  if (footer != null) {
    footer.style.display = 'none';
  }
}
</script>
```

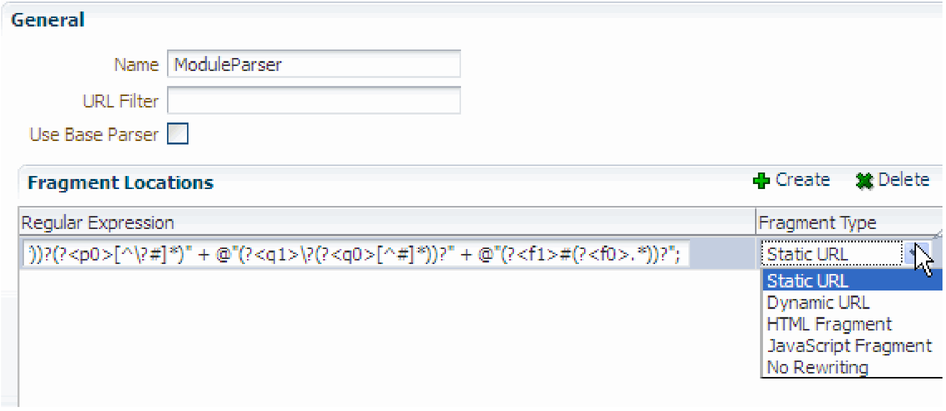
62.3.4 Creating Custom Parsers

Custom parsers allow you to supplement or change built-in logic for parsing content and finding URLs. When the built-in parsers fail to identify URLs or identify sections that must not be rewritten as URLs, custom parsers can be used to change the default behavior. Note that parsers cannot be created for WSRP or Oracle JPDK portlet producers or OpenSocial gadget producers.

To create a custom parser, select the **Parsers** section under the resource you want to use and click the **Create** icon in the toolbar to display the Parser's General page (see Figure 62–20):

- Enter a **Name** for the parser.
- The parser can be applied to a subset of the resource by typing a URL pattern into the **URL Filter** box. The parser will be applied only to those URLs within the resource that begin with the text in the URL Filter box. If the box is empty or contains only a '/', the parser will be applied to the entire resource.
- To add a new parsing rule, click **Create** to add a new row to the **Fragment Locations** section.
- In the **Regular Expressions** column, enter the regular expression for identifying the URL fragment that should be transformed. The first grouping expression (in parentheses) identifies the fragment, and the rest of the expression provides the context for finding it.
- Choose the **Fragment Type** to define how the selected location should be parsed:
  - **Static URLs** are transformed on the server.
  - **Dynamic URLs** are transformed using JavaScript on the client.
  - **HTML Fragment** and **Javascript Fragment** types are used for content that is embedded in another content type, such as XML.
  - **No Rewriting** specifies a location that should not be searched for URLs. This option is used to prevent rewriting of markup mistakenly identified as URLs.
- Click the **Save** icon in the navigator toolbar.

Figure 62–20 Pagelet Producer Console: Parsers - General Page



General

Name: ModuleParser

URL Filter:

Use Base Parser □

Fragment Locations

Regular Expression	Fragment Type
))?(?<p0>[^\?#]*)" + @"(?<q1>\?(?<q0>[^#]*))?" + @"(?<f1>#(?<f0>.*))?";	Static URL

For example, the regular expression `XMLFile=(.*?)"` would identify URLs to XML files defined within a tag, as in `<embed src="/i/flashchart/anychart_5/swf/OracleAnyChart.swf?>`**`XMLFile=http://apex.oracle.com/pls/apex/apex_util.flash?p=53557:1:74175370346201:FLOW_FLASH_CHART5_R45192463162785599619_en`**`"`.

62.3.5 Creating Hosted Files

Pagelet Producer can host all types of content (HTML, JavaScript, CSS, etc.) and present the file at a virtual URL location. Hosted files can be used for a range of purposes:

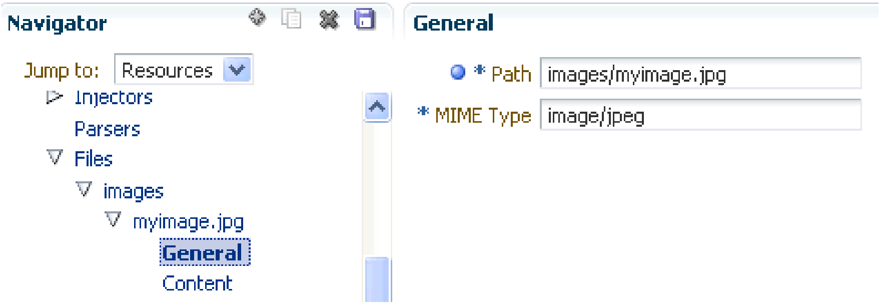
- Overwrite content and functionality in a proxied application, by uploading files and configuring them to use the same URL as the original file.
- Use hosted files in injectors to insert images or content into a proxied application.
- Host pagelet files on the Pagelet Producer server.

To upload a file, select the **Files** section under the resource you want to use and click the **Create** icon in the toolbar.

- On the **General** page (see Figure 62–21), enter the relative path to the file in the **Name** field. Do not use a leading forward-slash ("/"). The directory structure of the Files collection in the navigator is updated to match the path to the file.

  Enter the **MIME type** of the file.

Figure 62–21 Pagelet Producer Console: Files - General Page



General

* Path: images/myimage.jpg

* MIME Type: image/jpeg

- On the **Content** page, enter the path to the file or click **Browse** to navigate to the file.

Click **Upload** to upload the file to the Pagelet Producer server. If you entered text or html as the MIME type, you can also use the editor on the Content page to enter or edit file content. (The editor is only available for text and html files.) If you entered an image type as the MIME type, the uploaded image will be displayed on the Content page.

> **Note:** Text files (text/plain) uploaded to the Pagelet Producer must be saved as UTF-8.

- Click the **Save** icon in the navigator toolbar.

After the file is uploaded, it will be available for use in injectors and pagelets at the following URL: `http://<host_name>:<port_number>/pagelets/<resourcename>/<filepath>`.

For example, if the file was uploaded under the "welcome_resource" resource and the name for the file was entered as "images/myimage.jpg" the path to the hosted file on the Pagelet Producer server would be: `http://<host_name>:<port_number>/pagelets/welcome_resource/images/myimage.jpg`

Keep the following in mind when working with hosted files:

- The hosted file feature should not be used for bulky files.
- If you choose to host OpenSocial gadget XML files, the files must be placed under an anonymous resource (with no security policy) or gadget functionality will not work correctly.
- Hosted files cannot be created for WSRP or Oracle JPDK portlet producers.

62.4 Working with Pagelet Chrome for WSRP and Oracle JPDK Portlets

Pagelet Producer can be used to present WSRP and Oracle JPDK portlets for use in any Web application. This section explains how to use pagelet chrome to modify markup at runtime in WSRP or Oracle JPDK portlets. For details on configuring the Pagelet Producer to connect to a WSRP or Oracle JPDK portlet producer, see the "Managing the Pagelet Producer" chapter in *Administering Oracle WebCenter Portal*.

A pagelet chrome template is an HTML file that specifies:

- How portlet markup should be rendered stylistically
- How to display the portlet title
- How to render mode switching options

The default chrome template displays the portlet name and a dropdown menu that allows the user to switch into different modes. The dropdown menu is dynamically populated with all the standard modes supported by the underlying portlet. Templates use the following reserved tokens (see Table 62–3) to identify key portlet elements that Pagelet Producer then substitutes at runtime.

Table 62–3 Pagelet Chrome Template Tokens

Token	Description
`$$PORTLET TITLE$$`	Portlet title
`$$REPEAT MENU ITEM$$`	Used to indicate the beginning of a repeating section for navigational items

Table 62–3 (Cont.) Pagelet Chrome Template Tokens

Token	Description
`$$END REPEAT MENU ITEM$$`	Used to indicate the end of a repeating section for navigational items
`$$MENU ITEM URL$$`	Navigation URL (to switch portlet modes or window states)
`$$MENU ITEM$$`	Display name of navigational item (for example, Customize)
`$$TOKEN$$`	Unique identifier for pagelet instance on the page
`$$PORTLET CONTENT$$`	Portlet content
`pt://images`	Tag used to indicate the imageserver URL

The example below is a very simple pagelet chrome template:

```
<script type="text/javascript">
function goto(url)
{
  document.location = url;
  return false;
}
</script>
<div style="border: 1px solid">
<span><b><!-- $$PORTLET TITLE$$ --></b></span>
<span style="align: right">
  Switch Mode:
  <select size="1" name="mode">
    <!-- $$REPEAT MENU ITEM$$ -->
    <option onclick="goto('$$MENU ITEM URL$$')"><!-- $$MENU ITEM$$ --></option>
    <!-- $$END REPEAT MENU ITEM$$ -->
  </select>

</span>
</div>
<!-- $$PORTLET CONTENT$$ -->
```

Note: The pagelet chrome template file must be hosted on the classpath of the Pagelet Producer Web application.

If you configured Pagelet Producer to use an external image server, copy the files from `ensemblestatic.war/imageserver/yahoo` to your image server to properly render the default chrome template.

To implement the chrome template, add it as a parameter to the pagelet inject URL (REST or JavaScript). For details on pagelet inject URLs, see Section 62.7.2, "Adding a Pagelet to a Web Page." For example:

- REST: `/inject/v2/pagelet/pagelet_lib/pagelet_name?chrome=mychrome.html`
- JavaScript: `injectpagelet(library, name, iframe_options, payload, params, context_id, element_id,  is_in_community, chrome)`

The value of the chrome parameter can be the name of the file containing the chrome template or the special reserved value "`none`", which suppresses all chrome and sends back portlet markup only. If the chrome parameter is omitted, the default chrome is returned with the portlet markup. The default chrome template uses YUI menu control to display a gradient title bar and a DHTML dropdown menu for switching modes. (When ADF content is detected, a different chrome template is used by default. This template can be overridden with a custom template or with the standard default template by setting `chrome=chrometemplate.html`.)

62.5 Working with OpenSocial Gadgets

Any OpenSocial gadget reachable by the Pagelet Producer server can be registered as a pagelet and used in any Web application, including a portal. To support OpenSocial gadgets, you must first define an OpenSocial container as described in Section 62.2.7, "Configuring OpenSocial Settings."

Pagelet Producer supports most of the standard OpenSocial APIs excluding OAuth. The complete OpenSocial API reference documentation can be found here:

http://docs.opensocial.org/display/OSD/Specs

Pagelet Producer also allows gadgets to store preferences, retrieve WebCenter Portal profile and connection information, and access a user's activity stream using OpenSocial APIs.

This section contains the following subsections:

- Section 62.5.1, "Configuring Authentication"
- Section 62.5.2, "Storing User Preferences"
- Section 62.5.3, "Accessing WebCenter Portal Profile Information"
- Section 62.5.4, "Accessing a User's Activity Stream"
- Section 62.5.5, "Using Gadget Eventing"
- Section 62.5.6, "Example: Consuming an External OpenSocial Gadget"
- Section 62.5.7, "Example: Consuming a Local OpenSocial Gadget"

62.5.1 Configuring Authentication

In order for gadgets to request user-level data (preferences or people connections), the end user's identity must be established. If any OpenSocial gadgets need to access user-level data from the server, you must configure a security policy for the parent OpenSocial resource in the Pagelet Producer Console (see Section 62.3.1.3.2, "Configuring Policy Settings"). The first time a user accesses an OpenSocial gadget, a login page will be presented. After the initial login, subsequent requests for OpenSocial gadgets will use the established user identity.

62.5.2 Storing User Preferences

OpenSocial gadgets may use user preferences to store data at the container. User preferences are scoped to a particular user and may optionally be scoped to an appId (the gadget appId is the pagelet context ID). If you choose to use the OpenSocial gadget.Prefs API, the user preferences will be scoped to the user and pagelet instance. Alternatively, you may use the opensocial.DataRequest API to manage preferences at the user level that can be shared with other pagelets.

When registered as a pagelet, a gadget's user preferences are treated as pagelet preferences. In WebCenter Portal, for example, non-hidden user preferences can be edited by the end user using the Personalize button. Additionally, to simulate preferences shared between users, you may pass in user preferences via pagelet parameters. Note that a pagelet preference, if set, will always override the corresponding pagelet parameter (in other words, personalization takes precedence over customizations).

Outside of WebCenter Portal, gadget-backed pagelets are provided with a simple chrome that displays the gadget title and buttons for accessing the preference editor and minimizing/maximizing the gadget. The chrome may be suppressed by passing in the value of 'none' to the chrome parameter in the Pagelet Inject API. The preference editor UI supports all four types of user preferences:

- string: rendered as a text field
- bool: rendered as a checkbox
- enum: rendered as a dropdown list
- list: rendered as a text field (values must be separated with a pipe "|" character)

62.5.3 Accessing WebCenter Portal Profile Information

OpenSocial gadgets can query the current user's profile data and people connections via the standard OpenSocial API. To use this feature, you must manually target the WebCenterDS data source to the `WC_Portlet` server as described in the "Managing the Pagelet Producer" chapter in *Administering Oracle WebCenter Portal*.

> **Note:** The OpenSocial API cannot be used to update profile or connection information.

The supported user profile fields are listed in Table 62–4.

Table 62–4 User Profile Fields

OpenSocial Field	Type	Description
aboutme	string	A general statement about the person.
addresses	Plural-Field <Address>	A physical mailing address for the person.
appData	Plural-Field <AppData>	A collection of AppData keys and values, used for preferences.
birthday	Date	The birthday of the person. The value MUST be a valid Date. The year may be set to 0000 when the age of the person is private or the year is not available.
emails	Plural-Field <string>	Email address for the person.
location	string	Physical address for the person.
name	Name	The broken-out components and formatted version of the person's real name.
organizations	Plural-Field <Organization>	Current or past organizational affiliation of the person.
phoneNumbers	Plural-Field <string>	Phone number for the person. In addition to the standard canonical values for type, this field defines the additional values mobile, fax, and pager.
photos	Plural-Field <string>	URL to a photo of the person. The value MUST point to an actual image file (e.g. a GIF, JPEG, or PNG image file) rather than to a Web page containing an image. Note that this field SHOULD NOT be used to send down arbitrary photos taken by this user, but specifically profile photos of the contact suitable for display when describing the contact.
preferredUsername	string	The preferred username of this person on sites that ask for a username (e.g. jsmarr or daveman692).
status	string	The person's status, headline or shoutout.
thumbnailUrl	string	The person's photo thumbnail URL, specified as a string. This URL MUST be fully qualified.

62.5.4 Accessing a User's Activity Stream

OpenSocial gadgets can operate on a user's activity stream using OpenSocial APIs. The following operations are supported:

- get activities
- create activity

The following operations are not supported:

- update activity
- delete activity

The supported activity stream fields are listed in Table 62–5.

Table 62–5 Activity Stream Fields

OpenSocial Field	Type	Description
appId	Object-Id	The application with which the activity is associated.
body	string	An optional expanded version of the activity. Bodies may only have the following HTML tags: <b> <i>, <a>, <span>, but this formatting may be ignored.
externalId	Object-Id	An optional ID generated by the posting application.
id	Object-Id	An ID that is permanently associated with the activity.
postedTime	string	The time at which the activity took place in milliseconds since the epoch.
priority	number	A number between 0 and 1 representing the relative priority of the activity in relation to other activities from the same source.
title	string	The primary text of the activity. Titles may only have the following HTML tags: <b> <i>, <a>, <span>, but this formatting may be ignored.
userId	Object-Id	ID of the user for whom the activity is defined.

62.5.5 Using Gadget Eventing

Pagelet Producer supports the OpenSocial pubsub inter-gadget eventing model. A gadget may publish events over any number of arbitrary channels (defined by simple string names) in JavaScript. On the receiving end, a gadget may subscribe to receive events over any number of channels, again in JavaScript, and take appropriate actions based on the events.

```
function connSelected(element) {
  var connId = element.id;
  var connName = element.lastChild.textContent;
  gadgets.pubsub.publish(channel, {id: connId, name: connName});
```

For a complete JavaScript reference to the supported eventing API, see:

http://docs.opensocial.org/display/OSD/Specs

62.5.6 Example: Consuming an External OpenSocial Gadget

The example that follows is simplified for illustration. To support OpenSocial gadgets, you must first define an OpenSocial container as described in Section 62.2.7, "Configuring OpenSocial Settings."

1. Using the Pagelet Producer Console, create a new Resource and choose **OpenSocial** as the type. Define URLs and policies as necessary. Save the new Resource.
2. Using the Pagelet Producer Console, create a new pagelet and enter the location of the gadget XML schema in the **Gadget URL** field.
    - To import the gadget name and any user preferences defined for the gadget, click the **Import Gadget Metadata** button. If any of the preferences are

editable, Pagelet Producer will create a preference editor using the imported preferences.

- To configure or customize the generated preference editor, go to the **Pagelet Parameters** page.

3. Go to the **Documentation** page to view sample code to access the pagelet and preference editor using either the JavaScript or REST API.
4. Save the new pagelet.

62.5.7 Example: Consuming a Local OpenSocial Gadget

The example that follows is simplified for illustration. To support OpenSocial gadgets, you must first define an OpenSocial container as described in Section 62.2.7, "Configuring OpenSocial Settings."

1. Using the Pagelet Producer Console, create a new Resource and choose **OpenSocial** as the type. Define URLs and policies as necessary. Save the new Resource.
2. Create or upload the gadget file.

> **Note:** If you choose to host OpenSocial gadget XML files, the files must be placed under an anonymous resource (with no security policy) or gadget functionality will not work correctly.

   a. Select the **Files** section under the resource and click the **Create** icon in the toolbar.

   b. On the **General** page, enter the relative path to the file in the **Name** field. Do not use a leading forward-slash ("/"). For example, "gadgets/activities.xml". Any path and name can be used; the path is a 'virtual' URL that Pagelet Producer will use to serve the file. The visual directory structure of the Files collection in the navigator is updated to match the path to the file.

   c. Go to the **Content** page to upload or create the gadget file.

   To upload a gadget file, enter the path to the file or click the Browse button to navigate to the file, then click the **Upload** button to upload the file to the Pagelet Producer server.

   To create a gadget file, use the editor on the **Content** page to enter and edit content.

   d. Click the **Save** icon in the navigator toolbar.

3. Create or upload any other files required by the gadget (JavaScript, images, etc.) in the **Files** section of the resource. Define paths for the files that match the paths in the gadget code. For example, if the gadget uses JavaScript files in a subfolder called "js", include that directory in the Name field when you upload the files (e.g., "gadgets/js/activities.js").
4. Using the Pagelet Producer Console, create a new pagelet and enter the relative path to the gadget XML schema (created or uploaded in step 2) in the **Gadget URL** field. For local files, this is the same path defined in the Name field for the file object; for example, "gadgets/activities.xml".

   - To import the gadget name and any user preferences defined for the gadget, click the **Import Gadget Metadata** button. If any of the preferences are editable, Pagelet Producer will create a preference editor using the imported preferences.

5. Go to the **Documentation** page to view sample code to access the pagelet and preference editor using either the JavaScript or REST API.
6. Save the new pagelet.

62.6 Building Custom Pagelets Using Pagelet Producer

This section provides detailed information about building pagelets using Pagelet Producer, including how to use the Adaptive Pagelet Scripting Framework, configure security settings for pagelets and resources to manage authentication for users, use custom Web injectors and parsers to modify pagelet functionality at runtime, and access advanced logging traces for debugging.

This section contains the following subsections:

- Section 62.6.1, "Using the Adaptive Pagelet Scripting Framework"
- Section 62.6.2, "Modifying Pagelet Functionality at Runtime"
- Section 62.6.3, "Debugging Pagelets"

62.6.1 Using the Adaptive Pagelet Scripting Framework

The *Adaptive Pagelet Scripting Framework* is a client-side JavaScript library that provides services to CSP pagelets and proxied pages. This section explains how to use the scripting framework to implement dynamic functionality in pagelets.

> **Note:** CSP (and the Adaptive Pagelet Scripting Framework) only applies to WCI and its predecessor, Plumtree Portal. WebCenter Portal does not support WebCenter Portal.

This section includes the following subsections:

- Section 62.6.1.1, "Handling Structured HTTP Responses"
- Section 62.6.1.2, "Using Event Notification"
- Section 62.6.1.3, "Using In-Place Refresh"
- Section 62.6.1.4, "Using Session Preferences"

For a full list of classes and methods, see the JSPortlet API documentation. For additional information about adaptive pagelets, see Section 62.6.1.5, "Adaptive Pagelet Development Tips."

62.6.1.1 Handling Structured HTTP Responses

This section describes how the adaptive pagelet scripting framework can be used as a client-side response handler for structured HTTP, typically encoded as XML.

In many cases it can be expensive and inefficient to send large amounts of HTML back in response to some HTTP request, if only a small part of the user interface needs to be changed. This is especially true with more complex user interfaces. In these cases, the response can be encoded in XML. The client-side response handler can then parse the XML, and update the user interface (or perform some other action) based on that response. Use the Structured Response design pattern to redraw a small area of the user interface after making an HTTP request, or to access a simple HTTP/URI type

Web service from a pagelet. The example code below (structuredresponse_portlet.html) accesses an RSS feed from a selection of news sites.

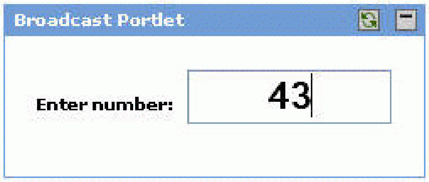
```
<!-- jsxml includes -->
<a id="imgServerHref" href="/images/plumtree" style="display:none"></a>
<script type="text/javascript"
src="/images/plumtree/common/private/js/PTLoader.js"></script>
<script type="text/javascript">
var oImgServer = new Object();
oImgServer.location = document.getElementById('imgServerHref').href;
var imageServerURL = document.getElementById('imgServerHref').href;
var imageServerConnectionURL = oImgServer.location;
new PTLoader(imageServerURL, imageServerConnectionURL).include('jsxml','en');
</script>

<!-- jscontrols includes -->
<link rel="stylesheet" type="text/css"
href="/portal-remote-server/js/jscontrols/styles/css/PTMenu.css"/>
<link rel="stylesheet" type="text/css"
href="/portal-remote-server/js/jscontrols/styles/css/PTRichTextEditor.css"/>
<script type="text/javascript"
src="/portal-remote-server/js/jscontrols/strings/PTControls-en.js"></script>
<script type="text/javascript"
src="/portal-remote-server/js/jscontrols/PTControls.js"></script>

<!-- Inline JS helper functions -->
-->

<script defer type="text/javascript" id="structured-response-portlet-A-script">
// Function that gets the RSS XML feed found at the specified url
getRSSFeed = function(url)
  {
  // First clear out any existing rows in the table
  channelTable.clearRows();

  // Force the transformer to fix up the url
  var oURL = new Object();
  oURL.location = url;

  // Do the http get
  var get = new PTHTTPGETRequest(oURL.location, handleRSSResponse);
  get.invoke();
  }

// Function that handles the RSS XML response and updates the table based on the
RSS items
handleRSSResponse = function(response)
  {
  // Get the rss xml
  var xml = response.responseText;
  if (!xml || xml.indexOf('<?xml') == -1) { return; }

  // Parse into a dom, and get the channel node
  var xmlDOM = new PTXMLParser(xml);
  var rssNode = xmlDOM.selectSingleNode('rss');
  var channelNode = rssNode.selectSingleNode('channel');

  // Get the channel title and set the status bar text in the table
  var channelTitle = channelNode.selectSingleNode('title').getNodeValue();
  channelTable.statusBarText = '<b>Loaded Channel</b>: ' + channelTitle;
  // Get channel item nodes
  var itemNodes = channelNode.selectNodes('item');

  // Build table rows
  channelTable.rows = new Array();
  for (var i=0; i<itemNodes.length; i++)
    {
    var itemNode = itemNodes[i];

    // Get channel item properties
    var itemTitle = itemNode.selectSingleNode('title').getNodeValue();
    var itemLink = itemNode.selectSingleNode('link').getNodeValue();
    var itemDescription = itemNode.selectSingleNode('description').getNodeValue();
    if (itemNode.selectSingleNode('author'))
      var itemAuthor = itemNode.selectSingleNode('author').getNodeValue();
    if (itemNode.selectSingleNode('category'))
      var itemCategory = itemNode.selectSingleNode('category').getNodeValue();
    if (itemNode.selectSingleNode('pubDate'))
      var itemPubDate = itemNode.selectSingleNode('pubDate').getNodeValue();

    // Create a row and add it to the table
    var row = new PTRow();
    row.parent = channelTable;
    row.id = i;
    row.uid = i;
    row.previewText = itemDescription;
    row.link = itemLink;
    row.columnValues[0] = new PTTextColumnValue(itemTitle);
    row.columnValues[1] = new PTTextColumnValue(itemCategory);
    row.columnValues[2] = new PTTextColumnValue(itemAuthor);
    row.columnValues[3] = new PTTextColumnValue(itemPubDate);
    channelTable.rows[channelTable.rows.length] = row;
    }

  // Redraw the table
  channelTable.draw();
  }
</script>

<b>Select RSS Feed:</b>
<a href="#"
onclick="getRSSFeed('http://www.wired.com/news/feeds/rss2/0,2610,,00.xml'); return
false;">Wired News</a>
<a href="#" onclick="getRSSFeed('http://news.com.com/2547-1_3-0-5.xml'); return
false;">CNET News.com</a>
<a href="#"
onclick="getRSSFeed('http://partners.userland.com/nytRss/nytHomepage.xml'); return
false;">NY Times</a>
<br><br>

<!-- Set up a table control to display channel items -->
<div id="channelTableContainer"></div>
<script defer type="text/javascript">
  var channelTable = new PTTableControl();
  channelTable.locale = 'en_US';
  channelTable.objName = 'channelTable';
  channelTable.container = 'channelTableContainer';
  channelTable.baseURL =
'/imageserver/plumtree/common/private/portal-remote-server/js/jscontrols/1/';
  channelTable.statusBarText = 'No RSS Feed Selected';
  channelTable.rowDetailAction = new
PTJavaScriptAction('window.open(\'${ROW.link}\');');
  channelTable.columns[0] = new PTColumn();
  channelTable.columns[0].name = 'Title';
  channelTable.columns[0].width = '40%';
  channelTable.columns[1] = new PTColumn();
  channelTable.columns[1].name = 'Category';
  channelTable.columns[1].width = '20%';
  channelTable.columns[2] = new PTColumn();
  channelTable.columns[2].name = 'Author';
  channelTable.columns[2].width = '20%';
  channelTable.columns[3] = new PTColumn();
  channelTable.columns[3].name = 'Publication Date';
  channelTable.columns[3].width = '20%';
  channelTable.areColumnsResizable = true;
  channelTable.clientSortEnabled = true;
  channelTable.scrollHeight = 250;
  channelTable.init();
  channelTable.draw();
</script>
</div>
```

62.6.1.2 Using Event Notification

This section describes how the adaptive pagelet scripting framework allows pagelets to respond to both page-level events and custom events raised by other pagelets.

The `registerForWindowEvent` and `registerOnceForWindowEvent` methods in the scripting framework provide pagelets with access to page-level events. For a complete list, see Section 62.6.1.2.1, "Page-Level Events for Use with the Scripting Framework." To register for notification of these events, pass in the name of the event and the name of the method that should be called when it occurs. When a page-level event is raised, the JavaScript event object is passed to the event handler as an argument. The scripting framework also allows pagelets to raise and respond to custom events using `raiseEvent` and `registerForEvent`. The Broadcast-Listener design pattern illustrates an important example of using notification services with session preferences. Users can select an item or perform some other action in a "broadcast" pagelet, which causes the content in other related "listener" pagelets to be redrawn. In the following example, the broadcast pagelet displays a form that allows you to enter a number in a text box.

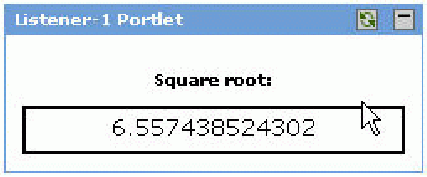
Figure 62–22 Broadcast Portlet



Enter number: 43

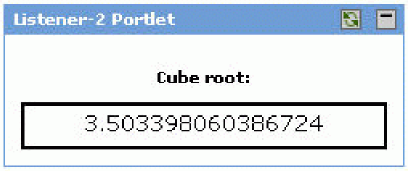
When the user enters a number in the text box, the values in the listener pagelets change. The first listener pagelet displays the square root of the number entered in the broadcast pagelet.

Figure 62–23 Listener -1 Portlet



The second listener pagelet displays the cube root of the number entered in the broadcast pagelet.

Figure 62–24 Listener -2 Portlet



The following steps summarize how the pagelets work:

- On load, each listener pagelet calls its own instance method (`registerForEvent`) to register for events of type 'onBroadcastUpdate'.
- On each onkeyup event that occurs in the "Enter number" text box, the broadcast pagelet sets a session preference to the value entered in the text box, and calls its own instance method (`raiseEvent`) to raise an event of type 'onBroadcastUpdate'.
- When the onBroadcastUpdate event is raised or the page is reloaded, each listener pagelet retrieves the session preference set by the broadcast pagelet and computes a new value to display based on the value of the preference.

Broadcast Pagelet

```
<div style="padding:10px;" align="center">
<p><b>Enter number:</b>
&nbsp;<input type="text"
style="font-size:22px;font-weight:bold;text-align:center;"
id="broadcast_prefName" value="4" size="7" onkeyup="broadcast_
setPrefs(this.value)"></p>
<br>
</div>

<script type="text/javascript">
function broadcast_setPrefs(val)
{
    var prefName = 'broadcastNumber';
    var prefValue = val;
    PTPortlet.setSessionPref(prefName,prefValue);
    var broadcastPortlet =
PTPortlet.getPortletByGUID('{D9DFF3F4-EAE7-5478-0F4C-2DBD94444000}');

      if (!broadcastPortlet)
    {
        broadcast_debug('Could not locate PTPortlet object which corresponds to
<b>Broadcast Portlet</b> on page.');
        return;
        }
      broadcast_debug('<b>Broadcast Portlet</b> raising onBroadcastUpdate
event.');
    broadcastPortlet.raiseEvent('onBroadcastUpdate',false);
}
function broadcast_debug(str)
{
    if (window.PTDebugUtil)
    {
        PTDebugUtil.debug(str);
    }
}
</script>
```

Listener Pagelet #1

```
<div style="padding:10px;" align="center">
<p><b>Square root:</b>
<div style="height:21px;border:2px solid
black;padding:2px;overflow:visible;font-size:14px;"id="listener1-swatch">
</div>
</div>

<script>
function listener1_update()
{
    var broadcastNumber = parseFloat(PTPortlet.getSessionPref('broadcastNumber'));
    if (isNaN(broadcastNumber))
    {
        listener1_error('<b>Listener-1 Portlet</b> cannot parse number from
session pref broadcastNumber');
        return;
    }

      listener1_debug('<b>Listener-1 Portlet</b> computing square root of ' +
broadcastNumber);
      var swatch = document.getElementById('listener1-swatch');
    swatch.innerHTML = Math.sqrt(broadcastNumber);
}

function listener1_debug(str)
{
    if (window.PTDebugUtil)
    {
        PTDebugUtil.debug(str);
    }
}

function listener1_error(str)
{
    if (window.PTDebugUtil)
    {
        PTDebugUtil.error(str);
    }
}

function listener1_getPortlet()
{
    var portletGUID = '{D9DFF3F4-EAE7-5478-0F4C-2DBDB4F4A000}';
    var listener1Portlet = PTPortlet.getPortletByGUID(portletGUID);
    return listener1Portlet;
}
```

```
var listener1Portlet = listener1_getPortlet();
if (listener1Portlet)
{
    listener1Portlet.registerForEvent('onBroadcastUpdate','listener1_update');
    listener1_debug('<b>Listener-1 Portlet</b> registered refreshOnEvent for event
onBroadcastUpdate');
    listener1Portlet.registerForEvent('onload','listener1_update');
}

</script>
```

Listener Pagelet #2

```
<div style="padding:10px;" align="center">
<p><b>Cube root:</b>
<div style="height:21px;border:2px solid
black;padding:2px;overflow:visible;font-size:14px;"id="listener2-swatch">
</div>
</div>

<script>
var listener2_oneThird = (1/3);
function listener2_update()
{
    var broadcastNumber = parseFloat(PTPortlet.getSessionPref('broadcastNumber'));
    if (isNaN(broadcastNumber))
    {
        listener2_error('<b>Listener-2 Portlet</b> cannot parse number from
session pref broadcastNumber');
        return;
    }

    listener2_debug('<b>Listener-2 Portlet</b> computing square root of ' +
broadcastNumber);
    var swatch = document.getElementById('listener2-swatch');
    swatch.innerHTML = Math.pow(broadcastNumber,listener2_oneThird);
}

function listener2_debug(str)
{
    if (window.PTDebugUtil)
    {
        PTDebugUtil.debug(str);
    }
}

function listener2_error(str)
{
    if (window.PTDebugUtil)
    {
        PTDebugUtil.error(str);
    }
}

function listener2_getPortlet()
{
    var portletGUID = '{D9DFF3F4-EAE7-5478-0F4C-2DBDCA1C7000}';
    var listener2Portlet = PTPortlet.getPortletByGUID(portletGUID);
    return listener2Portlet;
}
```

```
var listener2Portlet = listener2_getPortlet();
if (listener2Portlet)
{
    listener2Portlet.registerForEvent('onBroadcastUpdate','listener2_update');
    listener2_debug('<b>Listener-2 Portlet</b> registered refreshOnEvent for event
onBroadcastUpdate');
    listener2Portlet.registerForEvent('onload','listener2_update');
}

</script>
```

62.6.1.2.1 Page-Level Events for Use with the Scripting Framework The scripting framework automatically has access to the following page-level events.

Table 62–6 Page-Level Events

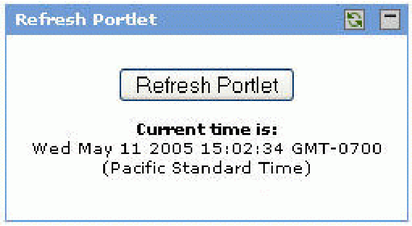
Event	Triggered:
onload	immediately after the browser loads the page
onbeforeunload	prior to a page being unloaded (browser window closes or navigates to different location)
onunload	immediately before the page is unloaded (browser window closes or navigates to different location)
onactivate	the page is set as the active element (receives focus)
onbeforeactivate	immediately before the page is set as the active element (receives focus)
ondeactivate	when the active element is changed from the current page to another page in the parent document
onfocus	when the page receives focus
onblur	when the page loses focus
oncontrolselect	when the user is about to make a control selection of the page
onresize	when the size of the page is about to change
onresizestart	when the user begins to change the dimensions of the page in a control selection
onresizeend	when the user finishes changing the dimensions of the page in a control selection
onhelp	when the user presses the F1 key while the browser is the active window
onerror	when an error occurs during page loading
onafterprint	immediately after an associated document prints or previews for printing

62.6.1.3 Using In-Place Refresh

This section describes how pagelets can reload their internal content without refreshing the page using the scripting framework to implement in-place refresh.

Many pagelets display data that is time sensitive. In some cases, users should be able to navigate across links within a pagelet without changing or refreshing the rest of the page. You can refresh pagelet content on command, associate the refresh action with an event (`refreshOnEvent`), or program the pagelet to refresh at a set interval (`setRefreshInterval`). The scripting framework also contains methods for expanding and collapsing pagelets. In the simplified example below, the refresh pagelet displays a "Refresh Portlet" button. Clicking the button updates the date and time displayed in the pagelet.

Figure 62–25 Refresh Portlet



Current time is:
Wed May 11 2005 15:02:34 GMT-0700
(Pacific Standard Time)

The in-place refresh is executed by calling the `refresh()` method on the pagelet object instance. You can also set a new URL to be displayed within the pagelet upon refresh. (The title bar cannot be altered on refresh.)

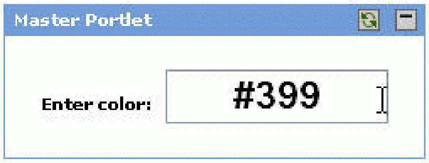
```
<div style="padding:10px;" align="center">
<p><button onclick="refresh_portlet()">Refresh Portlet</button></p>
<p><b>Current time is:</b><br> <span id="refreshTimeSpan"></span></p>
</div>

<script type="text/javascript">
function refresh_portlet()
{
var refreshPortlet = PTPortlet.getPortletByID($PORTLET_ID$);
if (!refreshPortlet)
  {
  refresh_debug('Could not locate PTPortlet object which corresponds to <b>Refresh
Portlet</b> on page.');
  return;
  }
refresh_debug('<b>Refresh Portlet</b> calling refresh() method.');
refreshPortlet.refresh();
}

function refresh_debug(str)
{
if (window.PTDebugUtil)
  {
  PTDebugUtil.debug(str);
  }
}

var t = new Date();
document.getElementById('refreshTimeSpan').innerHTML = t;
</script>
```

62.6.1.4 Using Session Preferences

This section describes how browser-level variables can be stored and shared among pagelets, even if they are not on the same page. For example, a value entered by the user in one pagelet can be retrieved by another. The scripting framework acts as an intermediary, allowing all pagelets access to all values stored in a common session using session preferences.

Pagelets can use preferences to communicate with each other, but accessing preferences usually requires a round trip to a database. Session preferences provide a way to store and share settings in the user's session within the client browser. The Master-Detail design pattern illustrates the most basic usage of session preferences. This design pattern splits control and display between two pagelets. For example, the "master" pagelet could summarize data in list form, and the "detail" pagelet could display details on each data item in response to user selection. In the example below, the master pagelet displays a form that allows you to enter a color code in a text box.

Figure 62–26 Color Code

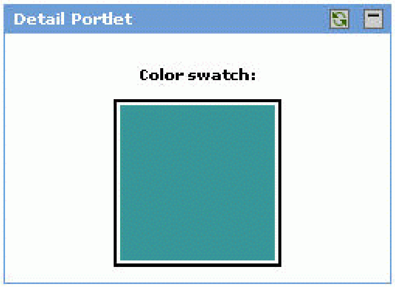


Master Portlet

Enter color: #399

When the user enters a color code in the text box, the color in the detail pagelet changes.

Figure 62–27 Color Swatch



Detail Portlet

Color swatch:

For each onkeyup event that occurs in the "Enter color" text box in the master pagelet, the following steps are executed:

1. The master pagelet sets the session preference using the current value of the text box.
2. The master pagelet calls an update method on the detail pagelet.
3. The detail pagelet retrieves the session preference to get the color value.
4. The detail pagelet redraws its color swatch area to reflect the new color value.

Note: Shared session preferences must be specified by name on the Preferences page for the pagelet in the Pagelet Producer Console or they will not be sent to the pagelet.

The adaptive pagelet scripting framework provides an easy way to detach the relationship between pagelets and use a common event interface for communication.

Note: The example below is oversimplified; the master pagelet makes a direct call to a JavaScript method of the detail pagelet. Unless the master pagelet takes extra measures to ensure that the detail pagelet is actually present on the same page, calls from master to detail could generate errors.

Master Pagelet

```
<div style="padding:10px;" align="center">
<p><b>Enter color:</b> &nbsp;
```

```
<input type="text" style="font-size:22px;font-weight:bold;text-align:center;"
id="master_prefName"
value="#FFFFFF" size="8" onkeyup="master_setPrefs(this.value)"></p><br>
</div>

<script type="text/javascript">
function master_setPrefs(val)
{
var prefName = 'masterColor';
var prefValue = val;
PTPortlet.setSessionPref(prefName,prefValue);

master_debug('<b>Master Portlet</b> called
PTPortlet.setSessionPref(\'masterColor\',\'' + prefValue + '\').');

if (window.detail_update)
  {
  master_debug('<b>Master Portlet</b> calling detail_update().');
  detail_update();
  }
else
  {
  master_debug('Could not locate portlet <b>Detail Portlet</b> on page.');
  }
}
function master_debug(str)
{
if (window.PTDebugUtil)
  {
  PTDebugUtil.debug(str);
  }
}
</script>
```

Detail Pagelet

```
<div style="padding:10px;" align="center">
<p><b>Color swatch</b> &nbsp;
<div style="width:100px;height:100px;border:2px solid
black;padding:2px;"id="detail-swatch"></div>
<script>
function detail_update()
{
var color = PTPortlet.getSessionPref('masterColor');
detail_debug('<b>Detail Portlet</b> received value="' + color + '" for
PTPortlet.getSessionPref(\'masterColor\')');

var swatch = document.getElementById('detail-swatch');
if (swatch)
  {
  swatch.innerHTML = '<div style="background-color:' + color +
';width:100%;height:100%;"></div>';
  }
else
  {
  detail_debug('<b>Detail Portlet</b> cannot find \'detail-swatch\' DIV
element.');
  }
}

function detail_debug(str)
```

```
{
if (window.PTDebugUtil)
  {
  PTDebugUtil.debug(str);
  }
}
</script>
```

62.6.1.5 Adaptive Pagelet Development Tips

These tips apply to most pagelets that use the adaptive pagelet scripting framework.

- **Use unique names for all forms and functions.** Use the GUID of a pagelet to form unique names and values to avoid name collisions with other code on the page.
- **Proxy all URLs.** You cannot make a request to a URL with a host/port that is different from that of the calling page. All URLs requested through JavaScript must be proxied.
- **If you are using the adaptive pagelet scripting framework, check for support.** It is good practice to include code that determines whether or not the component is present. Ideally, your pagelet should be able to handle either situation. The simplest solution is to precede your code with an If statement that alerts the user if the scripting framework is not supported.

```
<script>
if (PTPortlet == null)
  {
  if (document.PCC == null)
    {
    alert("This pagelet only works in portals that support the JSPortlet API .
The pagelet will be displayed with severely reduced
    functionality. Contact your Administrator.");
    }
  }
else
  {
  [scripting code here]
  }
</script>
```

- **Close all popup windows opened by a pagelet when the window closes.** The scripting framework can be used to close popup windows using the `onunload` event.
- **Add all required JavaScript to the page in advance.** Browsers might not process script blocks/includes added to the page through the `innerHTML` property.
  - Microsoft Internet Explorer: Add the defer attribute to the script tag.
  - Netscape: Use RegExp to parse the response and look for the script, then eval it.
- **JavaScript HTTP and proxied HTTP must use the same authentication credentials.** JavaScript brokered HTTP requests send the same authentication token (cookie) as when you make a normal gatewayed HTTP request.

62.6.2 Modifying Pagelet Functionality at Runtime

This section describes how to modify pagelet functionality at runtime using custom injectors and parsers.

This section includes the following subsections:

- Section 62.6.2.1, "Using Web Injectors"
- Section 62.6.2.2, "Using Custom Parsers"

62.6.2.1 Using Web Injectors

A Web injector inserts content into a specified location in the proxied resource page. The content may be any text, including HTML, CSS, JavaScript, and pagelet declarations. An empty injector may also be used to remove unwanted content from a page. Injectors cannot be created for OpenSocial resources. While injecting simple HTML content has a limited use case, you can also inject JavaScript that directly modifies the pagelet's HTML markup. For details on creating a Web injector, see Section 62.3.3, "Creating Web Injectors."

62.6.2.2 Using Custom Parsers

Custom parsers allow you to supplement or change built-in logic for parsing content and finding URLs. When the built-in parsers fail to identify URLs or identify sections that must not be rewritten as URLs, custom parsers can be used to change the default behavior. Parsers cannot be created for WSRP or Oracle JPDK portlet producers or for OpenSocial gadget producers. For details on creating a custom parser, see Section 62.3.4, "Creating Custom Parsers."

62.6.3 Debugging Pagelets

This section describes how to use advanced logging traces for debugging pagelets. Logging is configured in the Settings section of the Pagelet Producer Console, where you can define different levels of logging for each Pagelet Producer component. For more information, see Section 62.2, "Configuring Pagelet Producer Settings."

This section includes the following subsections:

- Section 62.6.3.1, "Viewing HTTP Requests and Responses"
- Section 62.6.3.2, "Viewing Transformation Content"

62.6.3.1 Viewing HTTP Requests and Responses

To view the HTTP requests and responses received and sent by Pagelet Producer, set the **HTTP** component on the Logging Settings page to **Finest**. The traces in Example 62–1, Example 62–2, Example 62–3, and Example 62–4 were captured from a test environment.

Example 62–1 HTTP Request Received By Pagelet Producer

```
URL: http://example.com:7001/pagelets/bidwiki/includes/js/ajax.js
METHOD: GET
SESSION ID:
GdYGNJzMhxy1CJBMVTX8xTNq32GmLXYNY9VqFBcdprFnhcyQtzdp!1377086614!1305769149498
HEADERS:
  Host: example.com
  Connection: keep-alive
  Referer: http://example.com:7001/pagelets/bidwiki/dashboard.action
  User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US) AppleWebKit/534.16
(KHTML, like Gecko) Chrome/10.0.648.205 Safari/534.16
  Accept: */*
  Accept-Encoding: gzip,deflate,sdch
  Accept-Language: en-US,en;q=0.8,ru;q=0.6,it;q=0.4
  Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.3
  If-None-Match: W/"736-1124953206000"
  If-Modified-Since: Thu, 25 Aug 2012 07:00:06 GMT
COOKIES:
  JSESSIONID: GdYGNJzMhxy1CJBMVTX8xTNq32GmLXYNY9VqFBcdprFnhcyQtzdp!1377086614
```

Example 62–2 HTTP Response Sent By Pagelet Producer

```
URL: http://example.com:7001/pagelets/bidwiki/styles/main-action.css
Response Code: 200
Reason:
HEADERS:
  Date: Thu, 19 May 2011 01:39:14 GMT
  Content-Type: text/css;charset=UTF-8
  Server: Apache-Coyote/1.1
BODY:
.sidebar {
    /*background-image: url(http://example.com:7001/pagelets/bidwiki/download/
resources/leftnav_bg.jpg);*/
    /*background-repeat: repeat-y;*/
    background-color: #F0F0F0;
    /*border-bottom:1px solid #F0F0F0;*/
} ...
```

Example 62–3 HTTP Request Sent By Pagelet Producer

```
URL: http://xmlns.oracle.com/includes/js/ajax.js
METHOD: GET
HEADERS:
  CSP-Ensemble-REST-API: http://example.com:7001/pagelets
  X-Client-IP: example.com
  User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US) AppleWebKit/534.16
(KHTML, like Gecko) Chrome/10.0.648.205 Safari/534.16
  CSP-Session-Username: weblogic
  Accept-Language: en-US,en;q=0.8,ru;q=0.6,it;q=0.4
  CSP-Gateway-Type: Proxy
  PT-Proxy-Passes: 1
  If-Modified-Since: Thu, 25 Aug 2012 07:00:06 GMT
  CSP-Protocol-Version: 1.4
  Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.3
  Accept-Encoding: gzip,deflate,sdch
  Referer: http://example.com:7001/pagelets/bidwiki/dashboard.action
  If-None-Match: W/"736-1124953206000"
  Accept: */*
  CSP-Aggregation-Mode: Single
  PT-Proxy-instance0: {DECBB085-D891-72CF-2B75-005E7FE20000}
  CSP-Gateway-Specific-Config: PT-User-Name=weblogic,PT-Guest-User=0,...
```

Example 62–4 HTTP Response Received By Pagelet Producer

```
Original URI: http://xmlns.oracle.com/styles/main-action.css
Effective URI: http://xmlns.oracle.com/styles/main-action.css
Status Code: 200
Reason: OK
Version: HTTP/1.1
HEADERS:
  Content-Type: text/css;charset=UTF-8
  Content-Length: 29178
  Server: Apache-Coyote/1.1
  Date: Thu, 19 May 2011 01:39:14 GMT
TRAILERS:
BODY:
```

```
body, p, td, table, tr, .bodytext, .stepfield {
  font-family: Verdana, arial, sans-serif;
  font-size: 11px;
  line-height: 16px;
  color: #000000;
  font-weight: normal;
}
```

62.6.3.2 Viewing Transformation Content

To view the content proxied by Pagelet Producer before and after transformation, set the **Transform** component on the Logging Settings page to **Finest**. The purpose of these traces is to log response content at different stages of transformation, allowing you to compare them and view the result of different transformers. The example traces in Example 62–5 and Example 62–6 were captured from a test environment.

Example 62–5 Untransformed Markup

```
Original request: URL:
http://example.com:7001/pagelets/bidwiki/styles/main-action.css
METHOD: GET
SESSION ID:
GdYGNJzMhxy1CJBMVTX8xTNq32GmLXYNY9VqFBcdprFnhcyQtzdp!1377086614!1305769149498
HEADERS:
  Host: example.com:7001
  Connection: keep-alive
  Referer: http://example.com:7001/pagelets/bidwiki/dashboard.action
  User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US) AppleWebKit/534.16
(KHTML, like Gecko) Chrome/10.0.648.205 Safari/534.16
  Accept: text/css,*/*;q=0.1
  Accept-Encoding: gzip,deflate,sdch
  Accept-Language: en-US,en;q=0.8,ru;q=0.6,it;q=0.4
  Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.3
COOKIES:
  JSESSIONID: GdYGNJzMhxy1CJBMVTX8xTNq32GmLXYNY9VqFBcdprFnhcyQtzdp!1377086614

Untransformed content:
body, p, td, table, tr, .bodytext, .stepfield {
  font-family: Verdana, arial, sans-serif;
  font-size: 11px;
  line-height: 16px;
  color: #000000;
  font-weight: normal;
}
```

Example 62–6 Transformed Markup (Transformed by Transformer Class)

```
Transformed by: class com.plumtree.server.impl.portlet.transformers.CSSTurboParser
  Original request: URL:
http://example.com:7001/pagelets/bidwiki/styles/main-action.css
METHOD: GET
SESSION ID:
GdYGNJzMhxy1CJBMVTX8xTNq32GmLXYNY9VqFBcdprFnhcyQtzdp!1377086614!1305769149498
HEADERS:
  Host: 10.148.118.211:7001
  Connection: keep-alive
  Referer: http://example.com:7001/pagelets/bidwiki/dashboard.action
  User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US) AppleWebKit/534.16
(KHTML, like Gecko) Chrome/10.0.648.205 Safari/534.16
  Accept: text/css,*/*;q=0.1
  Accept-Encoding: gzip,deflate,sdch
  Accept-Language: en-US,en;q=0.8,ru;q=0.6,it;q=0.4
  Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.3
COOKIES:
  JSESSIONID: GdYGNJzMhxy1CJBMVTX8xTNq32GmLXYNY9VqFBcdprFnhcyQtzdp!1377086614

Transformed content:
body, p, td, table, tr, .bodytext, .stepfield {
  font-family: Verdana, arial, sans-serif;
  font-size: 11px;
  line-height: 16px;
  color: #000000;
  font-weight: normal;
}
```

62.7 Using Pagelets in Web Applications

This section describes how to add pagelets to a JSF page in JDeveloper, to a Web page, and to a portal page. Before you can add a pagelet to any Web application, you must deploy and configure the resource and pagelet in Pagelet Producer as described in the "Deploying Portals, Templates, Assets, and Extensions" chapter in *Administering Oracle WebCenter Portal*.

This section includes the following subsections:

- Section 62.7.1, "Adding a Pagelet to a JSF Page in Oracle JDeveloper"
- Section 62.7.2, "Adding a Pagelet to a Web Page"
- Section 62.7.3, "Adding a Pagelet to a Portal Page"

62.7.1 Adding a Pagelet to a JSF Page in Oracle JDeveloper

Oracle JDeveloper allows you to drag and drop pagelets onto a JSF page. In this section, you will register Pagelet Producer with your Framework application, add a pagelet to a JSF page, and view the page in a browser to test the pagelet.

This section includes the following subsections:

- Section 62.7.1.1, "Registering Pagelet Producer with a Framework Application"
- Section 62.7.1.2, "Adding a Pagelet to a JSF Page"
- Section 62.7.1.3, "Securing a Pagelet"

62.7.1.1 Registering Pagelet Producer with a Framework Application

Before you can add a pagelet to a JSF page, you must register Pagelet Producer with your application. You can register a Pagelet Producer in two ways:

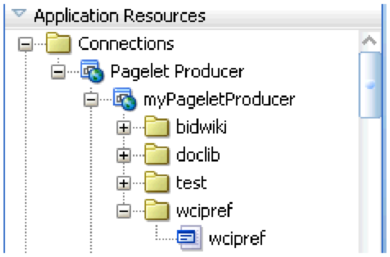
- Register a producer with a specific application. By default, the IDE Connection option is selected in the New Pagelet Producer dialog that creates the connection under the Application Resources panel.
- Register a producer using the Resource Palette. This option enables you to use the producer's pagelets in multiple applications. A pagelet that is available in the Resource Palette can be added to any of your Portal Framework applications by dropping it on the page. When you add a pagelet from the Resource Palette, its producer gets registered with the application if that producer is not already registered with the application. You can drag and drop a whole producer connection from the Resource Palette into the Application Resources panel of the Application Navigator. This registers the producer with the application.

Alternatively, you can right-click a producer in the Resource Palette and choose **Add to Application** from the context menu to register the producer with the currently open application

To register a Pagelet Producer through Oracle JDeveloper:

1. In the Application Resources panel of the Application Navigator, right-click **Connections,** choose **New Connection** and then choose **Pagelet Producer.**
2. In the **Name** field of the New Pagelet Producer dialog, enter a meaningful name for your producer. For example, `myPageletProducer`.
3. In the **URL** field, enter the URL of your Pagelet Producer in the format: `http://`*`hostname`*`:`*`portnumber`*`/pagelets`.
4. Click **OK**. In the Application Resources panel, Pagelet Producer is created under the Pagelet Producer directory in the Connections directory, as shown in Figure 62–28.

Figure 62–28 Pagelet Producer in the Application Resources Panel



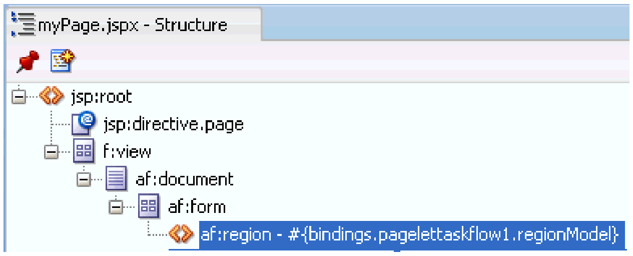
Application Resources
- Connections
  - Pagelet Producer
    - myPageletProducer
      - bidwiki
      - doclib
      - test
      - wcipref
        - wcipref

62.7.1.2 Adding a Pagelet to a JSF Page

To add a pagelet to a page:

1. In JDeveloper, open your JSF page in Design View, if it is not open already.
2. Go to the Application Resources panel or the IDE Resources panel in the Resource Palette. Under **Pagelet Producer**, expand your producer to display its contents.
3. From the producer's contents, drop a pagelet onto the JSF page.
4. In the **Add Pagelet to Page** dialog, choose **Yes** in the Use IFrame section if you would like to enable IFRAME for this pagelet.
5. In the **IFrame Height** field, specify the required height in pixels or leave it blank. You can also specify the height as "auto" to use automatic resizing. (To use this option, you must add the IFrame resizing page to the project. For details, see Section 62.7.2.3, "Using Automatic Resizing with IFrames.") Click **OK**.
6. In the **Edit Task Flow Binding** dialog input parameters are specified by default. Change any parameters, if required, and then click **OK**.
7. Save the page. In the Structure window, the page looks like Figure 62–29.

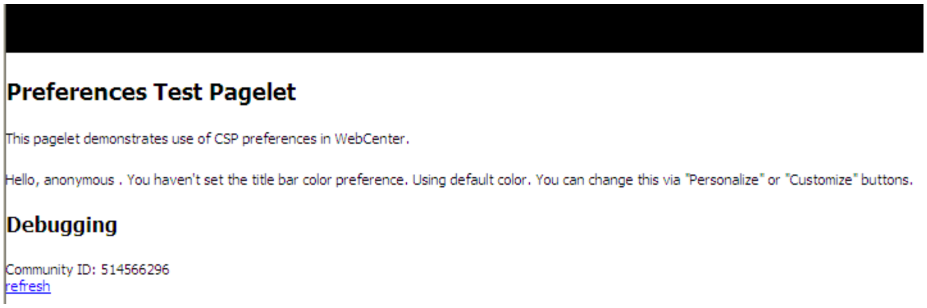
Figure 62–29 Pagelet in the Structure Window



8. In the Application Navigator, right-click your JSF page under Projects, and choose **Run**.

9. If presented with a login page, enter user name and password so you can view the pagelet. Figure 62–30 shows a sample pagelet in a browser window.

Figure 62–30 Sample Pagelet



Preferences Test Pagelet

This pagelet demonstrates use of CSP preferences in WebCenter.

Hello, anonymous . You haven't set the title bar color preference. Using default color. You can change this via "Personalize" or "Customize" buttons.

Debugging

Community ID: 514566296
refresh

62.7.1.3 Securing a Pagelet

For information about securing pagelets, see the "Configuring Oracle Single Sign-On (OSSO)" section in *Administering Oracle WebCenter Portal*.

62.7.2 Adding a Pagelet to a Web Page

Once you have deployed a pagelet, you can insert it into a proxied or non-proxied page using JavaScript or REST.

This section includes the following subsections:

- Section 62.7.2.1, "Inserting Pagelets Using Javascript": Pagelet Producer allows you to insert pagelets into non-proxied pages using a simple JavaScript function.
- Section 62.7.2.2, "Accessing Pagelets Using REST": Pagelet Producer REST APIs allow remote Web services to retrieve information about resources and pagelets from Pagelet Producer, and inject pagelets into proxied and non-proxied pages.
- Section 62.7.2.3, "Using Automatic Resizing with IFrames": The pagelet inject function can automatically resize the IFrame that encapsulates pagelet content.

62.7.2.1 Inserting Pagelets Using Javascript

You can insert pagelets into non-proxied pages using a simple JavaScript function.

To activate this feature, add the following HTML snippet in the <HEAD> section of the page.

```
<script type="text/javascript" src="http://proxy:port/pagelets/inject/v2/csapi">
</script>
```

This script injects all CSAPI and pagelet inject functions into the page to display the pagelet. One of the sections injected is the following function:

```
function injectpagelet(library, name, iframe_options, params, context_id, element_
id,  is_in_community, chrome, forward_params)
{
    ...
}
```

This function injects a pagelet as a widget into the parent page. The method interface uses the following parameters:

- **library**: Required. A string representing the library name of the pagelet to inject. Accepts Unicode letters and numbers only; no spaces.
- **name**: Required. A string representing the name of the pagelet to inject. Accepts Unicode letters and numbers only; no spaces.
- **iframe_options**: Specifies whether to use IFRAME around the pagelet content. Sample IFRAME options: `iframe width=100% height=auto frameborder=0`. If omitted or left blank, the pagelet content is rendered inline.
- **params**: The pagelet parameters in query string format. For example, `'param1=value1&param2=value2&param3=value3'`.
- **context_id**: The external identifier of the pagelet instance, used to scope preferences on the Pagelet Producer server. Must be an integer.
- **element_id**: The HTML element ID in which the pagelet content is injected. If omitted or left blank, the pagelet content is injected using `document.write()` when the `injectpagelet` call is evaluated.
- **is_in_community**: Specifies whether this pagelet is on a community or group page. If the value is set to `true`, it sends the `context_id` in the community ID header to the pagelet. Defaults to `false`.
- **chrome**: Specifies the name of the chrome template to use for WSRP/JPDK pagelets. To suppress chrome, use a value of `none`.
- **forward_params**: Specifies whether to forward query string arguments from the consuming page to the back-end server. To suppress this functionality, use a value of `false`.

> **Note:** These arguments are positional; they must be provided in the given order. If you do not want to specify a particular argument, but do want to specify an argument that follows it, you must pass in an empty value ('') for the former. All arguments are optional except for library and name.

The script also creates a new `<div>` with a unique name that includes a reference to the `injectpagelet` function. Several examples are shown below:

```
<div>
    <script type="text/javascript">
        injectpagelet('library', 'name');
    </script>
</div>
<div>
    <script type="text/javascript">
    injectpagelet('library', 'name', 'iframe', 'payload',
'param1=value1&param2=value2&param3=value3');
    </script>
```

```
</div>

<div>
    <script type="text/javascript">
    injectpagelet('library', 'name', 'iframe width=100% height=200', 'payload');
    </script>
</div>
```

62.7.2.1.1 Adding a Preference Editor Using Javascript

The `injecteditor` function lets you add preference editors that enable users to set personal and shared preferences for pagelets that support this capability. This functionality is analogous to personalization and customization functionality in WebCenter Portal.

```
injecteditor(library, name, type, iframe_options, context_id, element_id, is_in_
community, chrome)
```

where:

- **library**: Required. The library name of the pagelet to inject. Accepts Unicode letters and numbers only; no spaces.
- **name**: Required. The name of the pagelet to inject. Accepts Unicode letters and numbers only; no spaces.
- **type**: The editor type. This argument supports these values: 'admin', 'pagelet', 'community'. In case of the 'community' argument, `context_id` is sent to pagelet in the community ID CSP header.
- **iframe_options**: Specifies whether to use IFRAME around the pagelet editor content. Sample IFRAME options: `iframe width=100% height=auto frameborder=0`. If omitted or left blank, the editor content is rendered inline.
- **context_id**: The external identifier of the pagelet instance, used to scope preferences on the Pagelet Producer server. Must be an integer.
- **element_id**: The HTML element ID in which the pagelet content is injected. If omitted or left blank, the pagelet content is injected using `document.write()` when the `injecteditor` call is evaluated.
- **is_in_community**: Specifies whether this pagelet is on a community or group page. If the value is set to `true`, it sends the `context_id` in the community ID header to the pagelet. Defaults to `false`.
- **chrome**: Specifies the name of the chrome template to use for WSRP/JPDK pagelets. To suppress chrome, use a value of `none`.

Note: These arguments are positional; they must be provided in the given order. If you do not want to specify a particular argument, but do want to specify an argument that follows it, you must pass in an empty value ('') for the former. All arguments are optional except for library and name.

62.7.2.2 Accessing Pagelets Using REST

REST stands for Representational State Transfer and is a simple way of providing APIs over HTTP. The basic principles of REST are:

- API URLs point to the resource rather than a generic method endpoint.
- Requests use standard HTTP verbs for simplified CRUD methods. This is a read-only API and allows GET requests only.

- Every request returns a full representation of the object retrieved (pagelet or resource).

Pagelet Producer REST APIs provide the following functionality:

- Inject pagelets into non-proxied pages, allowing Pagelet Producer to act as a portlet provider for Oracle WebCenter Interaction, Oracle WebLogic Portal, or other third-party portals. For details, see Section 62.7.2.2.1, "Pagelet Inject API."
- Allow remote Web services to retrieve information about resources and pagelets from Pagelet Producer. For details, see Section 62.7.2.2.2, "Data Retrieval APIs."

62.7.2.2.1 Pagelet Inject API The pagelet inject URL can be used in portals to specify the location of a remote portlet (this is how a pagelet can be used as a portlet). The inject URL can also be used as the source attribute of an IFrame tag in any HTML page.

The URL must use the following format:

```
http://host:port/pagelets/inject/v2/pagelet/libraryname/pageletname?conten
t-type=html
```

where `libraryname` and `pageletname` refer to the library and pagelet configured in Pagelet Producer.

> **Note:** When using the pagelet inject API as the URL for a Portlet Web Service in Oracle WebCenter Interaction, you must switch "pagelet" to "portlet" in the URL. For example, the above URL would become:
>
> ```
> http://host:port/pagelets/inject/v2/portlet/libraryname/page
> letname?content-type=html
> ```

The query string arguments to the above call define how the pagelet is to be returned. The following parameters are defined:

- **instanceid:** Optional. The instance ID of the pagelet, used to uniquely identify the pagelet on the page to facilitate inter-pagelet communication. Must be unique to the page.
- **context**: Optional. The external identifier of the pagelet instance, used for scoping preferences on the Pagelet Producer server. Must be an integer.
- **content-type**: The return type. Three types are supported:
  - **javascript**: Returns injectable code.
  - **html**: Returns the pagelet markup with its associated PTPortlet object.
  - **iframe**: Returns an IFrame that points back to the inject api, filling the IFrame with the pagelet content, instead of directly inline with the page. The IFrame can be styled by providing a set of query string parameters.

Parameter	Description	Default
ifwidth	Sets the width of the IFrame; can be specified in percent '%' or pixels 'px', for example: ifwidth=500px. Can be set to 'auto' to automatically resize the IFrame to fit the content within. For details, see Section 62.7.2.3, "Using Automatic Resizing with IFrames".	100%

Parameter	Description	Default
ifheight	Sets the height of the IFrame; can be specified in percent '%' or pixels 'px', for example: ifheight=500px. Can be set to 'auto' to automatically resize the IFrame to fit the content within. For details, see Section 62.7.2.3, "Using Automatic Resizing with IFrames".	No default
ifborder	Sets the border of the IFrame.	'none'
ifalign	Sets the align rule within the IFrame, for example: ifalign=center.	No default
ifdesc	Sets the description of the IFrame.	No default
ifmarginheight	Sets the margin height; can be specified in percent '%' or pixels 'px', for example: ifmarginheight=500px.	No default
ifmarginwidth	Sets the margin width; can be specified in percent '%' or pixels 'px', for example: ifmarginwidth=500px.	No default
ifscrolling	Sets the scrollbars of the IFrame. Accepted values: yes/no/auto.	auto
ifstyle	Sets the CSS style of the IFrame	No default
ifclass	Sets the CSS class of the IFrame.	No default

- **csapi:** Optional. Sets whether the CSAPI will be included with the pagelet response (true or false). Including the CSAPI is optional, but the pagelet included in the response relies on the CSAPI libraries being present on the page where the pagelet is to be rendered. If csapi=false, then the CSAPI libraries must be included with the parent page (usually in the HEAD section).
- **onhtttperror:** Optional. When a pagelet request results in a 403, 404 or any other error code, Pagelet Producer can forward the error code and the error page itself to the browser for display to the user. The onhttperror parameter accepts the following values:
  - **comment** (default): Pagelet Producer will create an HTML comment in place of the failing pagelet (the failing pagelet will simply not be displayed).
  - **inline**: The pagelet error along with the server error page will be displayed inline where the pagelet would normally be shown on the page.
  - **fullpage**: The http error will consume the whole page. This mode is only available if Pagelet Producer controls the parent page.
- **inline-refresh:** Optional. Valid values are `true` or `false (default)`. If the `inline-refresh` option is set to `true`, Pagelet Producer does not use an iFrame to embed pagelet markup onto the page. When the user interacts with the pagelet, markup updates are done inline, hence the term 'inline-refresh'. To achieve this, Pagelet Producer re-writes the URLs in the pagelet markup to use a JavaScript method call instead. That is, when the user clicks on a link or submits a form request to the backend, it's done by JavaScript on the browser and then the response is dynamically injected.

  The `inline-refresh` option works well for relatively simple HTML markup. If the pagelet exposes a very rich UI, such as an ADF task flow, `inline-refresh` may not work well or may simply break. Consequently, the `inline-refresh` option is set to `false` by default (that is, inject pagelet markup in an iFrame).

The following example URL points to the linkspagelet in the samples library:

`http://*host:port*/pagelets/inject/v2/pagelet/samples/linkspagelet?content-type=iframe&csapi=true&ifheight=123px&ifclass=myclass`

This URL should result in markup similar to the code below.

> **Note:** The IFrame source points back to the inject API, but this time the content-type parameter is set to `html`. This feature adds an additional step in the pagelet retrieval. The `csapi` parameter is set to `true` on the subsequent call to get the IFrame contents so that the required CSAPI content is included in the IFrame (if this was not the case, JavaScript resolve errors would be returned because the pagelet code cannot access any CSAPI script included outside the IFrame).

```
<html>
 <head>
 </head>
 <body>
  <iframe frameborder="none" class="myclass" width="100%" height="123px"
scrolling="auto"
src="http://proxy:port/inject/v2/pagelet/samples/linkspagelet?asdg=asdfgas&param=t
rue&content-type=html&jswrap=false&csapi=true">
   <html>
    <head>
     <script
src="http://proxy:loginserverport/loginserver/ensemblestatic/imageserver/plumtree/
common/private/js/jsutil/LATEST/PTUtil.js" type="text/javascript"> </script>
     <script
src="http://proxy:loginserverport/loginserver/ensemblestatic/imageserver/plumtree/
common/private/js/jsutil/LATEST/PTDateFormats.js" type="text/javascript"></script>
     <script
src="http://proxy:loginserverport/loginserver/ensemblestatic/imageserver/plumtree/
common/private/js/jsxml/LATEST/PTXML.js" type="text/javascript"></script>
     <script
src="http://proxy:loginserverport/loginserver/ensemblestatic/imageserver/plumtree/
common/private/js/jsportlet/LATEST/PTPortletServices.js"
type="text/javascript"></script>
    </head>

    <body>
     <div id="pt-pagelet-content-1" class="pagelet-container" style="display:
inline;">
      <span xmlns:pt="http://www.xmlns.oracle.com/xmlschemas/ptui/">
      Pagelet links:
      <br/>
      <a href="http://proxy:port/inject/RP_PID393219_I1/headpagelet1.html">The
first pagelet</a>
      <br/>
      <a href="http://proxy:port/inject/RP_PID393219_I1/headpagelet2.html">The
second pagelet</a>
      <br/>
      <a href="http://proxy:port/inject/RP_PID393219_I1/csapipagelet.html">The
csapi pagelet</a>
      <br/>
      <a href="http://proxy:port/inject/RP_PID393219_I1/linkspagelet.html">This
pagelet</a>
      <br/>
      </span>
      </div>
    </body>
   </html>
  </iframe>
 </body>
</html>
```

62.7.2.2.2 Data Retrieval APIs Two REST APIs are available to retrieve data from Pagelet Producer:

- **Pagelet API**: Allows remote applications to retrieve pagelet data from Pagelet Producer. (See Example 62–7, "All Pagelets" and Example 62–8, "Pagelets By Library and Name".)
- **Resource API**: Allows remote applications to retrieve resource data from Pagelet Producer. (See Example 62–9, "All Resources" and Example 62–10, "Resource By Name".)

The base URL for all requests is `http://`*`host:port`*`/pagelets/restservice/pageletproducer/`.

Example 62–7 All Pagelets

```
http://host:port/pagelets/restservice/pageletproducer/pagelets/
http://host:port/pagelets/restservice/pageletproducer/pagelets/?format=xml
```

Example 62–8 Pagelets By Library and Name

```
http://host:port/pagelets/restservice/pageletproducer/pagelet/libraryname/pageletn
ame/
http://host:port/pagelets/restservice/pageletproducer/pagelet/libraryname/pageletn
ame/?format=xml
```

Example 62–9 All Resources

```
http://host:port/pagelets/restservice/pageletproducer/resources/
http://host:port/pagelets/restservice/pageletproducer/resources/
```

Example 62–10 Resource By Name

```
http://host:port/pagelets/restservice/pageletproducer/resource/name
http://host:port/pagelets/restservice/pageletproducer/resource/name/?format=xml
```

62.7.2.3 Using Automatic Resizing with IFrames

The Pagelet Producer pagelet inject API can automatically resize the IFrame that encapsulates pagelet content. The resizing is done so that the IFrame stretches to fit the content within. To use this feature, the `ifwidth` and `ifheight` parameters must be set to 'auto' as shown in the example below:

```
http://proxy:port/inject/v2/pagelet/samples/linkspagelet?content-type=iframe&csapi
=true&ifheight=auto&ifwidth=auto&ifclass=myclass
```

In addition, this feature relies on an external page on the same domain as the consumer page. This page is included into the pagelet IFrame as an internal hidden IFrame. This page collects the sizing information and passes it on to the parent consumer page. This page must be deployed in the same directory as the consumer page.

The example below resizes the pagelet IFrame after it finishes loading. To add dynamic auto-resizing capabilities to user interaction activities after the initial load, simply add more event listeners for mouse and keyboard events.

```
<html>
  <head>
    <title>Resizing Page</title>
    <script type="text/javascript">
  function onLoad() {
    var params = window.location.search.substring( 1 ).split( '&' );
    var height;
    var width;
    var iframe;

    for( var i = 0, l = params.length; i < l; ++i ) {
      var parts = params[i].split( '=' );
      switch( parts[0] ) {
        case 'height':
          height = parseInt( parts[1] );
          break;
        case 'width':
          width = parseInt( parts[1] );
          break;
        case 'iframe':
          iframe = parts[1];
          break;
      }
    }
  window.top.updateIFrame( iframe, height, width );
  }

  if (window.addEventListener) {
    window.addEventListener("load", onLoad, false)
  } else if (window.attachEvent) {
     window.detachEvent("onload", onLoad)
     window.attachEvent("onload", onLoad)
  } else {
    window.onload=onLoad
  }
  </script>
 </head>
<body>
</body>
</html>
```

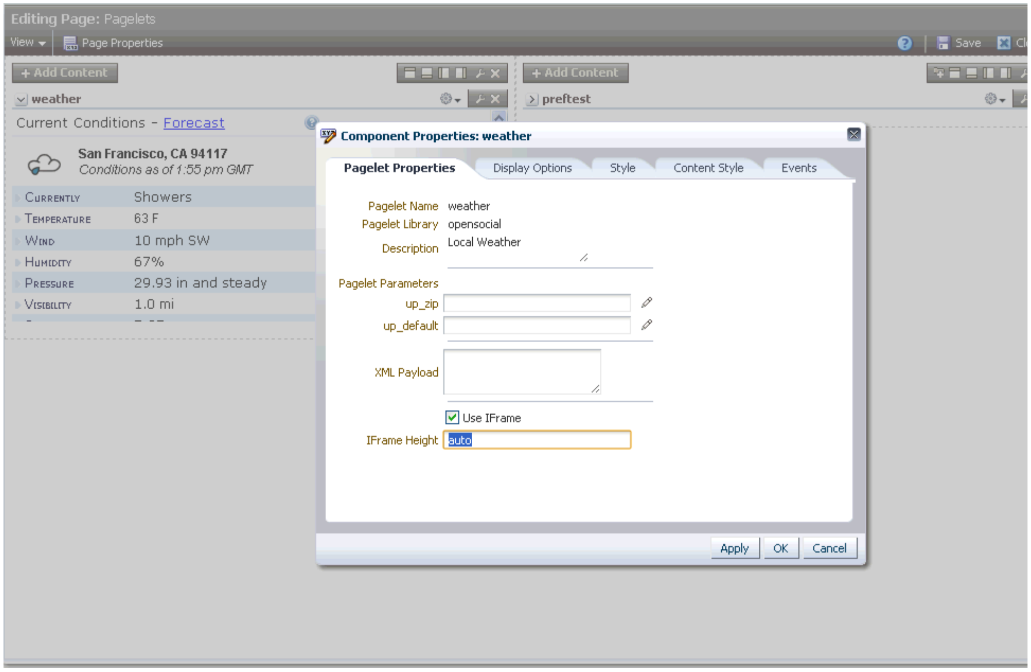
62.7.3 Adding a Pagelet to a Portal Page

Use Composer to add a pagelet to a portal page. By default, pagelets appear in the Mash-Ups folder in the Resource Catalog. To add a pagelet to a page, navigate to the pagelet in the Resource Catalog and select it.

For detailed information about how to add resources to pages in a portal, see the "Working with Resource Catalog Components on a Page" section in *Using Oracle WebCenter Portal*.

To configure a pagelet within a page, view the page in Edit mode and click the **Edit** icon (wrench) for the pagelet. The Pagelet Properties tab in the Component Properties dialog allows you to define pagelet parameters and IFrame options.

Figure 62–31 Component Properties Dialog: Pagelet Properties



San Francisco, CA 94117
Conditions as of 1:55 pm GMT

Currently	Showers
Temperature	63 F
Wind	10 mph SW
Humidity	67%
Pressure	29.93 in and steady
Visibility	1.0 mi

Pagelet Name: weather
Pagelet Library: opensocial
Description: Local Weather
Pagelet Parameters
up_zip:
up_default:
XML Payload:
☑ Use IFrame
IFrame Height: auto

62.8 Examples and Advanced Topics

This section contains several examples and advanced topics:

- Section 62.8.1, "Creating a Simple Pagelet (an Example)"
- Section 62.8.2, "Consuming a Pagelet in WebCenter Portal (an Example)"
- Section 62.8.3, "Consuming a Pagelet in WebCenter Interaction (an Example)"
- Section 62.8.4, "Consuming a Pagelet in Oracle WebCenter Sites (an Example)"
- Section 62.8.5, "Consuming WSRP Portlets as Pagelets"
- Section 62.8.6, "Consuming WebCenter Portal Services as Pagelets in Sites"
- Section 62.8.7, "Consuming Applications as Pagelets Using EBS11i"
- Section 62.8.8, "Consuming OpenSocial Gadgets Using Pagelet Producer"
- Section 62.8.9, "Manipulating HTML Markup"
- Section 62.8.10, "Advanced URL Rewriting"

62.8.1 Creating a Simple Pagelet (an Example)

This section will give you a basic feel of how you can use Pagelet Producer to proxy a Web page. We will proxy a simple static "Hello World" Web page, cut one section out of that page, and present it as a pagelet that you can later insert in WebCenter Portal, WebCenter Interaction, on your own application page.

This section includes the following subsections:

- Section 62.8.1.1, "Configuring the Initial Pagelet Producer Setup"
- Section 62.8.1.2, "Creating a Resource"
- Section 62.8.1.3, "Creating a Pagelet"

- Section 62.8.1.4, "Clipping the Pagelet"

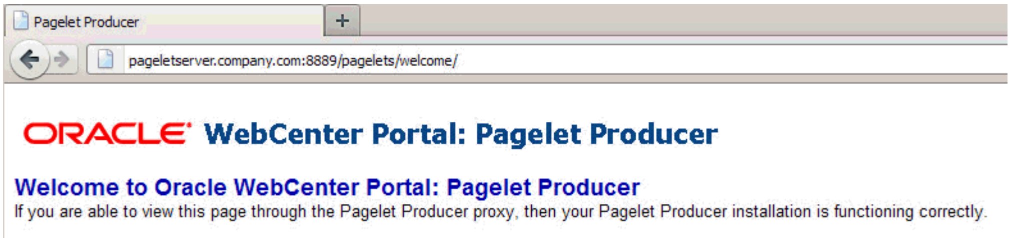
62.8.1.1 Configuring the Initial Pagelet Producer Setup

For this example, let's assume that the Pagelet Producer server is running on `http://pageletserver.company.com:8889/pagelets/`.

1. First, let's check that Pagelet Producer is up and running.

   To do that we just need to access its URL (`http://pageletserver.company.com:8889/pagelets/`). Figure 62–32 shows what should be returned:

Figure 62–32 Pagelet Producer Welcome Page



WebCenter Portal: Pagelet Producer

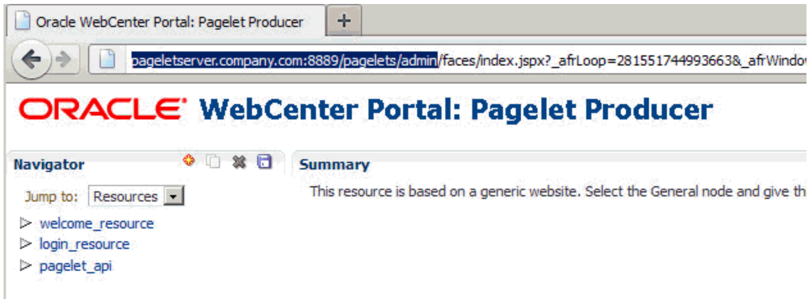
Welcome to Oracle WebCenter Portal: Pagelet Producer

If you are able to view this page through the Pagelet Producer proxy, then your Pagelet Producer installation is functioning correctly.

2. Access the Pagelet Producer administration screens using this URL:

   `http://pageletserver.company.com:8889/pagelets/admin`

Figure 62–33 Pagelet Producer Administration Screen


Oracle WebCenter Portal: Pagelet Producer
pageletserver.company.com:8889/pagelets/admin/faces/index.jspx?_afrLoop=281551744993663&_afrWindo
ORACLE
WebCenter Portal: Pagelet Producer
Navigator
Jump to: Resources
welcome_resource
login_resource
pagelet_api
Summary

This resource is based on a generic website. Select the General node and give th

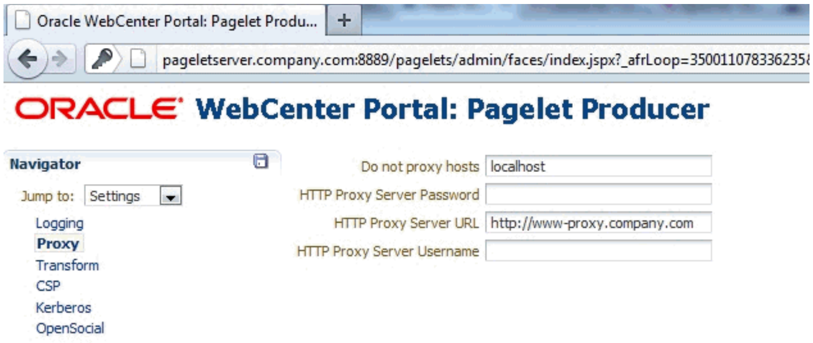
3. If you connect to the internet via a proxy server, you need to configure proxy in the Pagelet Producer settings:

   a. In the Navigator pane's **Jump To** drop down list, select **Settings**.

   b. Click **Proxy**.

   c. Enter your proxy server configuration as shown in Figure 62–34.

Figure 62–34 Pagelet Producer Proxy Settings


Oracle WebCenter Portal: Pagelet Produ...
pageletserver.company.com:8889/pagelets/admin/faces/index.jspx?_afrLoop=35001107833623
ORACLE WebCenter Portal: Pagelet Producer
Navigator
Logging
Proxy
Transform
CSP
Kerberos
OpenSocial

Jump to: Settings

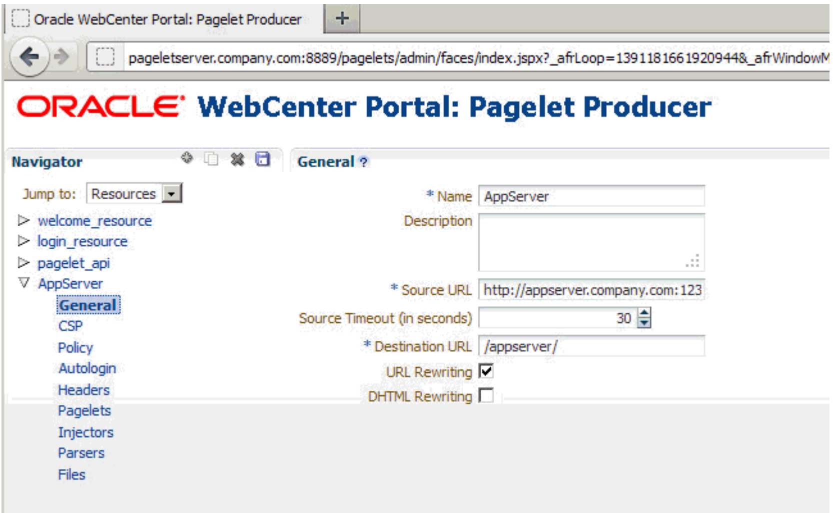
Do not proxy hosts: localhost
HTTP Proxy Server Password:
HTTP Proxy Server URL: http://www-proxy.company.com
HTTP Proxy Server Username:

62.8.1.2 Creating a Resource

The first thing that you need to do is to create a resource for your Web page. This will tell Pagelet Producer that all sub-paths of the Web page should be proxied. It also will allow you to set up common rules for how your Web page should be proxied and will serve as a container for your pagelets.

1. From the Navigator pane's **Jump To** drop down list select **Resources**.
2. Click any existing resource (for example, `welcome_resource`).
3. Click **Create selected type**.
4. From the Select Producer Type dialog, select **Web** and click **OK**.
5. After the resource is created, click the **General** node in the Navigation pane and specify the following values as shown in Figure 62–35:
   - **Name:** `AppServer`
   - **Source URL:** `http://appserver.company.com:1234/`
   - **Destination URL:** `/appserver/`

Figure 62–35 Pagelet Producer's General Settings Page


Oracle WebCenter Portal: Pagelet Producer
pageletserver.company.com:8889/pagelets/admin/faces/index.jspx?_afrLoop=1391181661920944&_afrWindowM
ORACLE WebCenter Portal: Pagelet Producer
Navigator
General ?
welcome_resource
login_resource
pagelet_api
AppServer
General
CSP
Policy
Autologin
Headers
Pagelets
Injectors
Parsers
Files

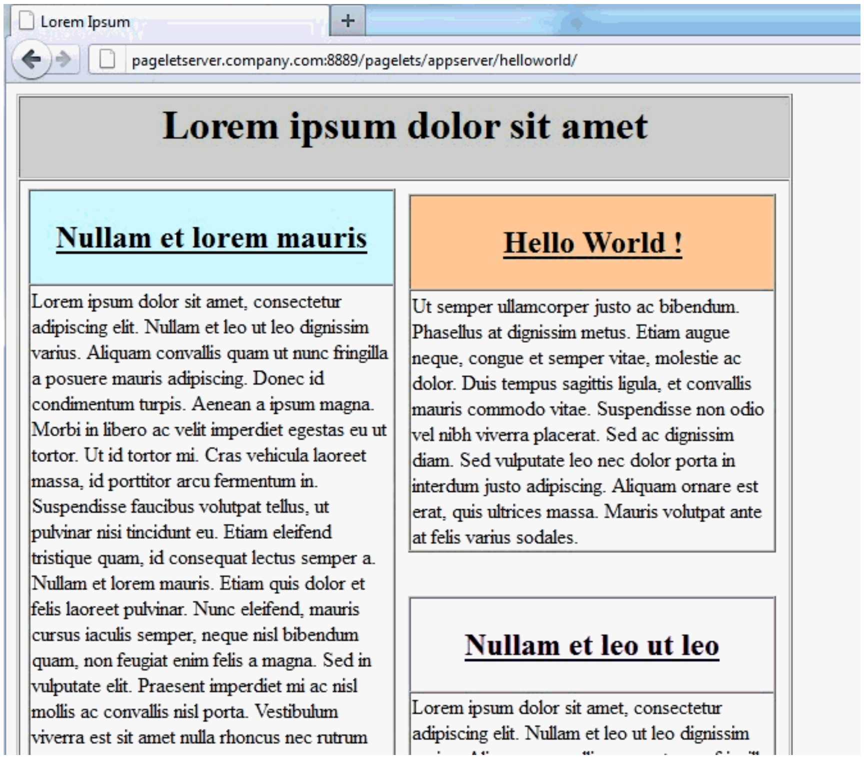
Jump to: Resources

* Name: AppServer
Description:
* Source URL: http://appserver.company.com:123
Source Timeout (in seconds): 30
* Destination URL: /appserver/
URL Rewriting ☑
DHTML Rewriting □

6. Click **Save**.

After the resource is created our Web page becomes accessible by the URL:
`http://pageletserver.company.com:8889/pagelets/appserver/helloworld/`

Figure 62–36 Hello World Pagelet


Lorem Ipsum
pageletserver.company.com:8889/pagelets/appserver/helloworld/

Lorem ipsum dolor sit amet

Nullam et lorem mauris

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nullam et leo ut leo dignissim varius. Aliquam convallis quam ut nunc fringilla a posuere mauris adipiscing. Donec id condimentum turpis. Aenean a ipsum magna. Morbi in libero ac velit imperdiet egestas eu ut tortor. Ut id tortor mi. Cras vehicula laoreet massa, id porttitor arcu fermentum in. Suspendisse faucibus volutpat tellus, ut pulvinar nisi tincidunt eu. Etiam eleifend tristique quam, id consequat lectus semper a. Nullam et lorem mauris. Etiam quis dolor et felis laoreet pulvinar. Nunc eleifend, mauris cursus iaculis semper, neque nisl bibendum quam, non feugiat enim felis a magna. Sed in vulputate elit. Praesent imperdiet mi ac nisl mollis ac convallis nisl porta. Vestibulum viverra est sit amet nulla rhoncus nec rutrum

Hello World !

Ut semper ullamcorper justo ac bibendum. Phasellus at dignissim metus. Etiam augue neque, congue et semper vitae, molestie ac dolor. Duis tempus sagittis ligula, et convallis mauris commodo vitae. Suspendisse non odio vel nibh viverra placerat. Sed ac dignissim diam. Sed vulputate leo nec dolor porta in interdum justo adipiscing. Aliquam ornare est erat, quis ultrices massa. Mauris volutpat ante at felis varius sodales.

Nullam et leo ut leo

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nullam et leo ut leo dignissim

The original Web page address Source URL has now been replaced with the Pagelet Producer URL (`http://pageletserver.company.com:8889/pagelets`) + `Destination URL`.

62.8.1.3 Creating a Pagelet

Let's continue by creating our "Hello World" pagelet.

1. Under the **Resource** node, open the **Pagelets** node.
2. Click **Create selected type**.
3. Click the **General** node of the newly created pagelet and specify the following values as shown in Figure 62–37:

   Name: `Hello_World`

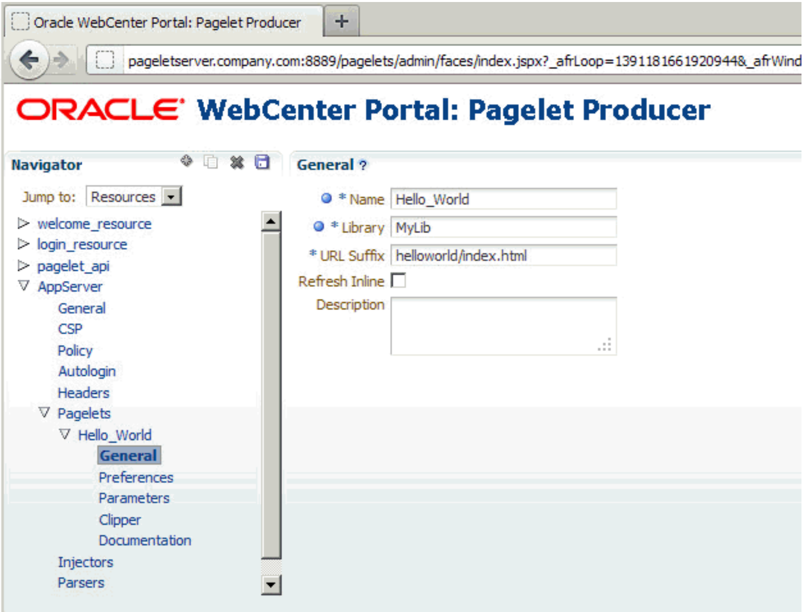
   Library: `MyLib`

   Library is used for logical grouping. The portals use the Library value to group pagelets in their respective UIs. For example, when adding pagelets to a WebCenter Portal portal you would see the individual pagelets listed under "Library".

   URL Suffix: `helloworld/index.html`

   The URL Suffix is where the Hello World page HTML is served from.

Figure 62–37 Pagelet Producer Settings for the Hello World Pagelet



* Name: Hello_World

* Library: MyLib

* URL Suffix: helloworld/index.html

Refresh Inline: ☐

Description:

4. Click **Save**.

The Library name can be anything you want, it doesn't have to match the resource name at all. It is used as a logical grouping of pagelets, and you can include pagelets from multiple resources into the same library or create a new library for each pagelet.

After you save the pagelet you can access it here:

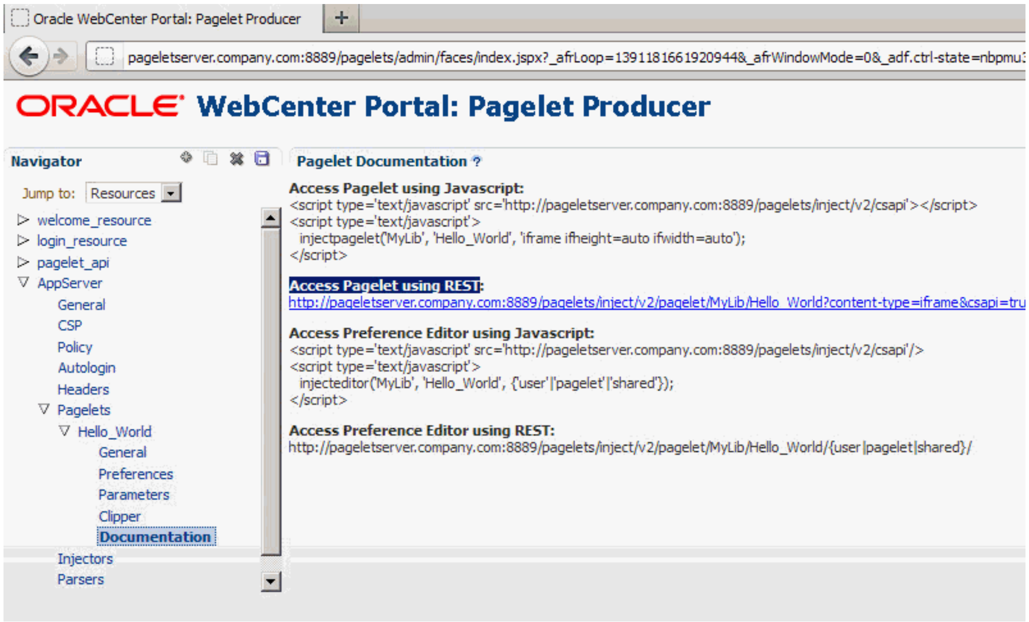
```
http://pageletserver.company.com:8889/pagelets/inject/v2/pagelet/MyLib/Hel
lo_World
```

which is:

```
http://pageletserver.company.com:8889/pagelets/inject/v2/pagelet/ +
[Library] + [Name]
```

Or to test the injection of a pagelet into iFrame you can click on the pagelet's **Documentation** node and use the **Access Pagelet using REST** URL.

Figure 62–38 Pagelet's Documentation Page



Access Pagelet using Javascript:

```
<script type='text/javascript' src='http://pageletserver.company.com:8889/pagelets/inject/v2/csapi'></script>
<script type='text/javascript'>
  injectpagelet('MyLib', 'Hello_World', 'iframe ifheight=auto ifwidth=auto');
</script>
```

Access Pagelet using REST:

http://pageletserver.company.com:8889/pagelets/inject/v2/pagelet/MyLib/Hello_World?content-type=iframe&csapi=tru

Access Preference Editor using Javascript:

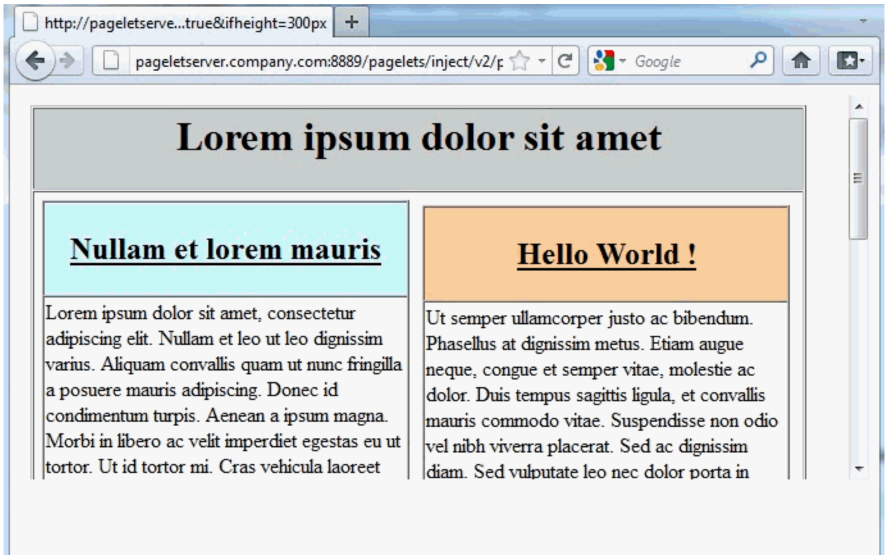
```
<script type='text/javascript' src='http://pageletserver.company.com:8889/pagelets/inject/v2/csapi'/>
<script type='text/javascript'>
  injecteditor('MyLib', 'Hello_World', {'user'|'pagelet'|'shared'});
</script>
```

Access Preference Editor using REST:

http://pageletserver.company.com:8889/pagelets/inject/v2/pagelet/MyLib/Hello_World/{user|pagelet|shared}/

If you click the URL on the Documentation page you should see the following:

Figure 62–39 Hello World Pagelet


http://pageletserve...true&ifheight=300px
pageletserver.company.com:8889/pagelets/inject/v2/p
Google

Lorem ipsum dolor sit amet

Nullam et lorem mauris

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nullam et leo ut leo dignissim varius. Aliquam convallis quam ut nunc fringilla a posuere mauris adipiscing. Donec id condimentum turpis. Aenean a ipsum magna. Morbi in libero ac velit imperdiet egestas eu ut tortor. Ut id tortor mi. Cras vehicula laoreet

Hello World !

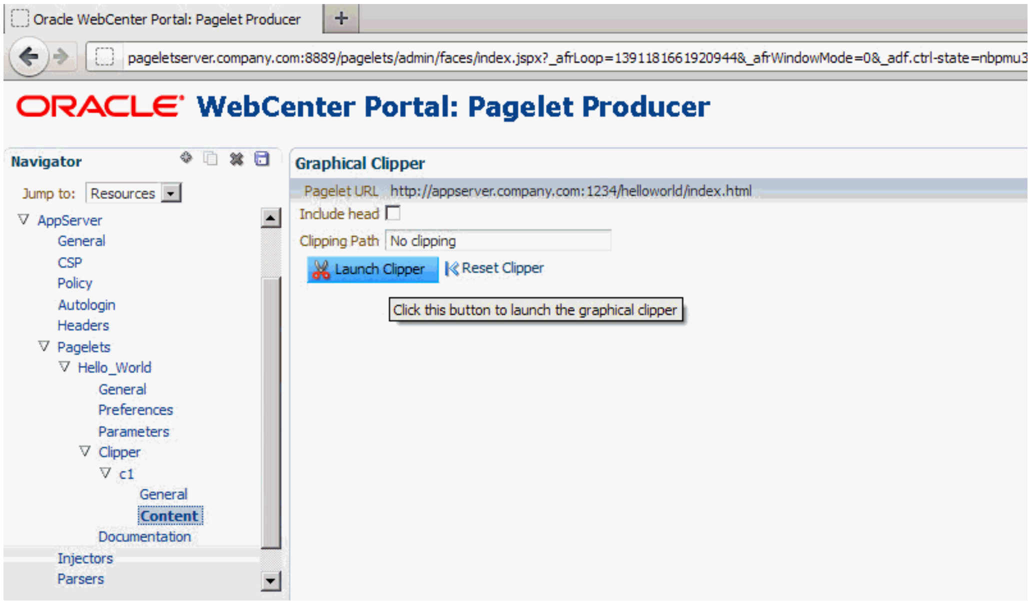
Ut semper ullamcorper justo ac bibendum. Phasellus at dignissim metus. Etiam augue neque, congue et semper vitae, molestie ac dolor. Duis tempus sagittis ligula, et convallis mauris commodo vitae. Suspendisse non odio vel nibh viverra placerat. Sed ac dignissim diam. Sed vulputate leo nec dolor porta in

62.8.1.4 Clipping the Pagelet

The pagelet that we just created would cover the whole Web page. Since we only want the "Hello World" segment of it we'll need to clip it as described in the following steps:

1. Under the **Hello_World** pagelet node, click **Clipper**.
2. Click **Create selected type**.
3. Specify a Name for the newly created clipper (for example: `c1`).
4. Click the clipper's **Content** node and click **Launch Clipper**.

Figure 62–40 Pagelet Producer Clipper


Oracle WebCenter Portal: Pagelet Producer
pageletserver.company.com:8889/pagelets/admin/faces/index.jspx?_afrLoop=1391181661920944&_afrWindowMode=0&_adf.ctrl-state=nbpmu3
ORACLE WebCenter Portal: Pagelet Producer
Navigator
Jump to: Resources
AppServer
General
CSP
Policy
Autologin
Headers
Pagelets
Hello_World
General
Preferences
Parameters
Clipper
c1
General
Content
Documentation
Injectors
Parsers
Graphical Clipper
Launch Clipper
Reset Clipper
Click this button to launch the graphical clipper

Pagelet URL http://appserver.company.com:1234/helloworld/index.html

Include head □

Clipping Path No clipping

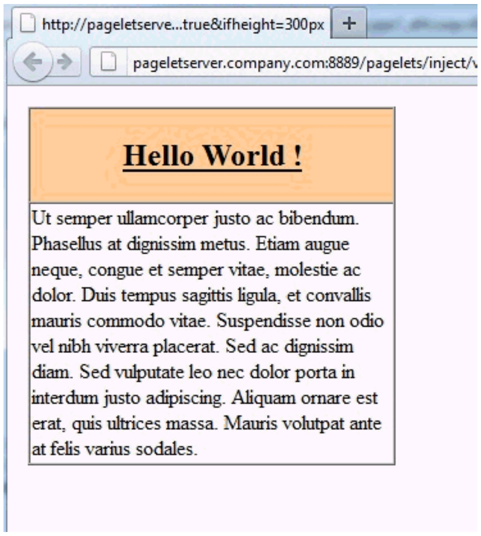
5. In the browser window, use the mouse to select the area you want to clip.

   When you click the mouse button the browser window disappears and a Clipping Path is automatically generated.

6. Save the clipped pagelet and access the link from the Documentation page again.

7. Our pagelet is now nicely clipped and ready to be used in a WebCenter Portal portal as shown in Figure 62–41:

Figure 62–41 Clipped Hello World Pagelet


http://pageletserve...true&ifheight=300px
pageletserver.company.com:8889/pagelets/inject/v
Hello World !

Ut semper ullamcorper justo ac bibendum. Phasellus at dignissim metus. Etiam augue neque, congue et semper vitae, molestie ac dolor. Duis tempus sagittis ligula, et convallis mauris commodo vitae. Suspendisse non odio vel nibh viverra placerat. Sed ac dignissim diam. Sed vulputate leo nec dolor porta in interdum justo adipiscing. Aliquam ornare est erat, quis ultrices massa. Mauris volutpat ante at felis varius sodales.

62.8.2 Consuming a Pagelet in WebCenter Portal (an Example)

This section provides an example of how you can consume a simple "Hello World" pagelet in WebCenter Portal. Before continuing, first follow the instructions in Section 62.8.1, "Creating a Simple Pagelet (an Example)" to create the "Hello World" pagelet that will be used in this example.

This section includes the following subsections:

- Section 62.8.2.1, "Registering the Pagelet Producer with WebCenter Portal"
- Section 62.8.2.2, "Inserting the Pagelet into a Portal"

62.8.2.1 Registering the Pagelet Producer with WebCenter Portal

In order to use our newly created pagelet from WebCenter Portal, we first need to register Pagelet Producer:

1. Log into WebCenter Portal as an administrator.
2. Click **Administration**.
3. Open the Configuration tab.
4. Click **Services**.
5. Click **Portlet Producers**.
6. Click **Register**.
7. Select **Pagelet Producer** and enter the values shown for the following fields:

   Producer Name: `MyPageletProducer`

   Server URL: `http://pageletserver.company.com:8889/pagelets/`
8. Click **Test** to make sure that the connection was correctly configured.

   If everything is successful you should see the Test Status dialog display a message indicating that the test connection was successful.
9. Click **OK**.

   The Pagelet Producer is now registered.

62.8.2.2 Inserting the Pagelet into a Portal

For our exercise we will need to create a portal. So let's start by logging into WebCenter Portal and creating a portal called "myportal" using "Portal Site" template.

1. Log into WebCenter Portal as an administrator.
2. Create a portal called `myportal` using the Portal Site template.
3. On the myportal portal click on the **Actions** icon and select **Edit Page**.
4. Click **Add Content** in one of the portal frames and select **Mash-Ups**.
5. Select **Pagelet Producers**.
6. Click the Pagelet Producer you previously registered.

   You will see the library MyLib containing the Hello_World pagelet.
7. Click **MyLib**, select the `Hello_World` pagelet and click **Add**.
8. Click **Close**.
9. Click **Save**, and then click **Close**.

   The Hello World pagelet is now inserted into the `myportal` page.

62.8.3 Consuming a Pagelet in WebCenter Interaction (an Example)

This section provides an example of how you can consume a simple "Hello World" pagelet in WebCenter Interaction (WCI) 10.3.0 or later. Before continuing, first follow the instructions in Section 62.8.1, "Creating a Simple Pagelet (an Example)" to create the "Hello World" pagelet that will be used in this example.

This section includes the following subsections:

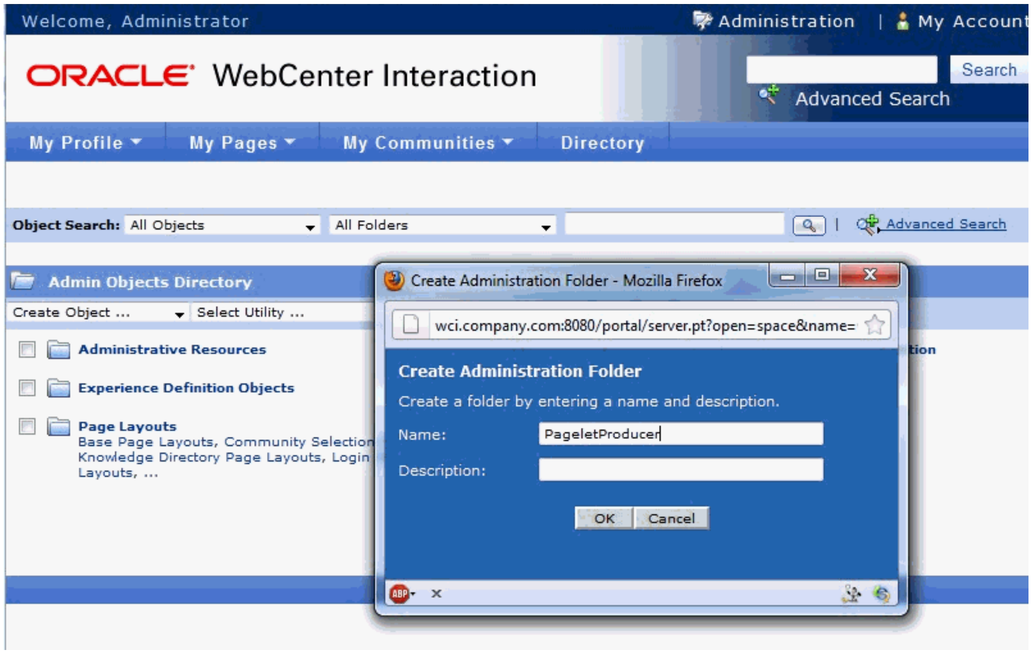
- Section 62.8.3.1, "Registering the Pagelet Producer Remote Server"
- Section 62.8.3.2, "Creating the "Hello World" Web Service"
- Section 62.8.3.3, "Creating the "Hello World" Portlet"
- Section 62.8.3.4, "Using the Hello World Portlet on the WCI Home Page"

62.8.3.1 Registering the Pagelet Producer Remote Server

In order to use our newly created pagelet from WCI, we first need to register Pagelet Producer:

1. Log into WCI as an administrator.
2. Click **Administration**.
3. Create the folder where we are going to keep all Pagelet Producer related objects by following the steps below:
   a. Open the **Create Object...** dropdown and select **Administrative Folder**.
   b. Enter `PageletProducer` as the **Name** and click **OK**.

Figure 62–42 WCI - Create Administration Folder



Create Administration Folder - Mozilla Firefox

wci.company.com:8080/portal/server.pt?open=space&name=

Create Administration Folder

Create a folder by entering a name and description.

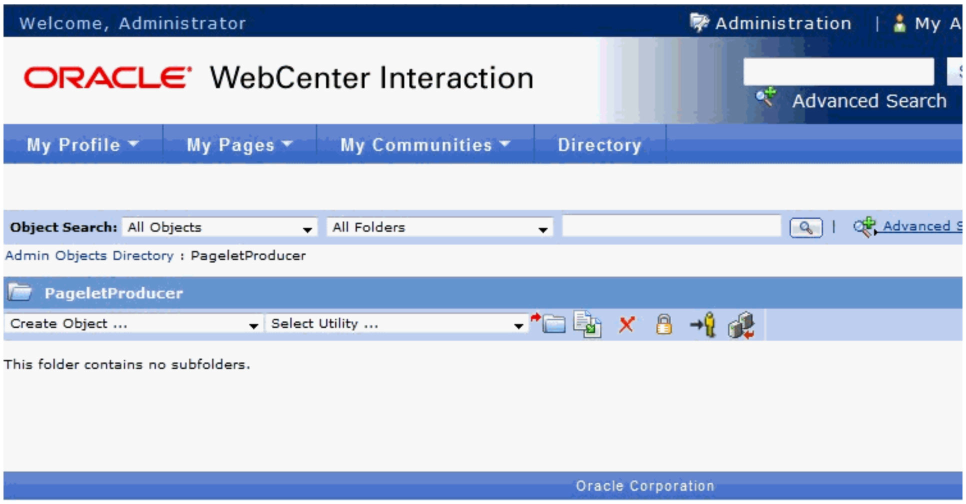
Name: PageletProducer

Description:

OK Cancel

4. Click the newly created PageletProducer folder.

Figure 62–43 WCI - Newly Created Folder



Object Search: All Objects | All Folders

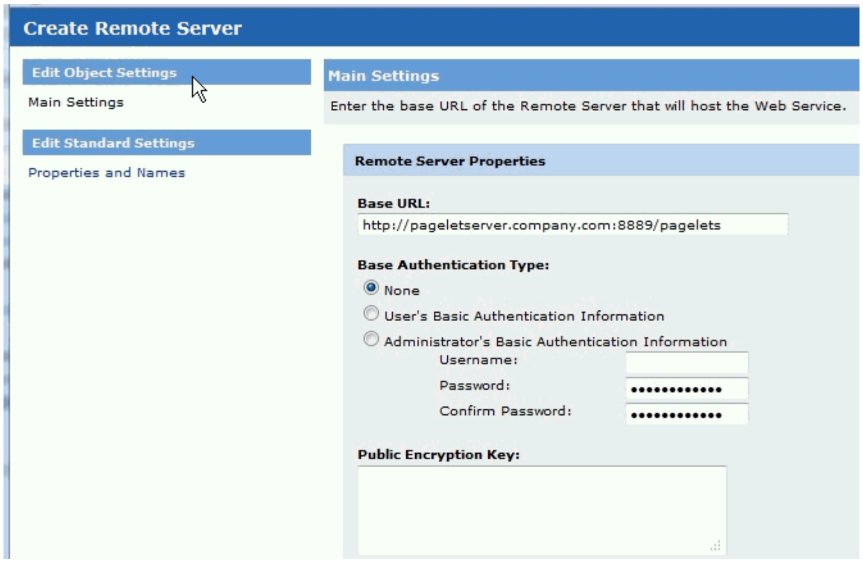
Admin Objects Directory : PageletProducer

PageletProducer

This folder contains no subfolders.

5. Open the **Create Object...** dropdown and select **Remote Server**.

Figure 62–44 WCI - Create Remote Server



Main Settings

Enter the base URL of the Remote Server that will host the Web Service.

Remote Server Properties

Base URL:
http://pageletserver.company.com:8889/pagelets

Base Authentication Type:

● None
○ User's Basic Authentication Information
○ Administrator's Basic Authentication Information

Username:
Password: ••••••••••••
Confirm Password: ••••••••••••

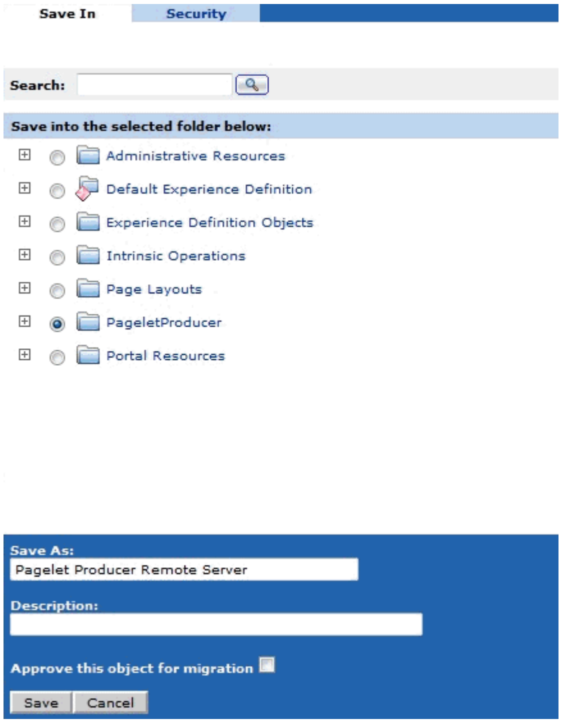
Public Encryption Key:

6. In the **Base URL** field, enter `http://pageletserver.company.com:8889/pagelets` (this is the address of our Pagelet Producer server in this example).

7. Click **Finish**.

8. Select the `PageletProducer` folder and in the **Save As** field enter `Pagelet Producer Remote Server`.

Figure 62–45 WCI - Saving the Pagelet Producer Remote Server Object



Save into the selected folder below:

- ○ Administrative Resources
- ○ Default Experience Definition
- ○ Experience Definition Objects
- ○ Intrinsic Operations
- ○ Page Layouts
- ● PageletProducer
- ○ Portal Resources

Save As: Pagelet Producer Remote Server

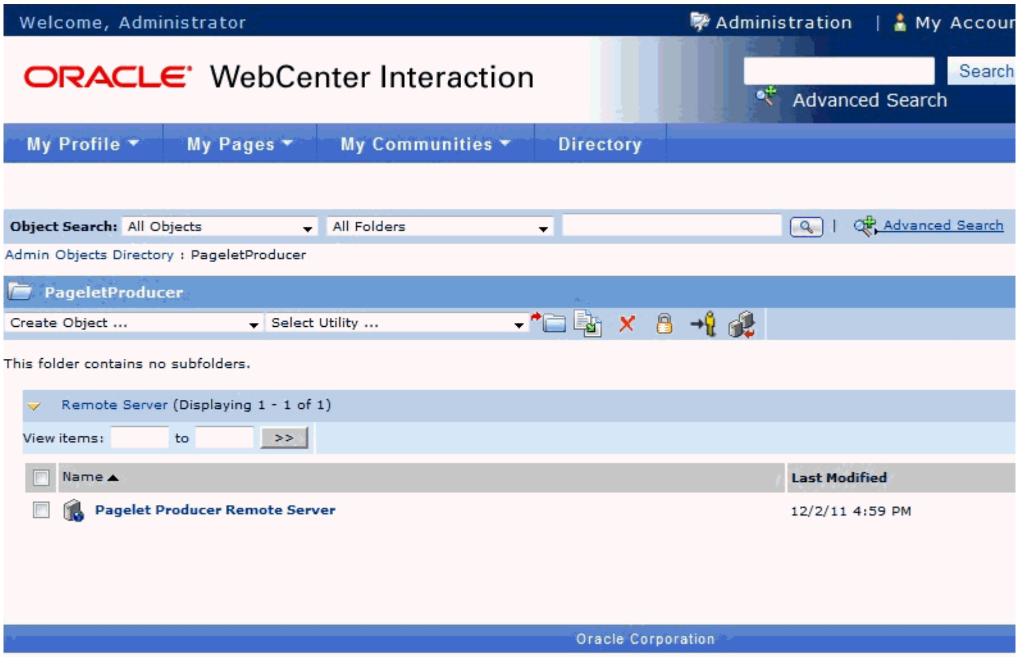
Description:

Approve this object for migration □

9. Click **Save**.

   You've now created a Pagelet Producer Remote Server connection in the PageletProducer folder.

Figure 62–46 WCI - Pagelet Producer Remote Server Object



Object Search: All Objects | All Folders

Admin Objects Directory : PageletProducer

PageletProducer

This folder contains no subfolders.

Remote Server (Displaying 1 - 1 of 1)

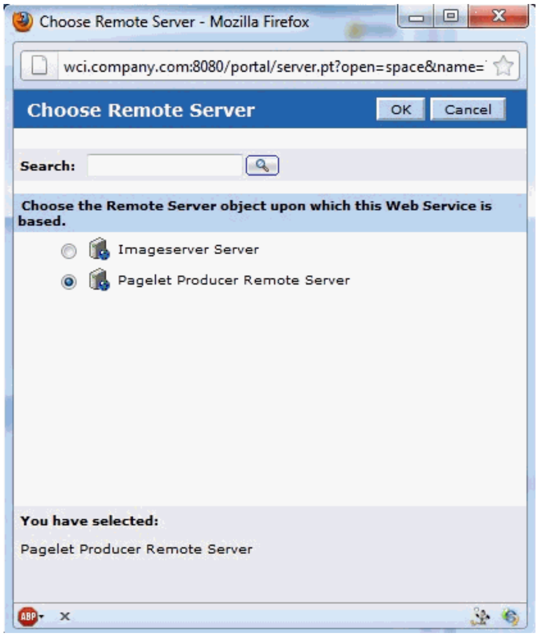
□ Name ▲	Last Modified
□ Pagelet Producer Remote Server	12/2/11 4:59 PM

62.8.3.2 Creating the "Hello World" Web Service

In this section we'll continue by creating the "Hello World" Web service.

1. Open **Create Object...** dropdown and select **Web Service - Remote Portlet**.
2. Click **Browse** and select **Pagelet Producer Remote Server**.

Figure 62–47 WCI - Choose Remote Server Dialog



Choose Remote Server - Mozilla Firefox

wci.company.com:8080/portal/server.pt?open=space&name=

Choose Remote Server

OK Cancel

Search:

Choose the Remote Server object upon which this Web Service is based.

○ Imageserver Server

● Pagelet Producer Remote Server

You have selected:

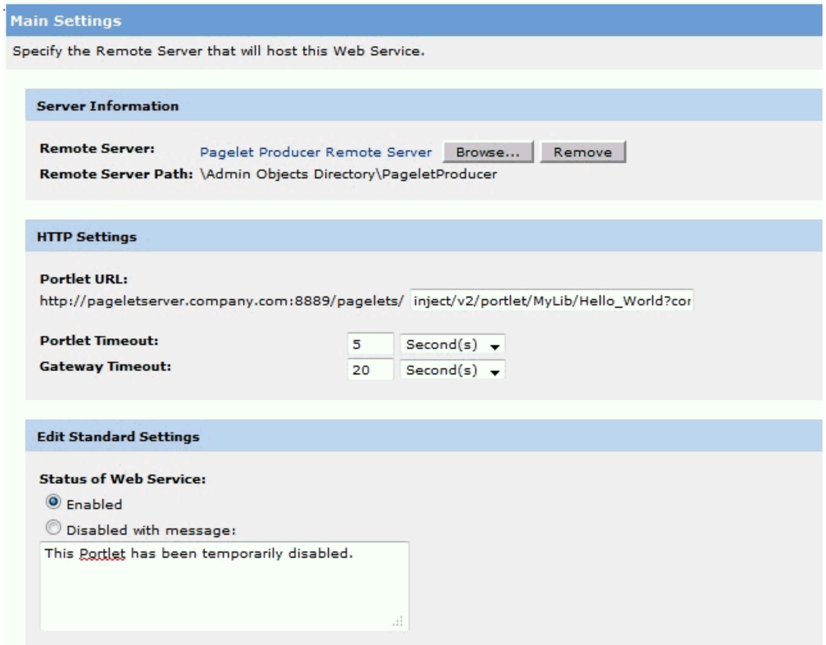
Pagelet Producer Remote Server

3. Click **OK**.
4. In the **Portlet URL** field enter:

```
inject/v2/portlet/MyLib/Hello_
World?content-type=iframe&csapi=true&ifheight=300px
```

Where `MyLib` is a library that contains our "Hello World" pagelet and `Hello_World` is the name of our pagelet.

Figure 62–48 WCI - Create Web Service - Remote Portlet Dialog



Main Settings

Specify the Remote Server that will host this Web Service.

Server Information

Remote Server: Pagelet Producer Remote Server

Remote Server Path: \Admin Objects Directory\PageletProducer

HTTP Settings

Portlet URL:
http://pageletserver.company.com:8889/pagelets/ inject/v2/portlet/MyLib/Hello_World?cor

Portlet Timeout: 5 Second(s)

Gateway Timeout: 20 Second(s)

Edit Standard Settings

Status of Web Service:

● Enabled

○ Disabled with message:

This Portlet has been temporarily disabled.

5. Click **Finish**.

6. Select the `PageletProducer` folder and in the **Save As** field enter `Hello World Web Service`.

7. Click **Save**.

   You've now created the Hello World Web service.

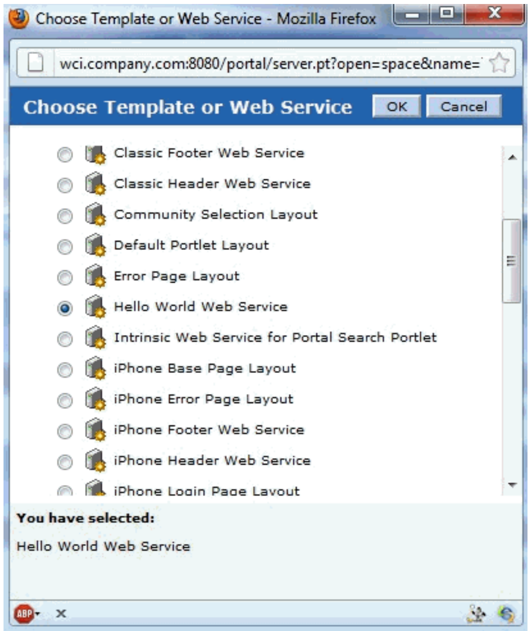
62.8.3.3 Creating the "Hello World" Portlet

In this section we'll continue by creating a Hello World portlet.

1. Open the **Create Object...** dropdown list and select **Portlet**.

   The Choose Template or Web Service dialog displays (Figure 62–49).

Figure 62–49 WCI - Choose Template or Web Service


Choose Template or Web Service - Mozilla Firefox
wci.company.com:8080/portal/server.pt?open=space&name=
Choose Template or Web Service
OK
Cancel

○ Classic Footer Web Service
○ Classic Header Web Service
○ Community Selection Layout
○ Default Portlet Layout
○ Error Page Layout
● Hello World Web Service
○ Intrinsic Web Service for Portal Search Portlet
○ iPhone Base Page Layout
○ iPhone Error Page Layout
○ iPhone Footer Web Service
○ iPhone Header Web Service
○ iPhone Login Page Layout

You have selected:
Hello World Web Service

2. From the list of templates or Web services select `Hello World Web Service` and click **OK**.

3. Under **Portlet Type/Size**, select the portlet type and size you want to use and click **Finish**.

4. Select the PageletProducer folder

5. In the **Save As** field, enter `Hello World Portlet` and click **Save**.

   You've now created the Hello World portlet.

62.8.3.4 Using the Hello World Portlet on the WCI Home Page

Now that we've registered the Pagelet Producer, set up the Pagelet Producer Web service, and created the Hello World portlet, let's continue by using the portlet on a page in WCI. For the sake of simplicity, we'll use the WCI Home Page, but you could use any other WCI page.

1. In WCI, navigate to **My Pages > Home Page**.

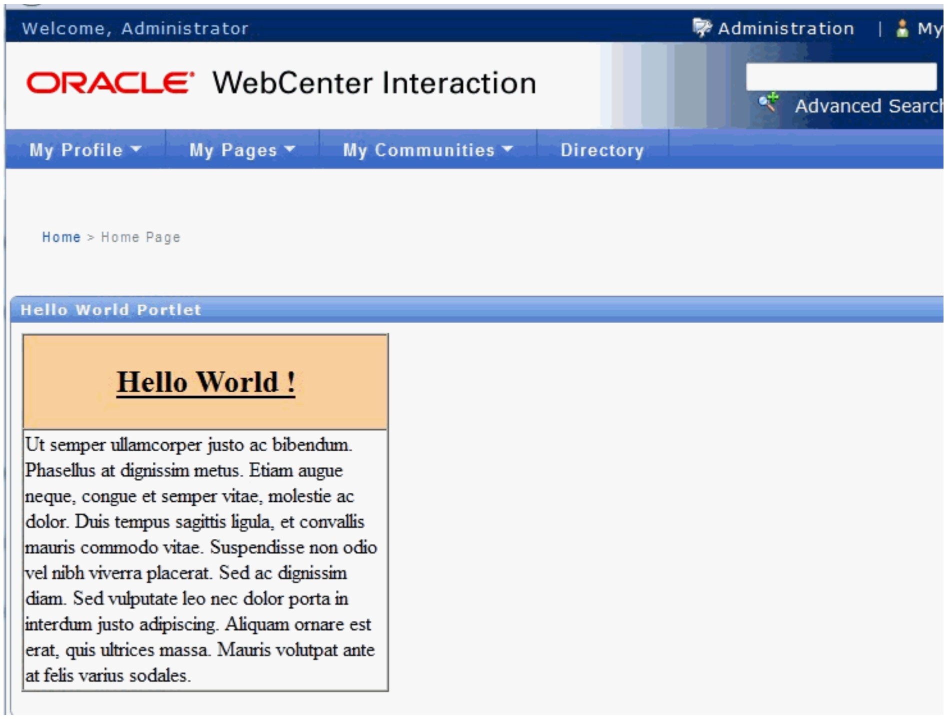
2. Click **Edit Page** and open the `PageletProducer` folder.

3. Click Hello World Portlet.

4. Click **Close Editor**.

   Here's our Hello World pagelet inserted into the Home Page in WCI:

Figure 62–50 WCI - Hello World Pagelet on Home Page



Hello World !

Ut semper ullamcorper justo ac bibendum. Phasellus at dignissim metus. Etiam augue neque, congue et semper vitae, molestie ac dolor. Duis tempus sagittis ligula, et convallis mauris commodo vitae. Suspendisse non odio vel nibh viverra placerat. Sed ac dignissim diam. Sed vulputate leo nec dolor porta in interdum justo adipiscing. Aliquam ornare est erat, quis ultrices massa. Mauris volutpat ante at felis varius sodales.

62.8.4 Consuming a Pagelet in Oracle WebCenter Sites (an Example)

This section is aimed at developers who need to integrate content into Oracle WebCenter Sites 11*g* pages, including existing WSRP portlets or elements of Web UI exposed by backend applications such as Oracle EBS. Developers should be familiar with Oracle WebCenter Sites and Oracle WebCenter Pagelet Producer and have a solid understanding of Web technologies.

This section includes the following subsections:

- Section 62.8.4.1, "Adding Pagelets to Oracle WebCenter Sites"
- Section 62.8.4.2, "Using Identity Propagation"
- Section 62.8.4.3, "Propagating Identity from Pagelet Producer to the Backend Application"
- Section 62.8.5, "Consuming WSRP Portlets as Pagelets"
- Section 62.8.6, "Consuming WebCenter Portal Services as Pagelets in Sites"
- Section 62.8.7, "Consuming Applications as Pagelets Using EBS11i"

62.8.4.1 Adding Pagelets to Oracle WebCenter Sites

Once a pagelet and its related resources are configured, you can insert it into a Web page using JavaScript or REST. For more information, see Section 62.7.2, "Adding a Pagelet to a Web Page."

Here, we'll use an approach in which pagelets are added directly to a page template in Oracle WebCenter Sites using an iFrame with a REST URL for accessing pagelets as a content source. This requires an addition to the page template script tag to load the CSAPI JavaScript library (which adds necessary functions into the parent page), as well as the actual iFrame that loads pagelet content:

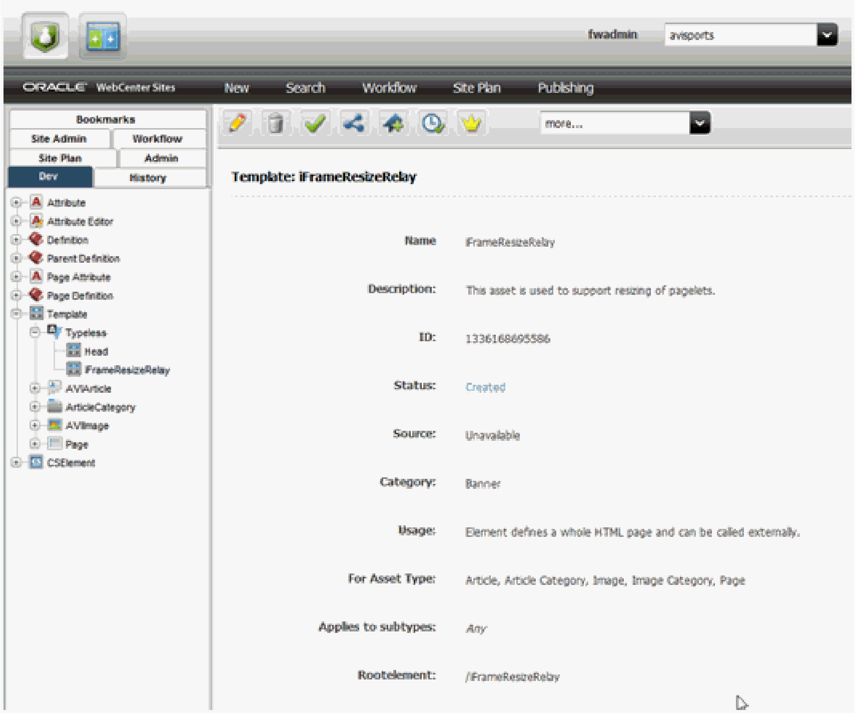
```
<script type="text/javascript" src="http://%PAGELET_PRD_
HOST%/pagelets/inject/v2/csapi"/>
<iframe id="pt-pagelet-iframe-1" width="100%" frameborder="0"
src="http://%PAGELET_PRD_HOST%/pagelets/inject/v2/pagelet/lib_name/pagelet_
name?content-type=html&consumepage=true&ifheight=auto"></iframe>
```

Where `lib_name` and `pagelet_name` refer to the library and pagelet configured in Pagelet Producer. For more information about parameters, see Section 62.7.2.2, "Accessing Pagelets Using REST."

62.8.4.1.1 Enabling IFrame Auto-Resizing To provide a more seamless integration of the pagelet into the consuming page, you can make the pagelet iFrame behave more like inline markup by dynamically resizing to accommodate its content. To enable this feature, some extra configuration is required in both Sites and Pagelet Producer.

This section uses the AviSports sample site shipped with WebCenter Sites. To add any new asset to this site, you must log in to the Sites Administration page and open the Dev section in the left hand navigation as shown in Figure 62–51:

Figure 62–51 Sites Administration Page



Template: iFrameResizeRelay

Name: iFrameResizeRelay

Description: This asset is used to support resizing of pagelets.

ID: 1336168695586

Status: Created

Source: Unavailable

Category: Banner

Usage: Element defines a whole HTML page and can be called externally.

For Asset Type: Article, Article Category, Image, Image Category, Page

Applies to subtypes: Any

Rootelement: /iFrameResizeRelay

First, create a new template with the following settings:

- Name
  - Name: iFrameResizeRelay (or name of your choice)
  - For Asset Type: Applicable to various asset types (typeless)
- Element
  - Usage: Element defines a whole HTML page and can be called externally
  - Element Storage Path/Filename: iframe-resize.html (or name of your choice)
  - Element Logic:

```
<html>
  <head>
    <title>Resizing Page</title>
    <script type="text/javascript">
function onLoad() {
var params = window.location.search.substring( 1 ).split( '&' );
var height;
var width;
var iframe;
for( var i = 0, l = params.length; i < l; ++i ) {
var parts = params[i].split( '=' );
switch( parts[0] ) {
case 'height':
height = parseInt( parts[1] );
break;
case 'width':
width = parseInt( parts[1] );
break;
case 'iframe':
iframe = parts[1];
break;
}
}
window.top.updateIFrame( iframe, height, width );
}
if (window.addEventListener) {
window.addEventListener("load", onLoad, false);
} else if (window.attachEvent) {
window.detachEvent("onload", onLoad);
window.attachEvent("onload", onLoad);
} else {
window.onload=onLoad;
}
    </script>
  </head>
  <body>
  </body>
</html>
```

- Site Entry
  - Cache Rules: Cached (default)
- Save
- Record SiteCatalog Pagename as `%PAGENAME%` (if you used the default name, this would be `<site_name>/iFrameResizeRelay`)

The new template is addressable as follows:

```
http://%SITES_HOST%/cs/Satellite?pagename=%PAGENAME%
```

Make a note of this URL; it will be used to configure the Injector for the pagelet.

Next, apply the iFrame resizing feature by adding a new Injector to the pagelet using the Pagelet Producer Administration Console. Open the pagelet, select Injectors and create a new Injector with the following settings:

- General
  - Name: auto_resizer (or name of your choice)
  - URL Filter: <none>

- MIME Filter: text/html
- Inject Location: Before </head>

- Content: Select Text (default) and copy the JavaScript below into the text area

  Replace SITES_RESIZE_RELAY_PAGE in the JavaScript below with the URL to the template you created in the previous step.

```
<script type="text/javascript">
var SITES_RESIZE_RELAY_PAGE = "http://%SITES_
HOST%/cs/Satellite?pagename=%PAGENAME%"; // CHANGE ME!

if (window.addEventListener) {
    window.addEventListener("load", calculateSizeFixed, false);
} else if (window.attachEvent) {
    window.attachEvent("onload", calculateSizeFixed);
} else {
    window.onload=calculateSizeFixed;
}
function calculateSizeFixed() {
  var PTResizeIFrame = PTResizeIFrame || {};
  if (PTPortalPage && PTPortalPage.portlets) {
    for (var i in PTPortalPage.portlets) {
      if ( PTPortalPage.portlets[i].id != "page") {
        PTResizeIFrame.pageletInstanceID = PTPortalPage.portlets[i].id;
        break;
      }
    }
  }
  else if (!PTResizeIFrame.pageletInstanceID) {
    PTResizeIFrame.pageletInstanceID = 1;
  }

  if (!PTResizeIFrame.pageletResizePage) {
    var match = window.location.search.match(/resizepage=[^&]*/);
    if (match != null && match.length > 0) PTResizeIFrame.pageletResizePage =
unescape(match[0].substr("resizepage=".length));
    else PTResizeIFrame.pageletResizePage = SITES_RESIZE_RELAY_PAGE;
  }
  var agent = navigator.userAgent;
  var ffversion = agent.indexOf("Firefox") >= 0 ?
agent.substring(agent.indexOf("Firefox")).split("/")[1] : -1;
  var FFextraHeight = parseFloat(ffversion)>=0.1? 25 : 0;
  var scrollHeightExtra = 15;
  if (agent.indexOf('MSIE') > 0) {
    scrollHeightExtra = 35;
  }
  if (FFextraHeight > 0) scrollHeightExtra = FFextraHeight;
  var wrapper = document.getElementById( 'pt-inner-iframe-wrapper-' +
PTResizeIFrame.pageletInstanceID);
  if (wrapper == null) wrapper =
createRelayIFrame(PTResizeIFrame.pageletInstanceID);
  var iframe = document.getElementById( 'pt-inner-iframe-' +
PTResizeIFrame.pageletInstanceID);
  var height = 0;
  var width = 0;
  var iframename = '';

  if( (document.contentDocument) &&
(document.contentDocument.documentElement.offsetHeight) ) {
    height = document.contentDocument.documentElement.offsetHeight +
FFextraHeight;
  } else if( (document.contentDocument) &&
(document.contentDocument.body.offsetHeight) ) {
    height = document.contentDocument.body.offsetHeight+FFextraHeight;
  } else if (document && document.documentElement.scrollHeight ) {
    height = document.documentElement.scrollHeight + scrollHeightExtra;
  } else if( document && document.body.scrollHeight ) {
    height = document.body.scrollHeight + scrollHeightExtra;
  } else {
    height = wrapper.offsetHeight;
  }
  width = wrapper.offsetWidth;
  iframename = 'pt-pagelet-iframe-' + PTResizeIFrame.pageletInstanceID;
  var qsSeparator = PTResizeIFrame.pageletResizePage.indexOf("?") >= 0 ? "&" :
"?";

iframe.setAttribute("src", PTResizeIFrame.pageletResizePage + qsSeparator +
'height=' + height + '&' + 'width=' + width + '&' + 'iframe=' + iframename);
}

function createRelayIFrame(pageletInstanceId) {
  var wrapper = document.createElement("div");
  wrapper.id = "pt-inner-iframe-wrapper-" + pageletInstanceId;
  var iframe = document.createElement("iframe");
  iframe.id =  "pt-inner-iframe-" + pageletInstanceId;
  iframe.setAttribute("height", 0);
  iframe.setAttribute("frameborder", 0);
  iframe.setAttribute("width", 0);
  wrapper.appendChild(iframe);
  document.body.appendChild(wrapper);
  return wrapper;
}
</script>
```

Add the pagelet to the page template in Sites using a REST URL within an IFrame. In the IFrame, the id parameter should use the unique number identifying the pagelet IFrame (for example, "pt-pagelet-iframe-1"). You must add the following query string parameters to the pagelet URL to support IFrame auto-resizing:

- `resizepage=http://%SITES_HOST%/cs/Satellite?pagename=%PAGENAME%`
- `ifheight=auto`

For example:

```
<script type="text/javascript" src="http://%PAGELET_PRD_
HOST%/pagelets/inject/v2/csapi"/>
<iframe id="pt-pagelet-iframe-1" width="100%" frameborder="0"
src="http://%PAGELET_PRD_HOST%/pagelets/inject/v2/pagelet/lib_name/pagelet_
name?content-type=html& consumepage=true&resizepage=http://%SITES_
HOST%/cs/Satellite?pagename=%PAGENAME%&ifheight=auto">
</iframe>
```

Note: In certain situations automatic resizing may not work properly when multiple pagelets are present on a page. This is known to occur with pagelets that require form auto-login to external authentication servers. In this case, only one pagelet can be configured for auto-resizing, while the others should use static IFrame sizing.

62.8.4.1.2 Changing Pagelet Styling To make a pagelet fit better visually in a consuming WebCenter Sites page, an Injector may be used to add styles that override the original CSS. In order for the override to work correctly, it is important that the style definitions supplied by the Injector come after the styles defined by the backend application. The following example does this by injecting replacement CSS into the end of the <HEAD> section.

To restyle a pagelet, add a new Injector to the pagelet using the Pagelet Producer Administration Console. Open the pagelet, select Injectors and create a new Injector with the following settings:

- General:
  - Name: new_styles (or name of your choice)
  - URL Filter: <none>
  - MIME Filter: text/html
  - Injector Location: Before </head>
- Content

  ```
  Injector Location: Before </head>
  ```

Section 62.8.7, "Consuming Applications as Pagelets Using EBS11i" includes a working example of an Injector used to re-style the EBS UI to match the sample AviSports site in WebCenter Sites.

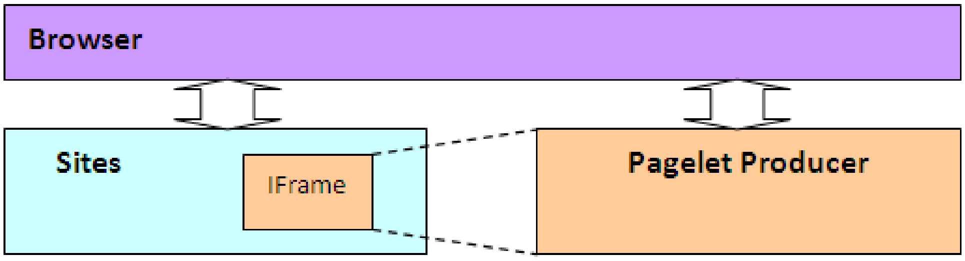
62.8.4.2 Using Identity Propagation

The core purpose of Pagelet Producer is to proxy backend applications. Since Pagelet Producer acts as a "middle-man" between the browser and the backend application, identity propagation must be broken into two parts:

- Section 62.8.4.2.1, "Establishing Identity in Pagelet Producer"
- Section 62.8.4.2.2, "Using a Login Page Supplied by Pagelet Producer"

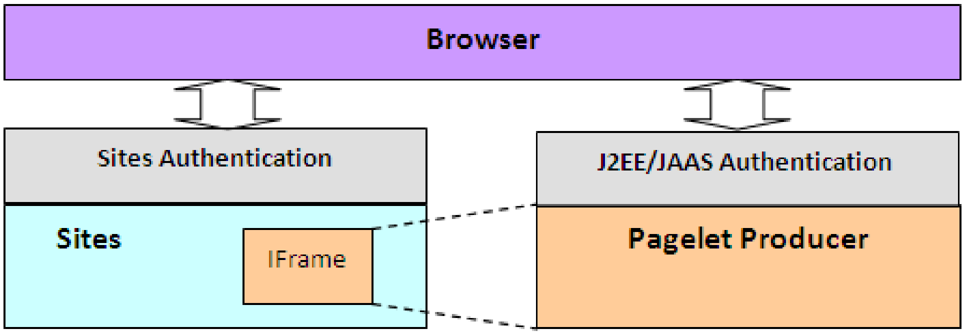
62.8.4.2.1 Establishing Identity in Pagelet Producer Pagelet Producer typically injects Web content into WebCenter Sites using an IFrame as shown in Figure 62–52.

Figure 62–52 Pagelet Producer Content as IFrame in Sites



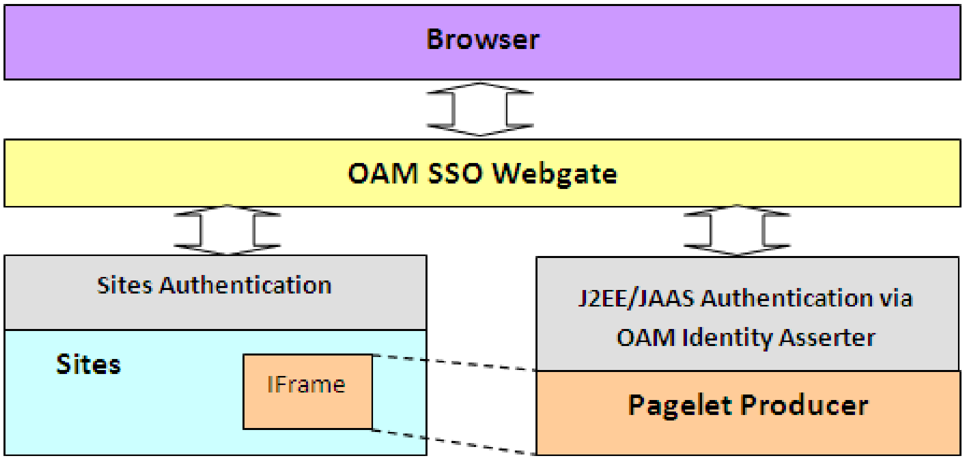
Since the content is injected as an IFrame, user identity must be established in both the Sites container and the Pagelet Producer container as shown in Figure 62–53. Note that Figure 62–53 leaves out the user directory that is assumed to be shared between the two authentication schemes.

Figure 62–53 Different authentication schemes for Sites and Pagelet Producer



The ideal way to manage identity between the browser and the two containers would be to use Oracle Access Manager (OAM) as shown in Figure 62–54. Note that Figure 62–54 leaves out the user directory that is assumed to be shared between the two authentication schemes, and excludes the OAM access server. Note also that this configuration is not supported for pre-11g versions.

Figure 62–54 Ideal Frontend Authentication Configuration Using OAM



To set up OAM for WebCenter Sites 11*g*, refer to the chapter on "Oracle Access Manager Integration Setup" in *Oracle WebCenter Sites Configuring Supporting Software.*

62.8.4.2.2 Using a Login Page Supplied by Pagelet Producer Before setting up OAM, it is sometimes useful to test the integration of Pagelet Producer in Sites. Without OAM, users must authenticate separately with Pagelet Producer and with Sites (see Figure 62–53). This section describes how to configure separate authentication with Pagelet Producer.

If OAM SSO is not present on either Pagelet Producer or Sites, the authentication scheme shown in Figure 62–55 must be supported by ensuring that Pagelet Producer provides a login form.

To force Pagelet Producer to display a login form:

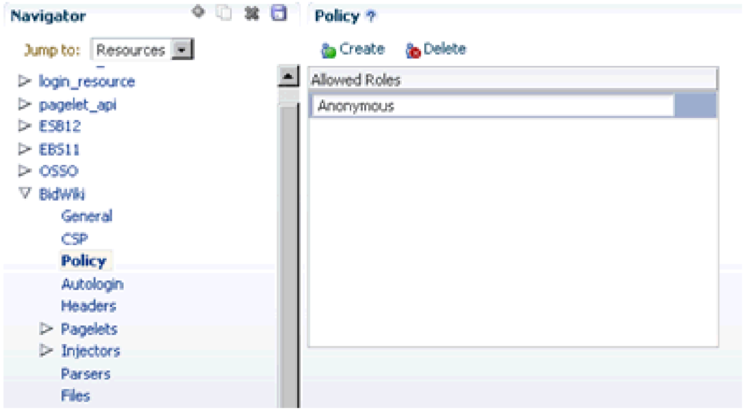
1. Identify a J2EE role to restrict access to the pagelet(s) or create a new role in the J2EE application server hosting Pagelet Producer.

   This example uses the global WebLogic Server (WLS) "Anonymous" J2EE role that is present in a default WLS installation.

2. Log in to the Pagelet Producer Administration Console, navigate to the resource(s) containing the pagelet(s) that must be surfaced in Sites and add the role you chose in step 1.

   Roles are defined on the Policy page for the resource.

Figure 62–55 Pagelet Producer Administration Console - Policy Page



62.8.4.3 Propagating Identity from Pagelet Producer to the Backend Application

The way in which identity is established depends on the type of application, as described in the following sections:

- Section 62.8.4.3.1, "WSRP/JPDK Portlets"
- Section 62.8.4.3.2, "Stand-alone Backend Application Protected with Native Authentication (Non-SSO)"
- Section 62.8.4.3.3, "Identity Propagation with Autologin"
- Section 62.8.4.3.4, "Stand-alone Backend Application Protected with SSO"
- Section 62.8.4.3.7, "Reference: Common Autologin Configurations"

62.8.4.3.1 WSRP/JPDK Portlets WSRP portlets must use WSS tokens for identity propagation. For details on configuring security tokens, see the "Registering WSRP and Oracle JPDK Portlet Producers in the Pagelet Producer" section in the *Administering Oracle WebCenter Portal*, and Section 62.8.5, "Consuming WSRP Portlets as Pagelets."

Each Oracle JPDK portlet that requires an identity will be passed credentials based upon information supplied by the external application's login form. For details, see the "Managing External Applications" and "Registering Oracle JPDK Portlet Producers" sections in *Administering Oracle WebCenter Portal*.

62.8.4.3.2 Stand-alone Backend Application Protected with Native Authentication (Non-SSO) Pagelet Producer has a feature called Autologin that allows Pagelet Producer to interact with the "native" authentication mechanism established by a backend application.

62.8.4.3.3 Identity Propagation with Autologin Since each backend application has its own means of authentication, a separate login prompt must be initiated by Pagelet Producer to collect any required credentials. Pagelet Producer resources can be configured to send credentials to backend applications as basic authentication headers, NTLM tokens, or Kerberos tokens, as well as manage forms-based authentication (typically via a session cookie). For information about configuring Autologin, see Section 62.3.1.1.4, "Configuring Autologin."

Note: Set the **Username** and **Password** fields to use the User Vault so that each user will be prompted for his or her own unique credentials to access the backend application.

62.8.4.3.4 Stand-alone Backend Application Protected with SSO Determining the proper Autologin settings for a backend application can be very challenging. Doing so requires looking at request headers, identifying redirects, and examining markup (sometimes dynamically generated). This inspection and configuration process can be daunting if there are multiple applications for which Autologin is required. Therefore, if Oracle Access Manager (OAM) or Oracle SSO (OSSO) is available, it is highly recommended that one of these single sign-on solutions be used to protect backend applications.

Once the backend application is protected with OAM, there are two ways that Pagelet Producer can supply credentials as described in the following subsections:

- Section 62.8.4.3.5, "Using Direct Identity Propagation to OAM Protected Backend Application"
- Section 62.8.4.3.6, "Using Identity Propagation with Autologin and SSO"

62.8.4.3.5 Using Direct Identity Propagation to OAM Protected Backend Application

An OAM 11g WebGate is an Apache module running on Oracle HTTP Server (OHS) that manages all validation of user credentials with the OAM server. Once it has established the validity of a user it sends the OAM_REMOTE_USER header to the Web application on the application server that OHS is proxying. The application server will have an OAM identity asserter running on it that will set the JAAS user principal name to the OAM_REMOTE_USER header value.

If Pagelet Producer is protected with an OAM 11g WebGate it will receive an OAM_REMOTE_USER header. All Web applications that it proxies will also receive this header. If the Web application it proxies is on an application server with the OAM Identity Asserter, then the OAM Identity Asserter will use the OAM_REMOTE_USER header value passed from Pagelet Producer to set the user principal. This will all work as long as Pagelet Producer is not trying to proxy the URL to the WebGate for the protected Web application. The rest of this section describes in details how this can be achieved in the context of Sites integration.

Example Setup

This example assumes that both WebCenter Sites and Pagelet Producer are protected by OAM WebGate as illustrated in Figure 62–54 above, and the following hosts and ports are used by the applications:

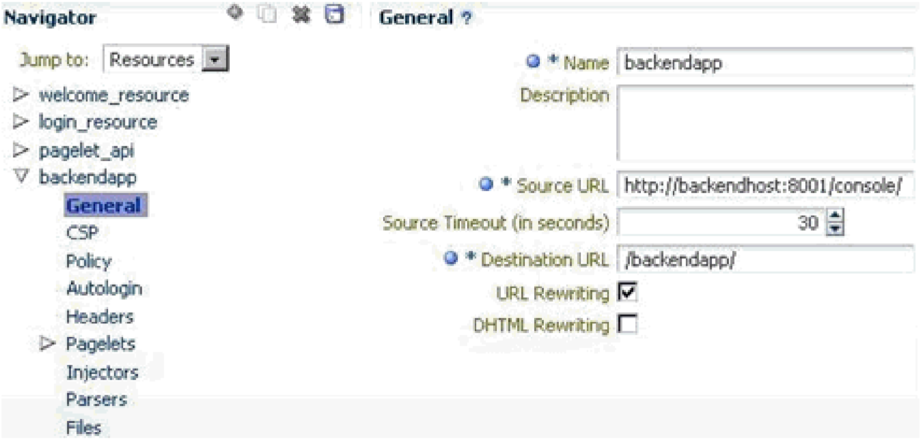
- OAM SSO WebGate: `www.example.com:80`
- WebCenter Sites: `sites_host:8080`
- WebCenter Pagelet Producer: `pp_host:8889`
- Backend application: `backendhost:8001`
- Full URL to backend application as viewed from browser (via WebGate)

  `http://www.example.com/backend/console`

- Full URL to backend application if accessed directly through application server (available only in internal network) `http://backendhost:8001/console`

Set up the Pagelet Producer resource to use the direct URL to the backend application, thus bypassing the WebGate (i.e., `http://backendhost:8001/console`).

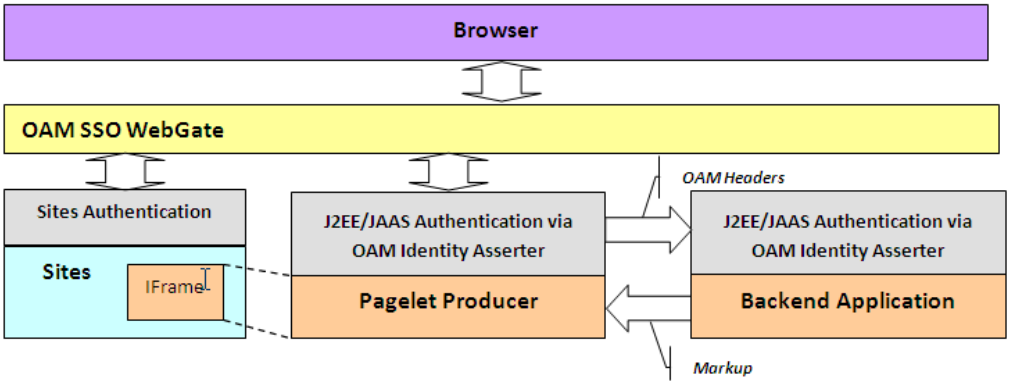
Figure 62–56 Pagelet Producer Administration Console - General Properties Page



* Name: backendapp
Description:
* Source URL: http://backendhost:8001/console/
Source Timeout (in seconds): 30
* Destination URL: /backendapp/
URL Rewriting ☑
DHTML Rewriting □

By setting up Pagelet Producer to call directly into the backend application (bypassing the WebGate) all the OAM secure headers that Pagelet Producer receives are passed to the OAM Identity Asserter on the application server hosting the backend application. Once the OAM Identity Asserter on the application server hosting the backend application receives the OAM headers it will set the proper user principal (see Figure 62–57). Note that Figure 62–57 leaves out the user directory that is assumed to be shared between the two authentication schemes. It also excludes the OAM access server.

Figure 62–57 Pagelet Producer Calling the Backend Application Directly



Note: Although setting up Pagelet Producer to bypass the WebGate will achieve single sign-on, this solution should not always be applied. In cases where the OHS server hosting the WebGate is also managing load balancing for the backend application, bypassing the WebGate will also bypass load-balancing. All traffic to the application will be routed to one server. In this case we recommend configuring Pagelet Producer for Autologin as described in Section 62.8.4.3.6, "Using Identity Propagation with Autologin and SSO."

62.8.4.3.6 Using Identity Propagation with Autologin and SSO

If bypassing the OAM WebGate (as described in Section 62.8.4.3.5, "Using Direct Identity Propagation to OAM Protected Backend Application") is not a feasible option then credentials can still be supplied using Pagelet Producer's Autologin feature. The advantage of using Autologin with an Oracle SSO solution (OAM or OSSO) login page as opposed to individual login forms for each backend application (see Section 62.8.4.3.3, "Identity Propagation with Autologin") is that Autologin only has to be set up once and the configuration steps are the same for every implementation.

The steps for setting up Autologin with OSSO are described in Section 62.8.7.2, "Configuring Autologin." In a production environment, these steps can be followed as is with one exception: the `ssousername` and `password` form fields should be linked to the "User Vault".

Backend applications protected with OAM can also be set up following the steps described for OSSO in the Configure Autologin section in this document with the following exceptions:

- The login form URL will be a set location (e.g., `http://oam11g.mycompany.com:14100/oam/server/obrareq.cgi`).

  Be sure to remove the query string after the fixed location argument when setting the Autologin form identification URL.

- The form action URL will be a different value, but it should be a static value. Inspect the OAM form to determine the form action URL.
- The username and password fields may be different values. Inspect the OAM form fields to determine these values.
- Include the following two generated values: "request_id" and "OAM_REQ".

62.8.4.3.7 Reference: Common Autologin Configurations This section provides a quick reference of Autologin settings in Pagelet Producer for common backend SSO scenarios.

This section contains the following subsections:

- Section 62.8.4.3.8, "Autologin Settings for Oracle Access Manager (OAM)"
- Section 62.8.4.3.9, "Autologin Settings for Oracle SSO (OSSO)"

62.8.4.3.8 Autologin Settings for Oracle Access Manager (OAM)

Login Form Identification:

- URL: `http://%OAM_ROOT%/server/obrareq.cgi`

Form Submit Location:

- URL: `/oam/server/auth_cred_submit`

Form Fields:

- actionURL: static: `/oam/server/auth_cred_submit`
- request_id: Generated
- username: Unsecured or Credential Vault
- OAM_REQ: Generated
- password: Unsecured or Credential Vault

62.8.4.3.9 Autologin Settings for Oracle SSO (OSSO)

Login Form Identification:

- URL: `%OSSO_HOST%/sso/jsp/login.jsp`

Form Submit Location:

- URL: `%OSSO_HOST/sso/auth - POST`

Form Fields:

- appctx: Generated
- locale: Generated
- password: Unsecured or Credential Vault
- site2pstoretoken: Generated
- ssousername: Unsecured or Credential Vault
- v: Generated

62.8.5 Consuming WSRP Portlets as Pagelets

Pagelet Producer incorporates the WebCenter Common Consumer and therefore can expose WSRP and Oracle JPDK portlets as pagelets for use in WebCenter Sites or any other Web container that does not include a WSRP consumer.

The WSRP Portlet Producer can be registered with Pagelet Producer using Fusion Middleware Control, WLST, or the Pagelet Producer Administrative Console. For more information, see the "Registering WSRP and Oracle JPDK Portlet Producers in Pagelet Producer" section in *Administering Oracle WebCenter Portal*. Once registration is complete, the WSRP producer will appear as a resource in the Pagelet Producer Administrative Console, and the portlets associated with the WSRP endpoint will be listed in the pagelets collection for the resource.

> **Note:** Auto-generated WSRP resources and pagelets cannot be modified. To create a version that can be modified, choose the resource in the Pagelet Producer Administrative Console and click **Copy**. The cloned version of the resource can be edited and various elements such as Injectors can be added to customize pagelet functionality. For example, a custom Injector could be used to inject CSS classes to modify portlet markup to make it look and feel like the Sites that will host the pagelet.

If the WSRP Producer that you are registering with Pagelet Producer requires authentication, the following steps are required:

- Configure WS-Security between Pagelet Producer and the WSRP Producer as described in Configuring WS-Security in the Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Portal. You must ensure that the Java Key Store (JKS) is properly configured between the WSRP producer and Pagelet Producer; for details, see the "Setting Up the WebCenter Portal Domain Keystore" section in Administering Oracle WebCenter Portal.
- During the WSRP Producer registration, select the appropriate Token Profile in the Security section and enter the necessary configuration information. The path to the keystore must be absolute.

62.8.5.1 Exposing Custom ADF Task Flows as WSRP Portlets

Although it is possible to consume an ADF task flow in Pagelet Producer by 'clipping' it out of the page on which it is hosted, this is not the recommended approach. Considering the complexity of the markup generated by an ADF page and potential dependencies on other task flows or ADF page parameters, the recommended approach is to create a WSRP portlet based on the task flow and then consume the portlet in Pagelet Producer. One advantage of this approach is that ADF task flow parameters become portlet parameters that can be mapped to pagelet parameters, allowing information to be passed from the Sites page to the task flow. For step-by-step instructions on how to make a portlet from an ADF task flow, see Section 58.2.3, "How to Create a JSF Portlet Based on a Task Flow."

After the ADF task flow is exposed as a portlet, deploy a new WSRP Producer to a managed server in your WLS domain (for example, the `WC_Portlet` server on your WebCenter domain). Obtain the WSDL URL from the info page (`http://%PRODUCER_HOST%/%APP_CONTEXT%/info`) and make note of it. To register the new WSRP Producer with Pagelet Producer, see the "Registering WSRP and Oracle JPDK Portlet Producers in Pagelet Producer" section in *Administering Oracle WebCenter Portal*.

62.8.5.1.1 Exposing WSRP Portlets Developed for Oracle WebLogic Portal Oracle WebLogic Portal (WLP) supports a variety of portlet types, including Java Portlets, Java Server Faces Portlets, Java Server Page and HTML Portlets (for a complete list see the "Portlet Types" section in *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*). Remote (Proxy) Portlets are WSRP portlets and can be directly exposed as pagelets by registering the WSRP Producer with Pagelet Producer. This section describes how to expose local WLP portlets such as JSF, JSP or Java Portlets as pagelets for use in Sites.

62.8.5.1.2 Exposing WLP Portlets Using WLP as WSRP Producer

WLP can expose Java, Page Flow, JSP, JSF, and Struts Portlets as a "complex producer" that includes the required WSRP interfaces, optional interfaces and some extended interfaces (for details see "WebLogic Portal Producers" in the *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*). Consequently, native WLP portlets can be consumed by Pagelet Producer as any other WSRP portlets. Configuration and best practices for WSRP interoperability between WLP and the WebCenter Common Consumer are described in the "WSRP Interoperability with Oracle WebCenter Portal and Oracle Portal" section in *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*.

> **Note:** WLP portlets are WSRP-enabled by default since version 9.2. In earlier versions, you must edit the portlet properties and set the "Offer as Remote" property to true.

62.8.5.1.3 Configuring WS Security between WLP WSRP Producer and WebCenter Consumer

To consume WSRP portlets exposed by WLP in the WebCenter Common Consumer (Pagelet Producer), configuration is required on both the producer and consumer sides.

Typically it is impossible to consume WSRP portlets exposed by WebLogic Portal as an anonymous user, so it is necessary to configure SAML security on WLP for the producer and the WebCenter Common Consumer. Step-by-step instructions can be found in the "SAML Security Between a WebCenter Portal: Framework Application Consumer and a WebLogic Portal Producer" section in *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*. These instructions are comprehensive, with the following adjustments:

- In section 5 of "Configuring the Producer", the steps for configuring keystore information on the WSRP consumer are executed in JDeveloper. You must complete this step in the WebCenter Common Consumer (Pagelet Producer). You can specify the signing alias and keystore password using WLST or Fusion Middleware Control. For details, see "Configuring the Keystore Using WLST" or "Configuring the Keystore Using Fusion Middleware Control" in the *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Portal*.

  > **Note:** Once you have configured the keystore values you must restart both the managed server hosting Pagelet Producer (by default `WC_Portlet`) and the WLS Admin Server for the JPS configuration changes to be picked up.

- In section 4 of "Configuring the Producer", the instructions do not emphasize the importance of the issuer name. The name placed here must match that sent by the consumer. For Oracle JPS, the default issuer ID sent is `www.oracle.com`.

62.8.5.1.4 Registering the WLP WSRP Producer in Pagelet Producer

To register the WLP WSRP Producer in Pagelet Producer, follow the standard steps for creating and configuring a new WSRP Producer described in the "Registering WSRP and Oracle JPDK Portlet Producers in Pagelet Producer" section in *Administering Oracle WebCenter Portal*. Make sure to include the following settings:

- WSDL URL:

  ```
  http://%WLP_HOST%/%PORTAL_APP_NAME%/producer/wsrp-1.0/markup?WSDL
  ```

- Security:

  Token Profile: Select "WSS 1.0 Token with Message Integrity"

After registration, a new Pagelet Producer resource is automatically created and populated with pagelets to represent the WLP portlets associated with this WSRP endpoint.

> **Note:** To allow user identity propagation to the portlets, both WLP and Pagelet Producer should be configured as described in Section 62.8.4.3, "Propagating Identity from Pagelet Producer to the Backend Application." (For testing purposes or for portlet content that can be accessed without authentication, you can specify a valid username in the Default User field under Security.)

62.8.5.1.5 Adding WLP WSRP Portlets to Sites

To add WLP WSRP portlets to a page in Sites, follow the steps in Section 62.8.4.1, "Adding Pagelets to Oracle WebCenter Sites." The URL to use for the `src` attribute in the IFrame tag that loads pagelet content can be found under "Documentation" in Section 62.7.2.2, "Accessing Pagelets Using REST."

Auto-generated WSRP resources and pagelets cannot be modified. To use Pagelet Producer features to alter the markup of the WLP portlet such as modify look and feel of the portlet UI by injecting custom CSS styles, you must create a new version of the resource. Choose the resource that was created for your WLP WSRP Producer in the Pagelet Producer Administrative Console and click **Copy**. The cloned version can be modified, including adding elements such as Injectors to customize pagelet functionality.

62.8.6 Consuming WebCenter Portal Services as Pagelets in Sites

WebCenter Portal includes services and tools, such as announcements and documents, that can be used to facilitate user collaboration in WebCenter Sites. For an overview of these tools, see the "Part IV" and "Part V" parts in *Using Oracle WebCenter Portal*.

The recommended approach for exposing these services and tools in Sites is to consume the associated WSRP portlets in Pagelet Producer by leveraging the Services Producer component included with Oracle WebCenter Portal (11.1.1.6 and later).

The following portal tools are exposed as WSRP portlets by default:

- Activity Stream
- Discussion Forums
- Mail
- Polls Manager
- Document Manager
- Lists
- Tag Cloud
- Blogs
- Work list
- Polls
- Announcements

> **Note:** Additional tools can be exposed by extending the Services Producer to a new JSPX page and then adding the taskflow to the page.

62.8.6.1 Requirements

Install WebCenter Portal following the instructions in the *Oracle Fusion Middleware Installation Guide for Oracle WebCenter*. Make sure that all dependent components are also installed and configured, including WebCenter Content Server, the discussions server, and Pagelet Producer. For more information, see Section 62.1.3, "Requirements."

62.8.6.2 Configuring Security and Single Sign-On

There are two prerequisites to allow access to WebCenter Portal services from a Sites-driven Web site:

- Create a common user base between the Web site and WebCenter Portal
- Establish user identity propagation from the Web site to WebCenter Portal

These are described in the following subsections:

- Section 62.8.6.2.1, "Creating a Common User Base: LDAP Integration"
- Section 62.8.6.2.2, "Establishing User Identity Propagation: OAM Configuration"
- Section 62.8.6.2.3, "Configuring the GUID Attribute in the Identity Store"
- Section 62.8.6.2.4, "Configuring SSO for Discussions Server"

62.8.6.2.1 Creating a Common User Base: LDAP Integration

Creating a common user base requires configuring a common LDAP repository to be used by WebCenter Sites and all WebCenter Portal components. When selecting an LDAP server, make sure it is compliant with the WebLogic Server that runs WebCenter Portal components.

Things to remember when configuring security on WLS:

- Set the priority of the Authenticators to SUFFICIENT
- Set the Control Flag (in parenthesis) and order of authentication providers as follows:
  - OAM Identity Asserter (REQUIRED)
  - LDAP Authenticator (SUFFICIENT)
  - Default Authenticator (SUFFICIENT)
  - Default Identity Asserter (SUFFICIENT)

62.8.6.2.2 Establishing User Identity Propagation: OAM Configuration

To establish user identity propagation, we recommend configuring the SSO solution for WebCenter Sites and WebCenter Portal using Oracle Access Manager (OAM).

If you are using OAM, make sure it is configured to pass the user principal name in the ORACLE_REMOTE_USER header. Both ObSSOCookie and OAM_REMOTE_USER must be set to active on the OAM Identity Asserter on the WebLogic Server.

62.8.6.2.3 Configuring the GUID Attribute in the Identity Store

Specify the GUID attribute value to ensure that the value that is used in the identity store matches the value configured in the LDAP authentication provider. This value is configured in the `jps-config.xml` file.

Set the GUID for your LDAP authenticator in the `jps-config.xml` file.

```
<serviceInstance provider="idstore.ldap.provider" name="idstore.ldap">
<property
value="oracle.security.jps.wls.internal.idstore.WlsLdapIdStoreConfigProvider"
name="idstore.config.provider"/>
<property value="oracle.security.idm.providers.stdldap.JNDIPool" name="CONNECTION_
POOL_CLASS"/>
<property value="GUID=uuid" name="PROPERTY_ATTRIBUTE_MAPPING"/>
</serviceInstance>
```

62.8.6.2.4 Configuring SSO for Discussions Server

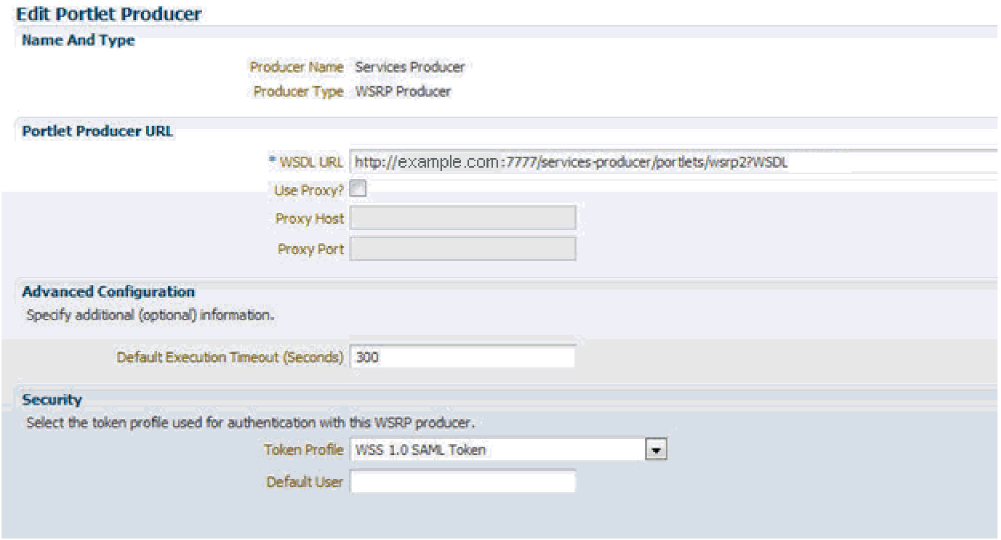
To use discussions, configure the discussions server for SSO before ordering the Authenticators in WebLogic Server (using the Default Authenticator and Default Identity Asserter). It is also possible to use WLST to configure SSO for the discussions server. For details, see the "Configuring the Discussions Server for SSO" chapter in *Administering Oracle WebCenter Portal*.

62.8.6.3 Registering WebCenter Services Exposed as WSRP Portlets

To import the WSRP portlets that expose WebCenter Services into Pagelet Producer, simply register the Services Producer as a WSRP Producer in Pagelet Producer using Enterprise Manager, WLST or the Pagelet Producer Administrative Console.

Figure 62–58 shows an example of WSRP endpoint registration in the Pagelet Producer Administrative Console. For details, see the "Registering WSRP and Oracle JPDK Portlet Producers in Pagelet Producer" sections in *Administering Oracle WebCenter Portal*.

Figure 62–58 Pagelet Producer Administrative Console - Registering WSRP Endpoint



Edit Portlet Producer

Name And Type

Producer Name Services Producer

Producer Type WSRP Producer

Portlet Producer URL

* WSDL URL http://example.com:7777/services-producer/portlets/wsrp2?WSDL

Use Proxy? □

Proxy Host

Proxy Port

Advanced Configuration

Specify additional (optional) information.

Default Execution Timeout (Seconds) 300

Security

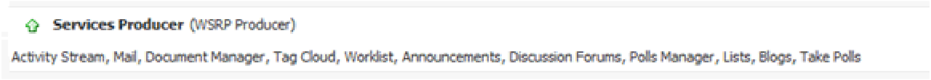
Select the token profile used for authentication with this WSRP producer.

Token Profile WSS 1.0 SAML Token

Default User

The Token Profile in the Security section of this page must be set to WSS 1.0 SAML Token to support the Services Producer. You should also enter a suitable execution timeout for requests made by Pagelet Producer to the Services Producer (the default is 30 seconds).

Once registration is complete, the Services Producer will appear as a resource in the Pagelet Producer Administrative Console and all WSRP portlets exposed by the Producer will be listed in the pagelets collection for the resource:



Services Producer (WSRP Producer)

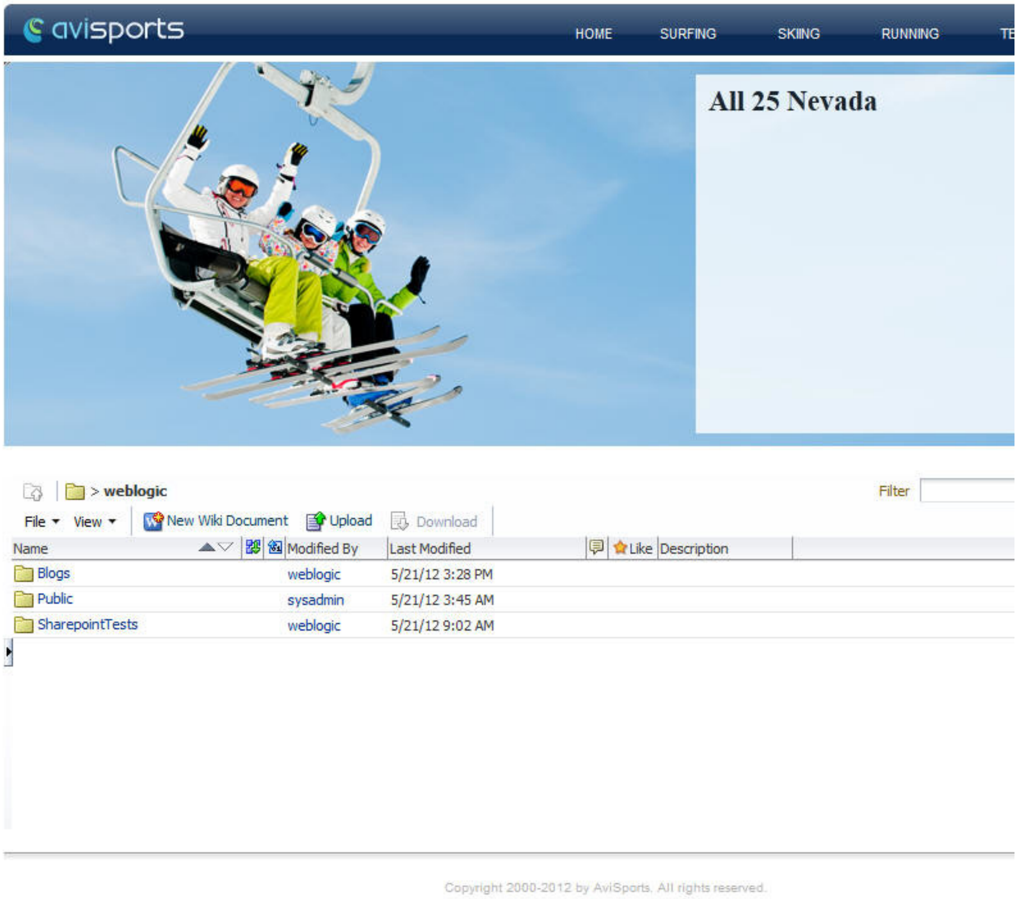
Activity Stream, Mail, Document Manager, Tag Cloud, Worklist, Announcements, Discussion Forums, Polls Manager, Lists, Blogs, Take Polls

62.8.6.3.1 Adding Pagelets to Sites Pages

Any pagelet exposing WebCenter Services can be added to a WebCenter Sites page following the steps described in Adding Pagelets to Oracle WebCenter Sites. Figure 62–59 shows the Document Manager Service embedded into a page of the AviSports sample site in WebCenter Sites.

Note: Auto-generated WSRP resources and pagelets such as the ones associated with the Services Producer cannot be modified. To add an Injector or make other modifications, you must create a version that can be edited. Choose the resource in the Pagelet Producer Administrative Console and click **Copy**. The cloned version of the resource can be edited and various elements such as Injectors can be added to customize pagelet functionality.

Figure 62–59 AviSports Sample Site with Document Embedded



Name	Modified By	Last Modified	Like	Description
Blogs	weblogic	5/21/12 3:28 PM		
Public	sysadmin	5/21/12 3:45 AM		
SharepointTests	weblogic	5/21/12 9:02 AM		

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62.8.7 Consuming Applications as Pagelets Using EBS11i

This section provides detailed instructions for consuming the Oracle E-Business Suite 11i Order Information module UI as a pagelet. It covers autologin, navigation suppression, restyling, and URL rewriting.

This example was created using an EBS 11i instance that is protected with Oracle SSO. The following common terms and variables are used in the example:

- %EBS_HOST%: root URL of the EBS host (for example, `http://my-ebs.company.com:port/`)
- %OSSO_HOST%: root URL of the OSSO host (for example, `http://sso.company.com:port/`)

This section contains the following subsections:

- Section 62.8.7.1, "Creating a Resource for Basic URL Mapping (Proxy)"
- Section 62.8.7.2, "Configuring Autologin"
- Section 62.8.7.3, "Creating a Pagelet"
- Section 62.8.7.4, "Making Corrective Configurations"

62.8.7.1 Creating a Resource for Basic URL Mapping (Proxy)

The following steps set up the basic URL mapping for a new EBS resource in Pagelet Producer:

1. Create new "Web" resource with the following settings:
   - Name: EBS 11 (or your choice)
   - Source URL: %EBS_HOST%

     Make sure the URL is not more specific to avoid missing URLs used in the UI
   - Destination URL: /ebs11/ (or your choice)
   - URL Rewriting: on
   - DHTML Rewriting: on
2. Click **Save**.

62.8.7.2 Configuring Autologin

This step assumes that the EBS System is protected by OSSO and that Pagelet Producer will be configured to provide form Autologin rather than participate in SSO (a common scenario if the Web site is not protected by SSO). EBS credentials may be shared for all users (useful for testing) or stored in the Pagelet Producer credential vault for each user.

1. Create a new "Web" resource with the following settings:
   - Name: OSSO (or your choice)
   - Source URL: %OSSO_HOST%
   - Destination URL: /osso/ (or your choice)
   - URL Rewriting: on
   - DHTML Rewriting: off
2. Click **Save**.
3. Under the newly created OSSO resource, configure Autologin using the Form Login option as follows:
   - Login Form Identification: URL - %OSSO_HOST%/sso/jsp/login.jsp
   - Form Submit Location: URL - %OSSO_HOST/sso/auth - POST
   - Form Fields:

     appctx: Generated

     locale: Generated

     password: Unsecured or User Vault

     site2pstoretoken: Generated

     ssousername: Unsecured or User Vault

- v: Generated

4. Click **Save**.

> **Note:** The names of login form fields are usually obtained by investigating the HTML source for the login page that protects the backend resource.

62.8.7.3 Creating a Pagelet

This step associates a pagelet with the Order Status page in the EBS Order Information module. To create a new pagelet, select the Pagelets section under the EBS resource you created and click the Create icon. Create the new pagelet with the following settings:

- Name: order_status (or your choice)
- Library: ebs11 (or your choice)
- URL Suffix: OA_HTML/RF.jsp?function_id=1005664&resp_id=22480&resp_appl_id=660&security_group_id=0&lang_code=US
- Refresh Inline: off

You can test the configured pagelet by accessing it via the REST link on the Documentation page. You should be taken to the Sales Order page without logging in (unless the pagelet uses the User Vault to store credentials and you are accessing it for the first time). From this page, you can use Simple Search to locate orders, using '%' as a wildcard character.

62.8.7.4 Making Corrective Configurations

After a pagelet has been created, it often requires additional features (Parser, Injector and/or Clipper) to either address issues with URL re-writing in the proxied markup, or simply to modify the markup for style or to hide unnecessary elements. This section describes corrective configurations that were applied to the sample pagelet that exposes the Order Information UI in EBS.

This section includes the following subsections:

- Section 62.8.7.4.1, "Creating a Pluggable Parser for Popup URL Rewriting"
- Section 62.8.7.4.2, "Creating an Injector to Disable Frame-busting"
- Section 62.8.7.4.3, "Creating an Injector to Auto-Resize the iFrame"
- Section 62.8.7.4.4, "Setting Up Clipping by JavaScript Injection"
- Section 62.8.7.4.5, "Creating an Injector for Pagelet Restyling"
- Section 62.8.7.4.6, "Testing the Pagelets"
- Section 62.8.7.4.7, "Final Result"
- Section 62.8.7.4.8, "Troubleshooting"

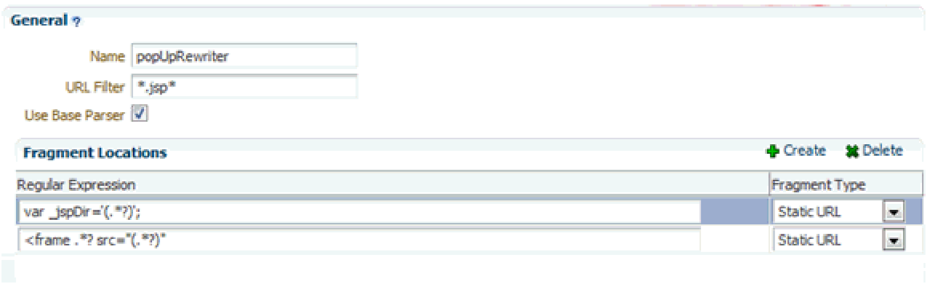
62.8.7.4.1 Creating a Pluggable Parser for Popup URL Rewriting Parsers allow you to supplement or change the built-in logic for parsing content and finding URLs that need to be rewritten. When built-in parsers fail to identify URLs, custom parsers can be used to correct this failure. In the case of the EBS 11i UI, this step is required to fix popup handling in Advanced Search.

Under the EBS Resource, create a new Parser with the following settings:

- Name: popupRewriter (or your choice)
- URL Filter: *.jsp*
- Use Base Parser: on
- Fragment Locations
  - `var _jspDir='(.*?)';` (type Static URL)
  - `<frame .? src="(.?)` (type Static URL)

Figure 62–60 shows the settings for the popupRewriter.

Figure 62–60 popupRewriter



General ?

Name: popUpRewriter

URL Filter: *.jsp*

Use Base Parser ☑

Fragment Locations

Regular Expression	Fragment Type
var _jspDir='(.*?)';	Static URL
<frame .*? src="(.*?)"	Static URL

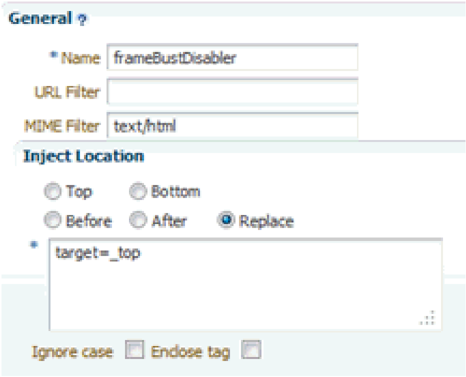
62.8.7.4.2 Creating an Injector to Disable Frame-busting Injectors insert content into a specified location in the proxied resource page. The content can be any text, including HTML, CSS, JavaScript, and pagelet declarations. An empty injector may also be used to remove unwanted content from the page. The following injector was created for the EBS pagelet to prevent it from taking over the page, which was happening on the first displayed page where the user is asked to choose responsibility.

Under the EBS resource create a new Injector with the following settings:

- General
  - Name: frameBustDisabler
  - URL Filter: <none>
  - MIME Filter: text/html
  - Inject Location: Replace `target=_top`
- Content: (Text) `alt=''`

Figure 62–61 shows the parameter settings for the new Injector.

Figure 62–61 frameBustDisabler Injector



General ?

* Name: frameBustDisabler

URL Filter:

MIME Filter: text/html

Inject Location

○ Top ○ Bottom

○ Before ○ After ● Replace

* target=_top

Ignore case □ Enclose tag □

62.8.7.4.3 Creating an Injector to Auto-Resize the iFrame In order to provide a more seamless integration into the consuming page, the pagelet iFrame can be configured to behave more like inline content by dynamically resizing to accommodate its contents. For details, see Enabling IFrame Auto-Resizing in this document.

62.8.7.4.4 Setting Up Clipping by JavaScript Injection One option for suppressing page elements exposed as a pagelet is to create a clipper using graphical or Regular Expression-based clipping, available in Pagelet Producer. However, the recommended approach is to use custom JavaScript that is injected into the proxied page. This approach is often more flexible as it can easily accommodate the need to dynamically adjust rules that identify the element(s) to suppress or accommodate rules for suppressing multiple elements on the page.

Custom JavaScript can be added to the proxied resource page using an injector. To suppress EBS 11i standard header and navigation elements, use the following injector definition to insert a snippet of JavaScript that hides the unnecessary elements at page load time. (The standard Clipper feature in Pagelet Producer is not used due to the complexity of the EBS Web UI.)

Under the EBS Resource, create a new Injector with the following settings:

- General:
  - Name: nav_suppressor (or your choice)
  - URL Filter: <none>
  - MIME Filter: text/html
  - Inject Location: Before `</body>`
- Content: (Text - copy and paste the content below)

```
<script type="text/javascript">
// this script is injected into the page by ensemble
// it hides header and footer tables at page load

// register handler function to the page load event
if (window.addEventListener) {
  window.addEventListener('load', hideHeaderFooter, false);
} else if (document.attachEvent) {
  window.attachEvent('onload', hideHeaderFooter);
}

// this function does the actual hiding
function hideHeaderFooter() {
  var form = document.forms[0];
  if (typeof(form) == 'undefined') return;
  // main span is form's second child span
  var spansFound = 0;
  var mainSpan = null;
  for (var i = 0; i < form.childNodes.length; i++) {
    var child = form.childNodes[i];
    if (child.tagName && child.tagName.toLowerCase() == 'span') {
      if (++spansFound == 2) {
       mainSpan = child;
       break;
      }
    }
  }
  if (typeof(mainSpan) != "undefined" && mainSpan != null) {
    for (var i = 0; i < mainSpan.childNodes.length; i++) {
      var child = mainSpan.childNodes[i];
       if (child.tagName && child.tagName.toLowerCase() == 'table') {
         child.style.display = 'none';
       }
    }
  }
}
// call this function directly
hideHeaderFooter();
</script>
```

62.8.7.4.5 Creating an Injector for Pagelet Restyling

To make the EBS pagelet fit better visually in the consuming page, an injector can be used to add styles to override the original CSS.

The example injector definition below shows how to implement restyling for the AviSports sample Web site in WebCenter Sites.

> **Note:** In order for the override to work correctly, it is important that the style definitions supplied by the injector come after the styles defined by the backend application. In the example below, the content is injected into the end of the `<HEAD>` section on the page.

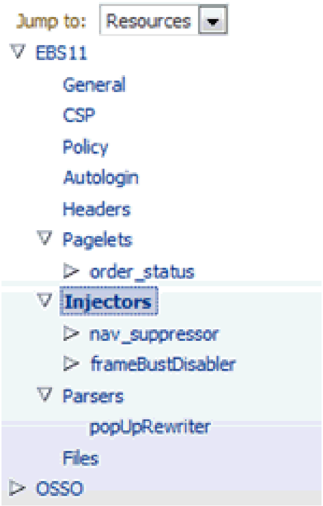
Under the EBS Resource, create a new Injector with the following settings:

- General:
  - Name: avisports_styles
  - URL Filter: <none>
  - MIME Filter: text/html
  - Inject Location: Before `</head>`
- Content: (Text - copy and paste the content below)

```
<style>
* {
  font: 11px Arial,Helvetica,sans-serif;
}
body {
  background: url("http://sites-host:port/cs/avisports/images/BlueSliver.png")
repeat-x scroll center bottom transparent;
}
.OraTableCellText, .x1l, .OraTableCellNumber, .x1n, .OraTableCellIconButton,
.x1p, .OraTableCellSelect, .x55,
.OraTableControlBarTop, .x1i, .OraTableControlBarBottom, .x1j {
    background-color: #eceef1;
    border-color: #0b2a55;
}
.OraTableColumnHeader, .x1r, .OraTableSortableColumnHeader, .x20,
.OraTableSortableHeaderLink, .x23 {
    background-color: #0b2a55;
    border-color: #F7F7E7;
    color: #336699;
}
.OraTableHeaderLink, .x24, .OraTableColumnHeaderNumber, .x1s,
.OraTableColumnHeaderIconButton, .x1t {
    background-color: #0b2a55;
    color: #ffffff;
}
.p_InContextBrandingText, .x2l, .OraHGridNavRowInactiveLink, .x3v,
.OraNavBarInactiveLink, .x42,
.OraBINavBarInactiveLink, .x7n, .OraBINavBarInactiveLink_small, .x7o {
    color: #000000;
}
.OraLink:link, .xd:link, .OraBreadCrumbs, .xh, .OraBulletedList a, .xj a,
.OraLinkText, .x2v,
.OraHGridNavRowActiveLink, .x3u, .OraNavBarActiveLink, .x41,
.OraBINavBarActiveLink, .x7l, .OraBINavBarActiveLink_small, .x7m {
    color: #0b2a55;
}
.OraBreadCrumbs a, .xh a {
    color: #0b2a55;
}
</style>
```

62.8.7.4.6 Testing the Pagelets The EBS11 resource now includes the pagelet, the custom injectors, and the custom parser as shown in Figure 62–62.

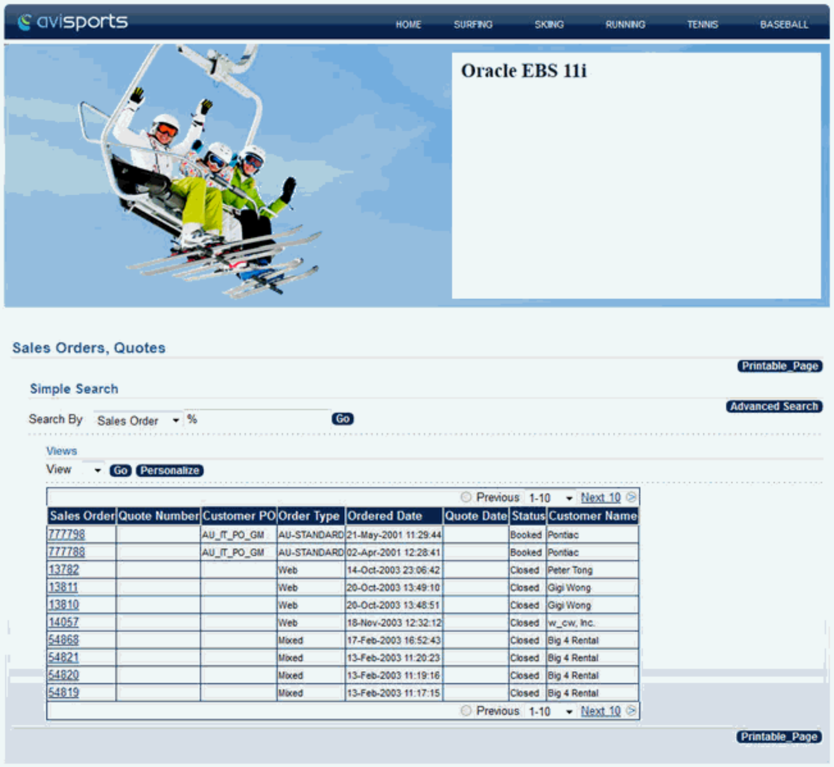
Figure 62–62 EBS11 Project Resources



Test the pagelet by browsing to the Documentation page and using the URL shown below, substituting the local host ID for "example.com."

```
http://example.com:8889/pagelets/inject/v2/pagelet/ebs11/order_
status?content-type=iframe&csapi=true&ifheight=300px
```

62.8.7.4.7 Final Result The following screenshots show the EBS 11i Order Information screens embedded into a page of the AviSports sample site in WebCenter Sites using a REST URL for pagelet access in an iFrame:



Oracle EBS 11i

Sales Orders, Quotes

Simple Search

Search By Sales Order %

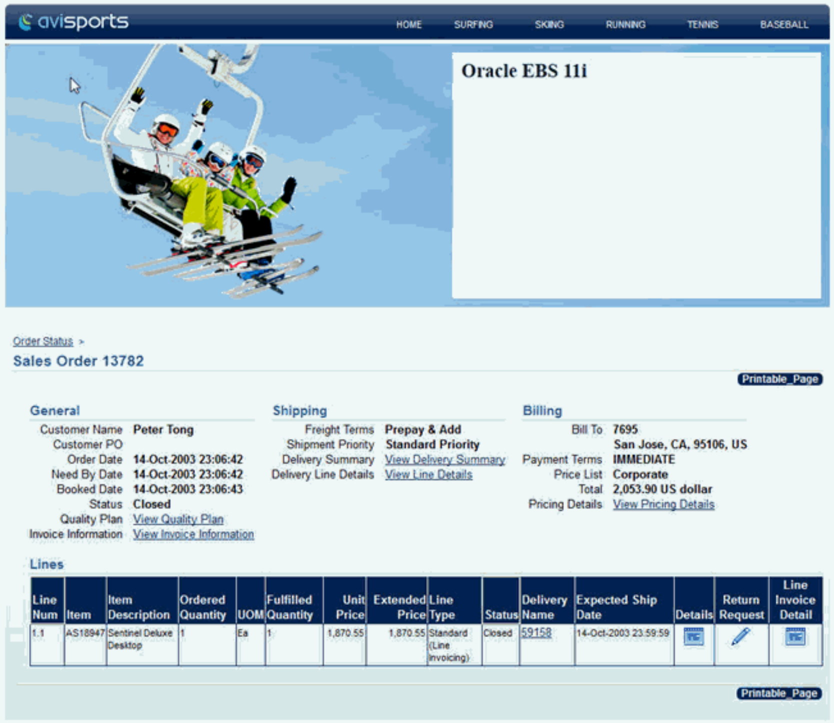
Views

View

○ Previous 1-10 Next 10

Sales Order	Quote Number	Customer PO	Order Type	Ordered Date	Quote Date	Status	Customer Name
777798		AU_IT_PO_GM	AU-STANDARD	21-May-2001 11:29:44		Booked	Pontiac
777788		AU_IT_PO_GM	AU-STANDARD	02-Apr-2001 12:28:41		Booked	Pontiac
13782			Web	14-Oct-2003 23:06:42		Closed	Peter Tong
13811			Web	20-Oct-2003 13:49:10		Closed	Gigi Wong
13810			Web	20-Oct-2003 13:48:51		Closed	Gigi Wong
14057			Web	18-Nov-2003 12:32:12		Closed	w_cw, Inc.
54868			Mixed	17-Feb-2003 16:52:43		Closed	Big 4 Rental
54821			Mixed	13-Feb-2003 11:20:23		Closed	Big 4 Rental
54820			Mixed	13-Feb-2003 11:19:16		Closed	Big 4 Rental
54819			Mixed	13-Feb-2003 11:17:15		Closed	Big 4 Rental

○ Previous 1-10 Next 10



Oracle EBS 11i

Order Status >

Sales Order 13782

General

Customer Name	Peter Tong
Customer PO	
Order Date	14-Oct-2003 23:06:42
Need By Date	14-Oct-2003 23:06:42
Booked Date	14-Oct-2003 23:06:43
Status	Closed
Quality Plan	View Quality Plan
Invoice Information	View Invoice Information

Shipping

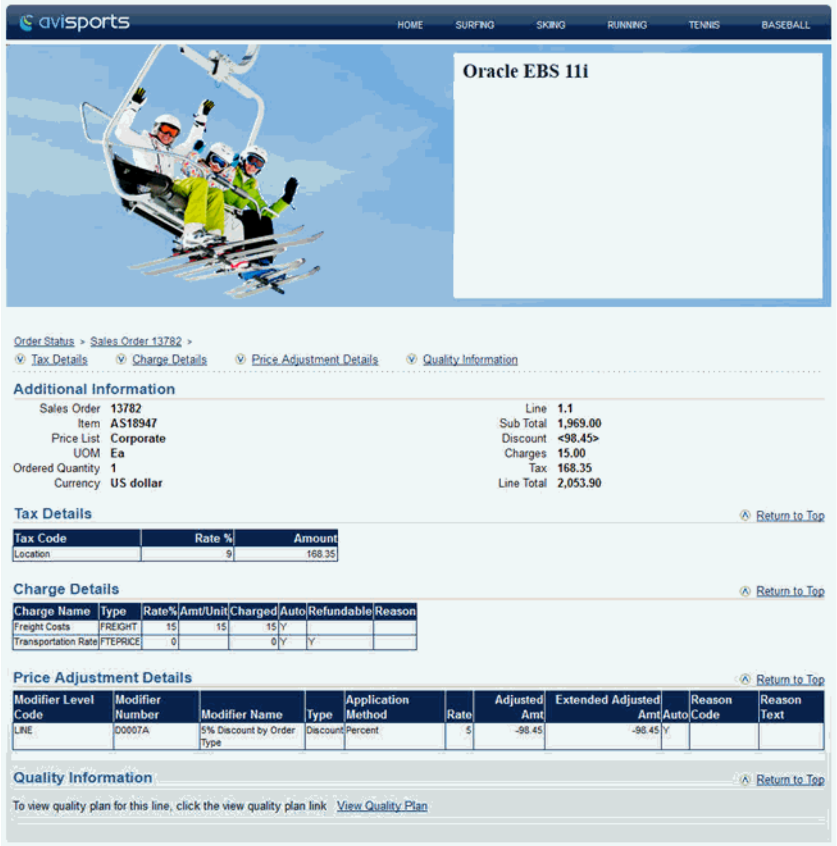
Freight Terms	Prepay & Add
Shipment Priority	Standard Priority
Delivery Summary	View Delivery Summary
Delivery Line Details	View Line Details

Billing

Bill To	7695 San Jose, CA, 95106, US
Payment Terms	IMMEDIATE
Price List	Corporate
Total	2,053.90 US dollar
Pricing Details	View Pricing Details

Lines

Line Num	Item	Item Description	Ordered Quantity	UOM	Fulfilled Quantity	Unit Price	Extended Price	Line Type	Status	Delivery Name	Expected Ship Date	Details	Return Request	Line Invoice Detail
1.1	AS18947	Sentinel Deluxe Desktop	1	Ea	1	1,870.55	1,870.55	Standard (Line invoicing)	Closed	59158	14-Oct-2003 23:59:59	▦	✎	▦



Oracle EBS 11i

Order Status > Sales Order 13782 >

Tax Details   Charge Details   Price Adjustment Details   Quality Information

Additional Information

Sales Order	13782	Line	1.1
Item	AS18947	Sub Total	1,969.00
Price List	Corporate	Discount	<98.45>
UOM	Ea	Charges	15.00
Ordered Quantity	1	Tax	168.35
Currency	US dollar	Line Total	2,053.90

Tax Details   Return to Top

Tax Code	Rate %	Amount
Location	9	168.35

Charge Details   Return to Top

Charge Name	Type	Rate%	Amt/Unit	Charged	Auto	Refundable	Reason
Freight Costs	FREIGHT	15	15	15	Y		
Transportation Rate	FTEPRICE	0		0	Y	Y	

Price Adjustment Details   Return to Top

Modifier Level Code	Modifier Number	Modifier Name	Type	Application Method	Rate	Adjusted Amt	Extended Adjusted Amt	Auto	Reason Code	Reason Text
LINE	D0007A	5% Discount by Order Type	Discount	Percent	5	-98.45	-98.45	Y		

Quality Information   Return to Top

To view quality plan for this line, click the view quality plan link View Quality Plan

62.8.7.4.8 Troubleshooting If some images are not rendered properly, make sure DHTML rewriting is enabled. (The DHTML Rewriting setting is on the General page for the resource.)

62.8.8 Consuming OpenSocial Gadgets Using Pagelet Producer

Pagelet Producer is an OpenSocial container that exposes the following features:

- People (exposes People Connections)
- Activities (exposes Activity Stream)
- Appdata (supports gadget personalization)
- Pub-Sub mechanism

Note that the People and Activities features require WebCenter Portal. To use the People or Activities features, target the WebCenterDS at the `WC_Portlet` managed server (i.e., at Pagelet Producer). For Appdata, Pagelet Producer supports user, instance and pagelet -scoped preferences.

To follow the example:

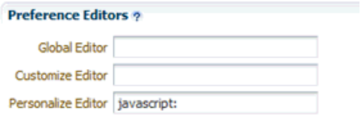
1. Open Pagelet Producer and create a new OpenSocial resource.
2. Define the URLs and policies as required.
3. Create a new pagelet specifying the URL for an external gadget.

   For example:

   ```
   http://bayareacoder.com/gogo/localweather/localweather.xml
   ```

4. If the gadget supports Preferences, configure the required parameters (see Figure 62–63 and Figure 62–64).

Figure 62–63 Preferences Editor



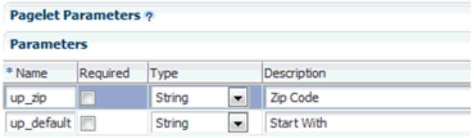
Preference Editors ?

Global Editor:

Customize Editor:

Personalize Editor: javascript:

Figure 62–64 Pagelet Parameters Dialog



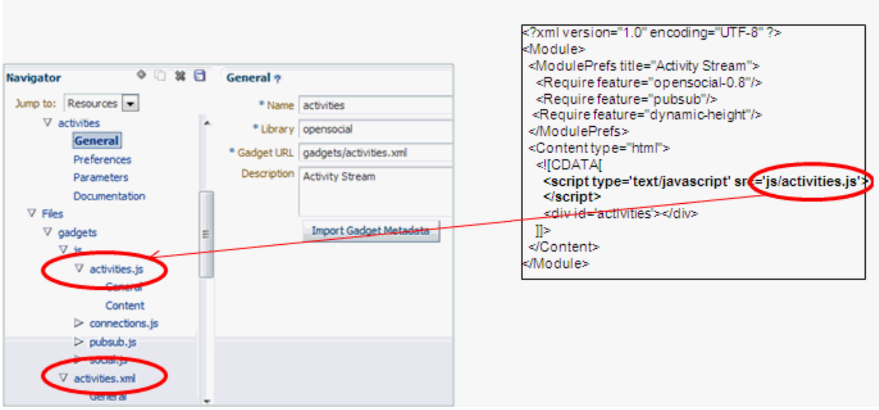
Pagelet Parameters ?

Parameters

* Name	Required	Type	Description
up_zip	□	String	Zip Code
up_default	□	String	Start With

5. Create or upload the gadget XML file (see Figure 62–65).

Figure 62–65 Pagelet Producer with Activities JavaScript and XML Options



General ?

* Name: activities

* Library: opensocial

* Gadget URL: gadgets/activities.xml

Description: Activity Stream

```
<?xml version="1.0" encoding="UTF-8" ?>
<Module>
 <ModulePrefs title="Activity Stream">
   <Require feature="opensocial-0.8"/>
   <Require feature="pubsub"/>
  <Require feature="dynamic-height"/>
 </ModulePrefs>
 <Content type="html">
   <![CDATA[
    <script type='text/javascript' src='js/activities.js'>
    </script>
    <div id='activities'></div>
   ]]>
 </Content>
</Module>
```

Note that the path supplied in the **Name** field is a 'virtual' URL that Pagelet Producer will use to serve the file and any path or name can be used.

6. Create or upload any other files that the new gadget requires (for example, any JavaScript files, images, and so forth), and you're done.

62.8.9 Manipulating HTML Markup

This section discusses how you can inject JavaScript to modify HTML markup, and use an injector with SSL.

This section includes the following subsections:

- Section 62.8.9.1, "Using an Injector with JavaScript"
- Section 62.8.9.2, "Using an Injector with SSL"

62.8.9.1 Using an Injector with JavaScript

Injecting and/or replacing just HTML markup has limited potential. A more useful approach to consider is injecting JavaScript that directly modifies HTML markup. To do so:

- Register a handler function on the page load event as shown in the following code snippet:

```
if (window.addEventListener) {
  window.addEventListener('load', hideHeaderFooter, false);
} else if (document.attachEvent) {
  window.attachEvent('onload', hideHeaderFooter);
}
```

- Use the handler to do the markup manipulation as shown in the rest of the code sample:

```
function hideHeaderFooter() {
  var header = null;
  // find the header table by class
  if (document.getElementsByClassName) {
    header = document.getElementsByClassName('page_header')[0];
  } else {
    // for older versions of IE
    var tables = document.getElementsByTagName('table');
    for (var table in tables) {
      if (table.class == 'page_header') {
        header = table;
        break;
      }
    }
  }
  if (header != null) {
    header.style.display = 'none';
  }
  // now find and hide the footer (easier to find, since it has an id)
  var footer = document.getElementById('t23PageFooter');
  if (footer != null) {
    footer.style.display = 'none';
  }
}
</script>
```

62.8.9.2 Using an Injector with SSL

Consuming an SSL resource requires a Pagelet Producer connection over HTTPS, including:

- Secure port mapping between WLS and Pagelet Producer
- Container should also be accessed via HTTPS

The injector can modify HTML markup that Pagelet Producer proxies:

- Based on URL pattern (resource scope)
- Based on MIME type
- Based on location (top or bottom) or exact text match (before, after, replace)
- Content page defines what gets injected

62.8.10 Advanced URL Rewriting

This section describes how to use Pagelet Producer's auto-login feature, and how to design a custom parser.

This section contains the following sub-sections:

- Section 62.8.10.1, "Using Auto-Login"
- Section 62.8.10.2, "Using a Custom Parser"

62.8.10.1 Using Auto-Login

Auto-login lets you pass username/password credentials to a back-end resource. These can be passed as either:

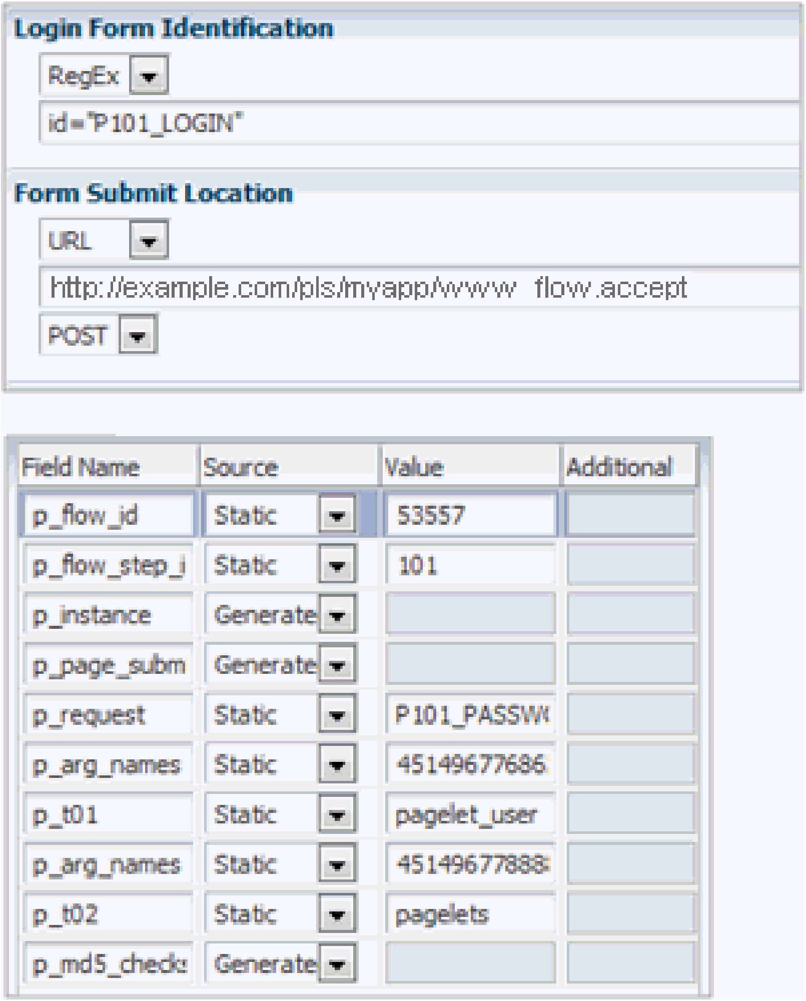
- Static credentials – one set for all users
- Dynamically acquired from user at first resource access and then stored in secure Credential Vault
- User Profile (capture and pass username)

The supported authentication mechanisms for auto-login are:

- Basic login
- Form login (used in the following example)
- NTLM login
- Kerberos login

The example in Figure 62–66 and the code snippet below shows how you can use auto-login to redirect to a login page:

Figure 62–66 Pagelet Producer - Auto-Login Example



Login Form Identification

RegEx

id="P101_LOGIN"

Form Submit Location

URL

http://example.com/pls/myapp/wwv_flow.accept

POST

Field Name	Source	Value	Additional
p_flow_id	Static	53557	
p_flow_step_i	Static	101	
p_instance	Generate		
p_page_subm	Generate		
p_request	Static	P101_PASSW(	
p_arg_names	Static	45149677686	
p_t01	Static	pagelet_user	
p_arg_names	Static	45149677888	
p_t02	Static	pagelets	
p_md5_check	Generate		

The following code reflects the settings in Figure 62–66:

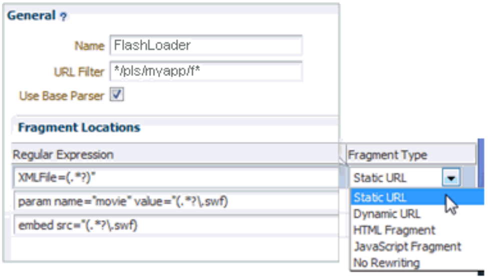
```
<form action="wwv_flow.accept" method="post" name="wwv_flow" id="wwvFlowForm"
autocomplete="off">
 <input type="hidden" name="p_flow_id" value="53557" id="pFlowId" />
<input type="hidden" name="p_flow_step_id" value="101" id="pFlowStepId" />
<input type="hidden" name="p_instance" value="724836084846701" id="pInstance" />
<input type="hidden" name="p_page_submission_id" value="1431956852758801"
id="pPageSubmissionId" />
<input type="hidden" name="p_request" value="" id="pRequest" />
<div id="login"> <div id="messages"></div> <div id="login-main">
<table id="myapp_layout_45149677586857064102" border="0" class="formlayout"
summary="" role="presentation" datatable=0 >
<tr><td align="right"><label for="P101_USERNAME" tabindex="999"><a
class="optional-w-help"
href="javascript:popupFieldHelp('45149677686365064111','724836084846701')"
tabindex="999">
User Name</a></label></td> <td colspan="1" rowspan="1" align="left"><input
type="hidden" name="p_arg_names" value="45149677686365064111" /><input type="text"
id="P101_USERNAME" name="p_t01" value="" size="20" maxlength="100" class="text_
field" /></td></tr><tr><td align="right"><label for="P101_PASSWORD"
tabindex="999"><a class="optional-w-help"
href="javascript:popupFieldHelp('45149677888869064121','724836084846701')"
tabindex="999">Password</a></label></td> <td colspan="1" rowspan="1"
```

```
align="left"><input type="hidden" name="p_arg_names"
value="45149677888869064121"/>
<input type="password" name="p_t02" size="20" maxlength="100" value="" id="P101_
PASSWORD" class="password" onkeypress="return submitEnter(this,event)" />
<input type="button" value="Login"onclick="myapp.submit('LOGIN');" id="P101_LOGIN"
/>
</td></tr> </table> Please refer to "Using Myapp" in the Myapp User's Guide for
more information.</div>
</div> <input type="hidden" name="p_md5_checksum" value="" /><input type="hidden"
 name="p_page_checksum" value="D95DBE8607E971820E98E93FC0EC064E" /></form>
```

62.8.10.2 Using a Custom Parser

Parsers let you extend or change built-in logic for URL parsing. Using a **URL Filter** and regular expressions, you can narrow down the part of the page that the parser should modify (Figure 62–67).

Figure 62–67 Pagelet Producer - Custom Parser Example



General ?

Name: FlashLoader

URL Filter: */pls/myapp/f*

Use Base Parser ☑

Fragment Locations

Regular Expression	Fragment Type
XMLFile=(.*?)"	Static URL
param name="movie" value="(.*?\.swf)	
embed src="(.*?\.swf)	

Using regular expressions lets you specify the HTML fragment to parse. The first grouping expression, denoted by parentheses, identifies the fragment itself, while the rest of the expression provides the context for finding it. A pluggable parser framework lets you fine-tune how the proxy recognizes different types of content based on MIME type, HTTP headers or URL.

In this example, there are three URLs in two places within the page markup that need to be modified to make Flash work:

```
<embed src=" /i/flashchart/anychart_5/swf/OracleAnyChart.swf?
XMLFile=http://example.com/pls/myapp/myapp_
util.flash?p=53557:1:74175370346201:FLOW_FLASH_CHART5_R45192463162785599619_en"
      <param name="movie" value="/i/flashchart/anychart_5/swf/AnyChart.swf?
XMLFile=http://example.com/pls/myapp/myapp_
util.flash?p=53557:1:74175370346201:FLOW_FLASH_CHART5_R45192463162785599619_en"
```

The following three regular expressions (shown under Regular Expressions in Figure 62–67) are used to achieve this:

- `XMLFile=(.*?)"`
- `param name="movie" value="(.*?\.swf)`
- `embed src="(.*?\.swf)`

62.9 Troubleshooting Pagelets

Keep the following common configuration errors in mind when troubleshooting resources and pagelets. For details on configuring Pagelet Producer settings, see Section 62.2, "Configuring Pagelet Producer Settings."

- If you are using SSL, make sure both HTTP (nonsecure) and HTTPS (secure) ports are configured properly on the Transform page of the Pagelet Producer settings.
- If you are proxying external sites on a network that requires an HTTP proxy, you must configure the proxy URL on the Proxy page of the Pagelet Producer settings.
- Confirm that the `login_resource` and `pagelet_api` resources, created by default, are present and correctly configured.
- If you are proxying KD Browser or other CSP pagelets, make sure the image service URL is absolute and the CSP SOAP API URL is set correctly in the CSP page of the Pagelet Producer settings.
- Due to restrictions in the Sun Java Virtual Machine (JVM), pagelets cannot use HTTPS content where the underlying certificate uses MD2 signing algorithm.

For additional troubleshooting information, use logging. Pagelet Producer logs messages to the standard Oracle Diagnostic Logging facility. In Oracle WebLogic Server, that location is: `user-projects/domains/<domain>/servers/<server>/logs/<server>-diagnostic.log`. For details on configuring logging, see Section 62.2.2, "Configuring Logging Settings." For more information on debugging pagelets, see the "Creating Pagelets with Oracle WebCenter Portal's Pagelet Producer" chapter in *Developing Portals with Oracle WebCenter Portal and Oracle JDeveloper*.

63 Consuming Portlets

This chapter describes how to add portlets to the pages of your WebCenter Portal Framework applications and the options that accompany this process.

This chapter includes the following topics:

- Section 63.1, "Introduction to Consuming Portlets"
- Section 63.2, "Registering Portlet Producers with a WebCenter Portal Framework Application"
- Section 63.3, "Managing Portlet Producer Connections"
- Section 63.4, "Adding the Portlet Producer Task Flow"
- Section 63.5, "Adding Portlets to a Page"
- Section 63.6, "Setting Attribute Values for the Portlet Tag"
- Section 63.7, "Manually Wiring Parameters and Events in JSR 286 Portlets"
- Section 63.8, "Copying Portlets"
- Section 63.9, "Deleting Portlets from Application Pages"
- Section 63.10, "Consuming WebCenter Services Portlets"
- Section 63.11, "Troubleshooting Portlets"

This chapter does not cover Oracle JDeveloper or Oracle ADF page creation basics. It covers only those aspects of page creation that are specific to Portal Framework application pages. Therefore, you should familiarize yourself with the information covered in the *Web User Interface Developer's Guide for Oracle Application Development Framework* before reading this chapter.

For information about creating portlets, which can then be consumed by Portal Framework application pages, see the following chapters:

- Chapter 57, "Introduction to Portlets"
- Chapter 58, "Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge"
- Chapter 59, " Building Standards-Based Java Portlets Using JSR 286"

63.1 Introduction to Consuming Portlets

Oracle WebCenter Portal Framework enables you to consume a portlet by registering its producer with the application. Your application can consume portlets that you build using WebCenter Portal or other Oracle products, and portlets that you receive from a third party, such as a packaged-application vendor. Table 63–1 lists some of the products supported as portlet producers within WebCenter Portal.

Table 63–1 Supported Portlet Producers

Portlet Producer	Supported?	Notes
Oracle WebLogic Portal	Yes	For more information, see the "Exporting Java Portlets for Use on Other Systems" section in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.
Oracle WebCenter Interaction	N/A	
Oracle Portal	Yes	For more information, see Section F.2, "Reusing Portlets."
E-Business Suite application	Yes	For more information, see Section 54.3, "Integrating E-Business Suite Applications."
PeopleSoft application	Yes	For more information, see Section 54.5, "Integrating PeopleSoft Applications."
JD Edwards application	Yes	For more information, see Section 54.4, "Integrating JD Edwards Applications."

Note: WSRP producers built by a third party and consumed by WebCenter Portal should function correctly provided:

- The producer does not rely on any vendor-specific extensions to WSRP.
- The portlets do not make assumptions about the application in which they are consumed, for example by expecting a particular JavaScript method to exist in the page.

You can register portlet producers in two ways:

- Register the portlet producer with a specific application. Use this option if you are not likely to want to register the producer with other applications.
- Register the portlet producer using the Resource Palette. Use this option to use the producer's portlets in multiple applications.

A portlet that is available in the Resource Palette can be added to any of your Portal Framework applications by dropping it on the page as you would any other component. When you add a portlet from the Resource Palette, its producer gets registered with the application if that producer is not already registered with the application. You can drag and drop a whole producer connection from the Resource Palette into the Application Resources panel of the Application Navigator. This registers the producer with the application. Alternatively, you can right-click a producer in the Resource Palette and choose **Add to Application** from the context menu to register the producer with the currently open application.

JDeveloper provides wizards for registering both WSRP producers and Oracle PDK-Java producers.

Note: If your application is source controlled, you must manually create elements in the source control system for any new files created during producer registration. Any files that are already source controlled are checked out automatically by the producer registration process.

There are many options associated with portlet consumption. For example, you can choose to place portlets straight onto a page or nest them in a Composer component, you can adjust many attributes of the portlet tag, and you can wire portlets to each other.

63.2 Registering Portlet Producers with a WebCenter Portal Framework Application

This section includes the following topics:

- Section 63.2.1, "Registering a WSRP Portlet Producer with a WebCenter Portal Framework Application"
- Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application"

63.2.1 Registering a WSRP Portlet Producer with a WebCenter Portal Framework Application

When you register a WSRP portlet producer, you provide basic information that describes the producer's operational parameters. This information is used by the portlet-consuming application to communicate with the producer and with the portlets through the producer.

WebCenter Portal Framework supports both WSRP 1.0 and WSRP 2.0 producers. The WSRP 2.0 standard, among others, provides support for inter-portlet communication and export and import of portlet customizations. You can leverage the benefits of WSRP 2.0 while building standards-based JSR 286 portlets.

This section includes the following topics:

- Section 63.2.1.1, "How to Register a WSRP Portlet Producer"
- Section 63.2.1.2, "How to Map a Producer's Declared User Categories to an Application's Defined Java EE Security Roles"

63.2.1.1 How to Register a WSRP Portlet Producer

The Register WSRP Portlet Producer wizard is the entry point for registering both WSRP 1.0 and 2.0 producers. When registration is successful, the newly registered producer displays in JDeveloper either in the Application Resources panel of the Application Navigator, or in the Resource Palette, depending on where you created the connection. You can then select portlets from the producer for placement on your application (`.jspx`) pages.

Note: If you are registering a producer provided by Oracle WebLogic Portal, and the portlet uses ADF Rich Components, you should register the WSRP 2.0 WSDL URL to ensure that the portlet functions correctly.

You also use the Register WSRP Portlet Producer wizard to register JSF portlets, which are portletized JSF applications or portletized ADF task flows. Once you create a portlet from a JSF application, you can deploy the portlet to a WLS instance and register the JSF portlet producer as you would register any WSRP portlet producer. The Oracle JSF Portlet Bridge exposes JSF applications and task flows as JSR 286 portlets. For more information, see Chapter 58, "Creating Portlets from JSF Applications Using the Oracle JSF Portlet Bridge."

To register a WSRP portlet producer:

> **Note:** In the Register WSRP Portlet Producer wizard, if you click **Cancel** after you have clicked **Finish,** the registration is not canceled.

1. In the Application Resources panel of the Application Navigator, right-click **Connections,** choose **New Connection** and then choose **WSRP Producer.**
2. In the Specify Producer Name page of the Register WSRP Portlet Producer wizard, the **Create Connection in** option is set depending on how you accessed the wizard. The default selection is **Application Resources** if you invoked the wizard from an application, and **Resource Palette** if you invoked the wizard from the Resource Palette. You can change this option at this point.
3. From the **Target Project** dropdown list, select the project to be configured for the WSRP producer connection.

   This should be the same project as the one in which you intend to consume the portlets.

   You can change this option only if you invoked the wizard from the Application Navigator.
4. In the **Producer Registration Name** field, enter a name for the producer registration that is unique among all connections and then click **Next.**
5. In the Specify Connection Details page, in the **WSDL URL** field, enter the producer's URL.

   The syntax varies according to your WSRP implementation, for example, the sample WSRP producer uses the following syntax:

   - `http://`*`host`*`:`*`port`*`/`*`context-root`*`/portlets/wsrp1?WSDL`
   - `http://`*`host`*`:`*`port`*`/`*`context-root`*`/portlets/wsrp2?WSDL`
   - `http://`*`host`*`:`*`port`*`/`*`context-root`*`/portlets?WSDL` (WSRP 1.0 for backward compatibility)

   Where:

   - *`host`* is the server to which your producer has been deployed.
   - *`port`* is the port to which the server is listening for HTTP requests.
   - *`context-root`* is the Web application's context root.
   - `portlets[/wsrp(1|2)]?WSDL` is static text. The text entered here depends on how the producer is deployed.

   For example:

   ```
   http://myhost.example.com:7101/portletapp/portlets/wsrp2?WSDL
   ```

   You can access the producer test page through the URL:

`http://`*`host`*`:`*`port`*`/`*`context-root`*`/info`

6. If the application and the producer are separated by a firewall, an HTTP proxy is needed for communication between the application and the producer. If this is the case for your application, select **Use Proxy for Contacting Producer** and specify the URL and port number of the proxy.

   > **Note:** The proxy fields in this step default to the proxy preferences set in JDeveloper Preferences (from the main menu, choose **Tools > Preferences,** and then select **Web Browser and Proxy**).

7. Click **Next.**

   The connection to the producer is tested. If there are any problems, an error message displays. You must resolve any problems before you can continue.

8. In the Specify Additional Registration Details page, in the **Default Timeout Interval (Seconds)** field, enter the number of seconds to wait for the producer to respond during design time operations.

   Some producers define additional registration properties. In such cases, the properties are displayed in a table on this page of the wizard. You can enter values for these additional properties in the table. These properties are producer-specific and are used only at registration time. That is, they collect information that consumer applications send to producers at registration time; the producers store this information against the consumers and use it subsequently.

9. If you are registering the producer in the Resource Palette, click **Finish** to complete the registration.

   If you are registering the producer in the Application Resources panel, and plan to request authentication whenever the producer (and consequently, its portlet) is accessed, click **Next** and follow the remaining steps. If you do not want to configure security, click **Finish.**

   If the producer declares user categories, when you click **Finish,** the Register WSRP Portlet Producer dialog displays. Click **Yes** and see Section 63.2.1.2, "How to Map a Producer's Declared User Categories to an Application's Defined Java EE Security Roles." Click **No** to decline this opportunity and complete the registration process.

   > **Note:** If you decline to map the user categories to security roles at this point, you can do so later by editing the producer registration.

10. In the Configure Security Attributes page, from the **Token Profile** dropdown list, select the type of token profile to use for authentication with the WSRP producer:

    - **None**—No token; no WS-Security header is attached to the SOAP message.

      If you select this option, you do not want to complete the rest of the wizard. Click **Finish.**

    - **WSS 1.0 SAML Token with Message Integrity**—Provides message-level integrity protection and SAML-based authentication for outbound SOAP requests in accordance with the WS-Security 1.0 standard. A SAML token, included in the SOAP message, is used in SAML-based authentication with sender vouches confirmation. This policy uses WS-Security's Basic 128 suite of asymmetric key technologies and SHA-1 hashing algorithm for message integrity.

- **WSS 1.0 SAML Token with Message Protection**—Provides message-level protection (integrity and confidentiality) and SAML-based authentication for outbound SOAP requests in accordance with the WS-Security 1.0 standard. The Web service consumer includes a SAML token in the SOAP header and the confirmation type is sender-vouches. This policy uses WS-Security's Basic 128 suite of asymmetric key technologies. Specifically, RSA key mechanisms for message confidentiality, SHA-1 hashing algorithm for message integrity, and AES-128 bit encryption.

  When you select this policy, you must also specify the **Recipient Alias**.

- **WSS 1.0 User Name Token without Password**—Provides username (with password) token profile based identity propagation with certificate based message protection for outbound SOAP requests in accordance with the WS-Security v1.0 standard. Both plain text and digest mechanisms are supported. This policy uses WS-Security's Basic128 suite of asymmetric key technologies. Specifically, RSA key mechanism for message confidentiality, SHA-1 hashing algorithm for message integrity, and AES-128 bit encryption.

  Use this token profile if the WSRP producer has a different identity store. You must define an external application pertaining to the producer and associate the external application with this producer. The external application defined here is used to retrieve and propagate the user credentials to the producer. The producer verifies this against the identity store configured for the external application.

  When you select this policy, you must also specify the **Recipient Alias**.

- **WSS 1.0 User Name Token with Password**—provides username (with password) token profile based identity propagation with certificate based message protection for outbound SOAP requests in accordance with the WS-Security 1.0 standard. Credentials (username only) are included in outbound SOAP request messages through a WS-Security UsernameToken header. No password is included. Message protection is provided using WS-Security 1.0's Basic128 suite of asymmetric key technologies. Specifically, RSA key mechanisms for message confidentiality, SHA-1 hashing algorithm for message integrity, and AES-128 bit encryption.

  When you select this policy, you must also specify the **Recipient Alias**.

- **WSS 1.0 SAML Token**—Provides SAML-based authentication for outbound SOAP request messages in accordance with the WS-Security 1.0 standard. The policy propagates user identity and is typically used in intra departmental deployments where message protection and integrity checks are not required.

  This policy does not require any keystore configuration.

- **WSS 1.1 SAML Token with Message Protection**—Provides message-level protection (integrity and confidentiality) and SAML token population for outbound SOAP requests in accordance with the WS-Security 1.1 standard. A SAML token, included in the SOAP message, is used in SAML-based authentication with sender vouches confirmation. This policy uses the symmetric key technology for signing and encryption, and WS-Security's Basic128 suite of asymmetric key technologies for endorsing signatures.

11. Select the configuration type:

- **Default**—If you choose default, then all the default keystore attributes, that is location, password, keystore type, signature key and alias, encryption key and alias are picked up from the JPS (Java Platform Security) configuration. The value for **Recipient Alias** is taken from the policy being used. The WebLogic Server where the application is deployed must be configured for WS-Security. For more information, see the "Securing a WSRP Producer with WS-Security" section in *Administering Oracle WebCenter Portal*.
- **Custom**—If you select this option, then you must enter the appropriate keystore attributes in the next page of the wizard.

12. In the **Default User** field, enter a user name to assert to the remote producer when the user has not authenticated to the Portal Framework application.

    When unauthenticated, the identity `anonymous` is associated with the application user. OWSM does not currently support the propagation of an anonymous identity, so you must specify an alternative identity here. Keep in mind though, that in this case, the Portal Framework application has not authenticated the user so the default user you specify should be a low privileged user in the remote producer that is an appropriate identity to use for showing public content. For example, you may want to create a guest account in the identity store for this purpose. If the user has authenticated to the application, then the user's identity is asserted rather than the default user.

    > **Note:** If you specify a **Default User**, the remote producer must be set up to accept this information.

    The **Default User** field does not appear if you selected **User Name Token with Password.**

13. In the **Issuer Name** field, enter the name of the issuer of the SAML Token, for example `www.oracle.com`.

    This field appears only if you selected an SAML Token option from the **Token Profile** dropdown list, and **Custom** from the **Configuration** options. The issuer name is the attesting entity that vouches for the verification of the subject.

14. Select **Associate Producer with External Application**, then select the application, if this producer must provide authentication to an external application.

    For more information, see Section 74.13.3, "Managing External Applications."

    This option is available only if you selected **User Name Token with Password.**

15. Click **Next.**

    If you selected **Default** as the configuration option, then the fields on the Specify Key Store page are disabled. Click **Finish** to complete the registration.

    If the producer declares user categories, when you click **Finish,** the Register WSRP Portlet Producer dialog displays. Click **Yes** and see Section 63.2.1.2, "How to Map a Producer's Declared User Categories to an Application's Defined Java EE Security Roles." Click **No** to decline this opportunity and complete the registration process.

16. In the Specify Key Store page, in the **Store Path** field, provide the full path to the keystore that contains the certificate and the private key that is used for signing some parts (security token and SOAP message body) of the SOAP message.

    If you are not sure of the full path, click **Browse** to navigate to and select the file. The selected file should be a keystore created with the Java keytool.

17. In the **Store Password** field, provide the password to the keystore that was set when the keystore was created.

    The keystore password must be correct for the **Store Type** field and the **Signature Key Alias** dropdown list to populate.

    If an incorrect keystore path or password is entered, then an error message appears stating that the password is invalid and must be corrected. All fields on this screen except for **Store Path** and **Store Password** are disabled until you specify the correct values.

18. After you provide the correct keystore path and password, press the Tab key to move to another active field (for example, the **Store Path** field). This ensures that the **Store Type** field and the **Signature Key Alias** dropdown list are properly populated.

19. The **Store Type** value is read from the keystore and is never editable. The store type is always **JKS** (Java Key Store).

20. From the **Signature Key Alias** dropdown list, select the signature key alias.

    This list populates automatically when the correct password is entered in the **Store Password** field. The **Signature Key Alias** is the identifier for the certificate associated with the private key that is used for signing. The key aliases found in the specified keystore are available in the list. Select the one to be used for signing.

21. In the **Signature Key Password** field, specify the password for accessing the key identified by the alias specified in **Signature Key Alias.**

22. Optionally, from the **Encryption Key Alias** dropdown list, select the encryption key alias.

    This list populates automatically when the correct password is entered in the **Store Password** field. The key aliases found in the specified keystore are available in the list. Select the one to be used for encryption.

23. Optionally, in the **Encryption Key Password** field, specify the password for accessing the key identified by the alias specified in **Encryption Key Alias**.

24. From the **Recipient Alias** field, select the keystore alias that is associated with the producer's certificate and then click **Finish.**

    This certificate is used to encrypt the message to the producer.

    This field is not displayed if you selected **SAML Token with Message Integrity** as the **Token Profile** in the Configure Security Attributes page of the wizard.

    If the producer declares user categories, when you click **Finish,** a dialog displays asking whether you want to map the user categories to Java EE roles. Click **Yes** and see Section 63.2.1.2, "How to Map a Producer's Declared User Categories to an Application's Defined Java EE Security Roles." Click **No** to decline this opportunity and complete the registration process.

63.2.1.2 How to Map a Producer's Declared User Categories to an Application's Defined Java EE Security Roles

The user categories the producer declares come from the portlets it contains. For example, if the producer contains one or more JSR 286 portlets created with the Standards-based Java Portlet (JSR 286) wizard, then any security roles added during portlet creation are included in the user categories the producer declares. Java EE security roles can be specified through the Portal Framework application's `web.xml` file properties.

For more information about security roles in JSR 286 portlets, see Section 74.17, "Securing Identity Propagation Through WSRP Producers with WS-Security."

This procedure continues forward from Section 63.2.1.1, "How to Register a WSRP Portlet Producer."

To map producer-declared user categories with application-defined Java EE security roles:

1. After clicking **Finish** in the Register WSRP Portlet Producer wizard, click **Yes** in the resulting dialog.
2. In the User Categories dialog, for each **User Category**, click the corresponding field in the **J2EE Security Role** column.

   The User Categories dialog is also accessible when you edit producer registration settings. For more information see Section 63.3.1, "How to Edit Portlet Producer Registration Settings."
3. From the resulting list, select the security role to map to the producer user category.
4. Click **OK** when all user categories are mapped.

63.2.2 Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application

When you register a PDK-Java portlet producer, you provide basic information that describes the producer's operational parameters. This information is used by the portlet-consuming application to communicate with the producer and with the portlets through the producer.

When registration is successful, the newly registered producer is displayed in JDeveloper either in the Application Resources panel of the Application Navigator, or in the Resource Palette, depending on where you created the connection. You can then select portlets from the producer for placement on your application (`.jspx`) page.

> **Note:** In the Register Oracle PDK-Java Portlet Producer wizard, if you click **Cancel** after you have clicked **Finish,** the registration is not canceled.

To register a PDK-Java portlet producer:

1. In the Application Resources panel of the Application Navigator, right-click **Connections,** choose **New Connection** and then choose **Oracle PDK-Java Producer.**
2. In the Specify Producer Name page of the Register Oracle PDK-Java Portlet Producer wizard, the **Create Connection in** option is set depending on how you accessed the wizard. The default selection is **Application Resources** if you invoked the wizard from an application, and **Resource Palette** if you invoked the wizard from the Resource Palette. You can change this option at this point.
3. From the **Target Project** dropdown list, select the project to be configured for the PDK-Java producer connection.

   This should be the same project as the one in which you intend to consume the portlets.

You can change this option only if you invoked the wizard from the Application Navigator.

4. In the **Producer Registration Name** field, enter a name for the producer registration that is unique among all connections and then click **Next.**

5. In the Specify Connection Details page, in the **URL Endpoint** field, enter the producer's URL using the following syntax:

   ```
   http://host:port/context-root/providers
   ```

   Where:

   - *host* is the server to which your producer has been deployed.
   - *port* is the port to which the server is listening for HTTP requests.
   - *context-root* is the Web application's context root.
   - providers is static text. The text entered here depends on how the producer is deployed.

   For example:

   ```
   http://myhost.example.com:7101/myEnterprisePortlets/providers
   ```

6. In the **Service ID** field, enter the unique identifier for this producer.

   PDK-Java enables you to deploy multiple producers under a single adapter servlet. The producers are identified by their unique service IDs. A service ID is required only when a service ID or producer name is not appended to the URL endpoint. For example the following URL endpoint requires the service ID, `sample`:

   ```
   http://myhost:7101/myEnterprisePortlets/providers
   ```

   However, the following URL endpoint, does not require a service ID:

   ```
   http://myhost:7101/myEnterprisePortlets/providers/sample
   ```

7. If the application and the producer are separated by a firewall, an HTTP proxy is needed for communication between the application and the producer. If this is the case for your application, select **Use Proxy for Contacting Producer** and specify the URL and port number of the proxy.

   > **Note:** The proxy fields in this step default to the proxy preferences set in JDeveloper Preferences (from the main menu, choose **Tools > Preferences,** and then select **Web Browser and Proxy.**)

8. Select **Associate Producer with External Application**, then select the application, if this producer must provide authentication to an external application.

   For more information, see Section 74.13.3, "Managing External Applications."

   This option is available only if you invoked the wizard from the Application Navigator, as external applications are scoped to individual applications.

9. Select **Enable Producer Sessions** to enable sessions between the producer and the consuming application.

   When sessions are enabled, the server maintains session-specific information, such as user name. Message authentication uses sessions, so if the shared key is set, then this option should also be selected.

For sessionless communication between the producer and the server, deselect this option.

10. At this point in the wizard, you can click **Finish** to complete the registration, using the default values for all remaining steps.

    To provide additional details, click **Next** and follow the remaining steps.

11. In the Specify Additional Details page, in the **Default Timeout Interval (Seconds)** field, enter the number of seconds to wait for the producer to respond during design time operations.

12. In the **Subscriber ID** field, enter a string to identify the consumer of the producer being registered.

    When a producer is registered, a call is made to the producer. During the call, the consumer passes the value for **Subscriber ID** to the producer. This value is also passed every time a portlet call is made. If the producer does not see the expected value for **Subscriber ID**, then it might reject the registration call.

    > **Note:** Editing the producer registration to change the **Subscriber ID** after the initial registration has no effect. To specify a different **Subscriber ID**, you must reregister the producer.

13. In the **Shared Key** field, enter a shared key to use for producers that are set up to handle encryption and then click **Finish.**

    The shared key is used by the encryption algorithm to generate a message signature for message authentication. Producer registration fails if the producer is set up with a shared key and you enter an incorrect shared key here. The shared key can contain between 10 and 20 alphanumeric characters.

63.3 Managing Portlet Producer Connections

After registering a portlet producer, you can edit the registration settings, test the connection, refresh the producer to obtain the latest list of portlets, or delete the connection to the portlet producer.

This section includes the following topics:

- Section 63.3.1, "How to Edit Portlet Producer Registration Settings"
- Section 63.3.2, "How to Test a Portlet Producer Connection"
- Section 63.3.3, "How to Refresh a Portlet Producer"
- Section 63.3.4, "How to Delete a Portlet Producer"
- Section 63.3.5, "How to Edit Portlet Client Configuration"

63.3.1 How to Edit Portlet Producer Registration Settings

Both the WSRP and PDK-Java portlet producer registration wizards enable you to access and revise many of the values you entered when you registered the producer.

To edit portlet producer registration settings:

1. Navigate to the producer in the Application Resources panel of the Application Navigator or in the Resource Palette.
2. Right-click the producer to edit, and choose **Properties.**

3. Edit the producer registration properties as required, clicking **Next** to step through the pages of the wizard.

   You can also go directly to a specific step by clicking the links in the navigation panel on the left side of the wizard.

   - For information about WSRP Producer settings, see Section 63.2.1, "Registering a WSRP Portlet Producer with a WebCenter Portal Framework Application."
   - For information about Oracle PDK-Java Producer settings, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

   You cannot edit the **Producer Registration Name.**

4. When you have changed all the necessary settings, click **Finish.**
5. Editing some properties, such as the **WSDL URL** or **URL Endpoint,** requires a producer refresh. When you make such a change, a dialog displays allowing you to refresh the producer immediately, save the changes but do not refresh the producer, or return to the edit producer registration wizard. Click **Yes, No,** or **Cancel** as appropriate.

   > **Note:** While you can edit the value of the **WSDL URL** field, you can point to a different producer only if the new producer has access to the preference store of the old producer, or if the preference store of the old producer has been migrated to that of the new producer.

6. Click **OK** when the producer has been successfully refreshed, if necessary.
7. Once you have completed your edits, consider testing the producer connection to be sure the connection information is valid. For more information, see Section 63.3.2, "How to Test a Portlet Producer Connection."

63.3.2 How to Test a Portlet Producer Connection

The connection testing feature provides a means of testing the validity of a portlet producer connection.

To test a portlet producer connection:

1. Navigate to the producer in the Application Resources panel of the Application Navigator or in the Resource Palette.
2. Right-click the producer to test, and choose **Test Producer Connection.**
3. A progress bar appears while the test is underway. A success or failure dialog displays when the test is complete. Click **OK** to close this dialog.

   If the failure dialog displays, consider editing the producer registration details and retesting the producer connection. Additionally, especially if the failure dialog takes a long time to display, ensure that the producer is available. For example, if the producer is provided through the Integrated WLS, ensure that the Integrated WLS is running, and then retest the connection.

63.3.3 How to Refresh a Portlet Producer

When you refresh a portlet producer, the portlets from that producer are also refreshed. Newly added portlets and any updates to existing portlets become available to any applications that are consuming portlets from this producer.

Tip: When a portlet is removed from a producer, be sure to manually delete the portlet from all application pages on which it has been placed. For more information, see Section 63.9, "Deleting Portlets from Application Pages."

To refresh a portlet producer:

1. Navigate to the producer in the Application Resources panel of the Application Navigator or in the Resource Palette.
2. Right-click the producer you want to refresh, and choose **Refresh Producer Registration.**
3. In the Portlet Producer Refresh dialog, click **Yes.**

63.3.4 How to Delete a Portlet Producer

If you no longer want to use a particular producer with your application, you can delete the producer. For information about deleting portlets and relevant page variables, see Section 63.9, "Deleting Portlets from Application Pages."

Note: if you delete a producer, any pages that consume portlets from that producer display an error message that the portlet is unavailable. The portlets continue to be unavailable even if you re-register the producer using the same name.

To delete a portlet producer:

1. Navigate to the producer in the Application Resources panel of the Application Navigator or in the Resource Palette.
2. Right-click the producer you want to delete, and choose **Delete.**
3. In the Delete Confirmation dialog, click **Yes.**

63.3.5 How to Edit Portlet Client Configuration

The `adf-config.xml` file contains configuration information for WebCenter Portal tools and services. Portlet client configuration details, such as timeout and cache settings, are specified in the `adf-portlet-config` section of the file.

You can edit the `adf-config.xml` file for your application and edit the portlet client configuration.

Note: If you edit the `adf-config.xml` file, you must redeploy your application after the changes are made.

Table 63–2 describes the child elements of `adf-portlet-config`. The `init-param` names in the first column correspond to the names of the servlet `init-params` used when the portlet client is accessed through the web adapter.

Table 63–2 Child Elements of adf-portlet-config

Element (init-param)	Description	Default Value

`parallelPoolSize`
`(parallel.pool.size)`
	The number of threads to use for parallel execution of tasks.	10

`parallelQueueSize`
`(parallel.queue.size)`
	The size of the queue of tasks waiting for parallel execution. Tasks are rejected when the queue size is exceeded.	20

`defaultTimeout`
`(default.timeout)`
	The default timeout period in seconds for requests made to producers. This value is used when a timeout is not defined at the portlet or producer level.	10

`minimumTimeout`
`(minimum.timeout)`
	The minimum timeout period in seconds for requests made to producers. This value is used to impose a lower limit on timeout periods specified by portlets or producers.	0.1

`maximumTimeout`
`(maximum.timeout)`
	The maximum timeout period in seconds for requests made to producers. This value is used to impose an upper limit on timeout periods specified by portlets or producers.	300

`resourceProxyPath`
`(resource.proxy.path)`
	The base path of the resource proxy servlet, relative to the context root of the application. Used to construct links to the resource servlet within portlet markup.	/resourceproxy

`supportedLocales`
`(supported.locales)`
	The set of supported locales defined using strings of the form:
	`language[_country[_variant]]`
		Commented out by default. You should uncomment this element if you have multiple locales. See Example 63–1.

`portletTechnologies`
`(portlet.technologies)`
	The set of portlet technologies supported by the client defined by the fully qualified names of classes that implement the PortletTechnologyConfig interface.	{o.p.c.ci.web.WebPortletTechnologyConfig, o.p.c.ci.wsrp.WSRPPortletTechnologyConfig}

`cacheSettings`
`(cache.*)`
	Cache configuration information. Used to enable or disable the cache, define its maximum size and impose limits on the amount of space available for different users and subscribers.	The cache is enabled and no size restrictions are imposed.

Table 63–2 (Cont.) Child Elements of adf-portlet-config

Element (init-param)	Description	Default Value
`maximumResourceUrlLength` (`maximum.resource.url.length`)	The maximum length allowed for resource URLs. This prevents the URL from becoming to long if the portlet passes a lot of contextual information in a resource request. Resource URLs longer than 2048 characters may cause problems in some browsers. If the information encoded in a resource URL exceeds this value, the portlet client stores the information in the session and encodes a key to the session attribute in the URL instead. The key is calculated in a deterministic way to avoid adversely affecting browser caching.	2048

Example 63–1 illustrates the usage of the `adf-portlet-config` section in `adf-config.xml`.

Example 63–1 The adf-portlet-config Section of adf-config.xml

```
<adf-portlet-config xmlns="http://xmlns.oracle.com/adf/portlet/config">
  <supportedLocales>
    <value>en</value>
    <value>fr</value>
    <value>de</value>
    <value>es</value>
  </supportedLocales>
  <portletTechnologies>
   <value>oracle.portlet.client.containerimpl.web.
     WebPortletTechnologyConfig</value>
   <value>oracle.portlet.client.containerimpl.wsrp.
     WSRPPortletTechnologyConfig</value>
  </portletTechnologies>
  <defaultTimeout>20</defaultTimeout>
  <minimumTimeout>1</minimumTimeout>
  <maximumTimeout>300</maximumTimeout>
  <resourceProxyPath>/portletresource</resourceProxyPath>
  <cacheSettings>
    <maxSize>10000000</maxSize>
    <subscriber default="true">
      <systemLevel>
        <maxSize>5000000</maxSize>
      </systemLevel>
      <userLevel>
        <maxSize>8000000</maxSize>
      </userLevel>
    </subscriber>
  </cacheSettings>
</adf-portlet-config>
```

> **Tip:** To edit portlet client configuration at runtime, without having to redeploy the application, you can use the `setPortletClientConfig` WLST command. For more information, see the "setPortletClientConfig" section in the *WebLogic Scripting Tool Command Reference*.

63.4 Adding the Portlet Producer Task Flow

The portlet producer task flow (Producer) enables users to manage portlet producer connections at runtime.

For applications created using WebCenter Portal's Portal Framework application template, the portlet producer task flow is available out of the box through the runtime administration console (Services tab). For details, see the "Configuring Services, Portlet Producers, and External Applications for Portal Framework Applications" chapter in *Administering Oracle WebCenter Portal*.

In addition, just like other task flows, you can add the portlet producer task flow to your application pages. This might be especially useful if you are not using WebCenter Portal's Portal Framework application template and the runtime administration console is therefore not part of your project. Special permissions are required to manage or view portlet producer connections through the Producer task flow:

- **`AppConnectionManager`**—Users with this role can register, modify, and delete portlet producer connections at runtime.
- **`AppConnectionViewer`**—Users with this role can view portlet producer connections at runtime. By default, any user who is logged in (that is, has the `authenticated-user` role) is granted this role.

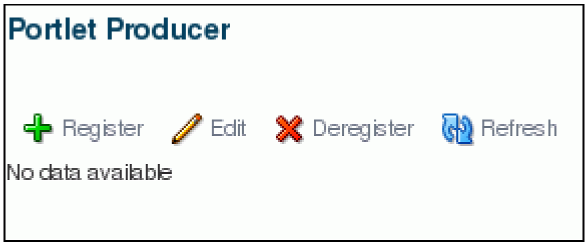
By default, users with the `Administrator` role can manage portlet producers. If you want other users to manage connections through the portlet producer task flow, you must grant them the `AppConnectionManager` role.

To add the portlet producer task flow:

1. Create or open the JSF page in your application on which you want to add the task flow.
2. In the Resource Palette, expand **My Catalogs**, **WebCenter Portal - Services Catalog**, and **Task Flows**.
3. Drag **Producer** from the Resource Palette and drop it onto the page inside the `af:form` tag.
4. Grant the `AppConnectionManager` role to one or more test users, if required:
   a. Add the test user `TEST_PROD`.
   b. Grant the `AppConnectionManager` role.

   For information about how to add a user and grant this role, see the "Creating Test Users" section in the *Fusion Developer's Guide for Oracle Application Development Framework*.
5. Save and run your page. Login as an administrator or the `TEST_PROD` user defined in the previous step. The screen shown in Figure 63–1 appears.

Figure 63–1 The Portlet Producer Task Flow



Portlet Producer

No data available

> **Note:** At runtime, application administrators can grant users the `AppConnectionManager` and `AppConnectionViewer` roles through WebCenter Portal Administration (see the "Adding Members to Application Roles" section in *Administering Oracle WebCenter Portal*). Alternatively, system administrators can grant `AppConnectionManager` and `AppConnectionViewer` roles through Fusion Middleware Control (see the "Granting Application Roles Using Fusion Middleware Control" section in the *Administering Oracle WebCenter Portal*).

63.5 Adding Portlets to a Page

Placing a portlet on a Portal Framework application page is a simple matter of dragging the portlet from the Application Resources panel or Resource Palette and dropping it on the page.

This section includes the following topics:

- Section 63.5.1, "How to Add a Portlet to a Page"
- Section 63.5.2, "What Happens When You Add a Portlet to a Page"
- Section 63.5.3, "What You May Need to Know About Interportlet Communication"
- Section 63.5.4, "What You May Need to Know About Inline Frames"
- Section 63.5.5, "What You May Need to Know About Portlet Sizing"
- Section 63.5.6, "What You May Need to Know About Minimize, Restore, and Move"
- Section 63.5.7, "What Happens at Runtime"

Before You Begin

Before you can place a portlet on a page, there are a few preparatory steps you must perform before you can take this simple action. These include:

1. Creating a Portal Framework application. For more information, see Section 6.1, "Creating a New WebCenter Portal Framework Application."
2. Creating an application page. For more information, see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application."
3. Registering the portlet's producer with the application. For more information, see Section 63.2.1, "Registering a WSRP Portlet Producer with a WebCenter Portal Framework Application" or Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."
4. Some of the portlets you plan to consume may come from applications that handle their own authentication. In such cases, you must register the application as an

external application and identify it to the portlet producer that provides it. For more information, see Chapter 74, "Securing Your WebCenter Portal Framework Application."

5. Some of the portlets you plan to consume may come from producers that are Secure Sockets Layer (SSL) enabled. When you try to access an SSL-enabled producer, you may be presented with a Security Alert dialog, prompting you to view the producer's certificate and add it to the list of trusted certificates. The Security Alert dialog displays only if the producer uses a security certificate issued by a certificate authority that is not widely accepted. To consume portlets from such a producer, you must first add the producer's security certificate to the keystore. For more information, see Section 74.14, "Registering Custom Certificates with the Keystore."

63.5.1 How to Add a Portlet to a Page

You can add a portlet to a page by dragging and dropping it from the Application Resources panel of the Application Navigator or from the Resource Palette.

To add a portlet to a page:

1. In the Application Navigator, open the application that contains the page (`.jspx` file) to which you want to add the portlet.
2. Expand the project that contains the page.
3. Locate the page, right-click it, and then choose **Open.**

   Tip: You can also double-click the page to open it.

4. Under the **Connections** node in the Application Resources panel of the Application Navigator, or in the Resource Palette:
   - If the producer is a WSRP producer, expand the **WSRP Producer** node.
   - If the producer is a PDK-Java producer, expand the **Oracle PDK-Java Producer** node.
5. Expand the node for the portlet producer that contains the portlet to add to the page.

   Under the selected producer, all portlets contained by that producer are listed.
6. Drag the portlet from the producer node directly onto the page.

   You should drag the portlet onto a form on the page. If you do not, a dialog displays prompting you to create a form to contain the portlet. Select:
   - **ADF Faces - Form** if the page contains rich client components. This adds an `af:form` component to the page.
   - **JSF HTML - Form** if the page contains HTML components (for example, if it is an upgraded 10.1.3.2 page). This adds an `h:form` or `tr:form` component to the page, depending on the surrounding document tag.

   Do not select **HTML - Form** as this is not valid for portlets.

Note: You can include any Oracle ADF Faces component or task flow as a child component of a Show Detail Frame component. However, portlets contain headers similar to those provided by the Show Detail Frame component and can be added to a Panel Customizable component directly. There are no additional benefits to including portlets in Show Detail Frame components.

Note: If you add a portlet as a Trinidad component, that is, inside a tr:form component, and the portlet implements modes other than View mode, you must include the following in the application's web.xml file:

```
<context-param>
  <param-name>
    oracle.adf.view.rich.newWindowDetect.OPTIONS
  </param-name>
  <param-value>off</param-value>
</context-param>
```

Note: If you are adding a PeopleSoft portlet to a page in a Portal Framework application, you must set the renderPortletInIFrame portlet tag attribute to true.

For more information, see Section 63.6, "Setting Attribute Values for the Portlet Tag."

63.5.2 What Happens When You Add a Portlet to a Page

When you add a portlet to a page, a portlet tag (adfp:portlet or adfph:portlet) is added to the page source. This is the tag that represents the portlet component. This tag includes attributes that you can edit using the Property Inspector, or in the page source, to further control the behavior and appearance of the portlet. For information about these attributes, see Section 63.6, "Setting Attribute Values for the Portlet Tag."

The type of portlet tag used is determined by the following:

- If the project is configured for rich client components alone, the adfp:portlet tag is used.
- If the project is configured for Trinidad components alone, the adfph:portlet tag is used.
- If the project is configured for both rich client and Trinidad components, the adfp:portlet tag is used.
- If the project is not configured for rich client or Trinidad components, the adfp:portlet tag is used and the project is automatically configured for rich client components.

This is so that the look and feel of the portlet matches that of other components on the page. For example, if you created your page as described in Section 15.2, "Creating Pages in a WebCenter Portal Framework Application." the page is a rich client page. In this case, the portlet is added using the adfp:portlet tag, as shown in Example 63–2.

Example 63–2 A Rich Client Page Containing a Portlet

```
<?xml version='1.0' encoding='US-ASCII'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.0"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:adfp="http://xmlns.oracle.com/adf/faces/portlet">
  <jsp:directive.page contentType="text/html;charset=US-ASCII"/>
  <f:view>
    <af:document>
      <af:form>
        <adfp:portlet value="#{bindings.Portlet11_1}"
                      id="portlet1"
                      renderPortletInIFrame="true"/>
      </af:form>
    </af:document>
  </f:view>
</jsp:root>
```

If you are working with an upgraded 10.1.3.2 application or an application that contains Trinidad components, the application uses HTML components, rather than rich client components. In this case, when you drag a portlet onto a page, the `adfph:portlet` tag is used, as shown in Example 63–3.

Example 63–3 A Trinidad Page Containing a Portlet

```
<?xml version='1.0' encoding='US-ASCII'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.0"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:tr="http://myfaces.apache.org/trinidad"
          xmlns:adfph="http://xmlns.oracle.com/adf/faces/portlet/html">
  <jsp:directive.page contentType="text/html;charset=US-ASCII"/>
  <f:view>
    <tr:document title="Title 1">
      <tr:form>
        <adfph:portlet value="#{bindings.Portlet12_1}"
                       id="portlet1"/>
      </tr:form>
    </tr:document>
  </f:view>
</jsp:root>
```

If the application page includes one or more Composer components, this may influence where the portlet is placed. For example, in the Structure panel, a portlet placed on a page with a `cust:panelCustomizable` tag, would be placed as illustrated in Example 63–4:

Example 63–4 Hierarchical Placement of the Portlet Tag

```
af:document
  af:form
    cust:panelCustomizable
       adfp:portlet
```

Note: We recommend that you do not mix ADF Faces rich client components with HTML or Trinidad components on the same page. Doing so may produce unexpected results at runtime. Therefore, do not place a rich client portlet inside a Composer HTML component or an HTML portlet inside a Composer rich client component.

For information about Composer tags, see Chapter 18, "Enabling Runtime Editing of Pages Using Composer."

Note: When you drop an instance of OmniPortlet onto your page, open the Property Inspector and ensure that the `AllModesSharedScreen` property, under the Display Mode category, is set to `false`, the default value. Setting this property to `true` may prevent you from editing certain sections of your OmniPortlet in the OmniPortlet wizard.

63.5.3 What You May Need to Know About Interportlet Communication

One way to make your WebCenter Portal Framework application more interactive is by linking related components such that their contents are synchronized based upon the context. For example, suppose you have two stock portlets on a page, one provides data about a stock's price while the other provides headline news items for a stock. Both portlets are based upon the stock ticker symbol, hence it would make sense that, when the ticker symbol is changed in the stock price portlet, the stock headlines portlet picks up that change and refreshes itself with headlines pertaining to the same ticker symbol.

The JSR 286 standard introduces public render parameters, which you can use to link portlets on a page. For more information, see Section 59.3.5, "How to Use Public Render Parameters in JSR 286 Portlets."

The JSR 286 standard also supports portlet events. You can use portlet events to drive the content of a portlet based on actions that occur elsewhere on the page. Portlet events can be cascaded so that a portlet may respond to an event by triggering an event of its own, which in turn affects other portlets on the page. Portlet events can also be consumed by ADF contextual events and contextual events can be consumed by portlets. You can use this to contextually link portlets and task flows. For more information, see Section 59.3.6, "How to Use Portlet Events in JSR 286 Portlets."

When you add a portlet to a page, a portlet binding is added to the page definition file. This portlet binding includes attributes that specify whether the portlet should automatically listen for parameter changes and events (Example 63–5).

Example 63–5 Portlet Binding

```
<portlet id="LotteryPortlet2_1"
         portletInstance="oracle/adf/portlet/SamplePortlets/ap/Ei7default_03ba18be_012d_1000_8002_
0ae8827e9493"
         class="oracle.adf.model.portlet.binding.PortletBinding"
         retainPortletHeaders="false"
         listenForAutoDeliveredPortletEvents="true"
         listenForAutoDeliveredParameterChanges="true"
         xmlns="http://xmlns.oracle.com/portlet/bindings"/>
```

Setting these attributes to `true` (the default) means that any parameters that are changed or events that are raised elsewhere on the page that match those supported by the portlet (that is, they have the same QName) automatically cause the portlet to be updated accordingly. In addition, the portlet can define aliases for its parameters and events to match parameters and events with different QNames.

You can set these attributes to `false` to disable this automatic parameter and event listening. For example, your page might contain multiple instances of the same portlet that require values to come from different sources. If you disable automatic parameter and event listening, or if your portlet defines parameters or events with names that do not match those you want to use for linking, you must manually configure the portlet wiring. For more information, see Section 63.7, "Manually Wiring Parameters and Events in JSR 286 Portlets."

63.5.4 What You May Need to Know About Inline Frames

Rendering a portlet directly on a page provides a better user experience as compared to placing it in an inline frame (`iframe`). However, at times, it may be required to include the portlet markup inside an inline frame. You can use the `renderPortletInIFrame` attribute to determine whether or not a portlet should be rendered in an inline frame.

The default setting of the `renderPortletInIFrame` attribute is `auto`. This causes the portlet consumer to attempt to rewrite the portlet markup whenever possible, so that it renders correctly within the Oracle ADF page without the need for an inline frame.

However, in the following circumstances, the portlet is rendered within an inline frame:

- The parser throws an exception as it is not able to parse the markup.
- The portlet code contains a multi-part form post.
- The portlet code contains a file upload element.
- The portlet developer explicitly requested that the portlet be rendered in an inline frame by setting the `com.oracle.portlet.requireIFrame` container runtime option in the `portlet.xml` file to `true`.

> **Note:** Portlets created using the Oracle JSF Portlet Bridge have the `requireIFrame` container runtime option set to `true` as these portlets are too complex to render directly on Oracle ADF pages due to JavaScript issues.

In some circumstances, the portlet consumer may be unable to rewrite the portlet markup and JavaScript to accommodate the portlet in the Oracle ADF page. If this is the case, you may find that the portlet does not behave as expected, for example, buttons do nothing or you get JavaScript errors in the console. If this happens, you should set the `renderPortletInIFrame` attribute to `true` so that the portlet is always rendered in an inline frame.

Some examples of when you should set `renderPortletInIFrame` to `true` are when:

- The portlet code builds up element names dynamically in JavaScript.
- The portlet code uses multiple forms and references them in JavaScript by index.
- JavaScript library code references elements within the portlet.

Note: If you render a portlet within an inline frame, then manipulating `window.location` may give unexpected results. If your portlet uses `window.location`, then you should ensure that your JavaScript is robust enough to handle the case where the portlet renders itself inside an inline frame.

If you want to ensure that a portlet is never rendered in an inline frame, for example for accessibility reasons, set the `renderPortletInIFrame` attribute to `false`. Note however, that HTML markup from a portlet that is not rendered in an inline frame may interfere with other components on the Oracle ADF page.

For more information about the accessibility implications of using inline frames, see Section I.1.3, "Accessibility Considerations for Portlets."

63.5.5 What You May Need to Know About Portlet Sizing

ADF Faces components can stretch their children, or not. It is usually a requirement that a parent only contains a single child for it to be able to stretch that child. Components also support being stretched or not. When a component that supports being stretched is placed inside a parent that is stretching its child, the dimension of the child is determined by those of the parent. The child is said to be stretched by the parent and it is sized to fill the parent.

When a component is not stretched by its parent, it is said to be in a flow layout. Here it is not taking its size from its parent. It must determine its own size, either from its children or from dimension style settings specified by the page designer.

The `portlet` Faces component supports being stretched by its parent. It does not explicitly stretch its children.

There are three ways the size of a `portlet` component is determined, depending on the portlet's parent component and attributes set on the `portlet` component itself.

- If the portlet is being stretched by its parent, the size is determined only by the parent. The portlet is in a stretch layout.
  - It does not matter how big the content is, this is irrelevant to the size of the portlet. If the content is bigger than the portlet, scrollbars are provided to enable users to display all the content.
  - If you specify a height for the portlet, it is ignored; stretching takes precedence.
  - This is the preferred layout method; it is always reliable.
  - The ADF Faces Tag documentation tells you whether each component stretches its children or not.
- If the portlet is not being stretched by its parent and explicit sizes are set, they are used.
  - This is also always reliable; you'll get the size you specified.
  - If the content is bigger than the specified size, scrollbars are provided to enable users to display all the content.
  - The size is fixed; the size of the content is not taken into account.
- If the portlet is not being stretched by its parent and no explicit sizes are set, the portlet attempts to auto-size to the content.

Auto-Sizing

When a portlet is in a flow layout and has no explicit size set, it attempts to set the size of the portlet so that it is exactly big enough to display all of the portlet content without scrollbars.

The portlet does this by asking the browser how much space is required to show the content without scrollbars and using that to set the height of the portlet. More specifically, it looks at the `scrollHeight` property of the inline frame window.

How well this works depends on what is inside the portlet. Some layouts have a nice intrinsic size which auto-sizes well. However, some layouts and components inside the portlet, typically those that allow their content to overflow invisibly or with scrollbars, effectively hide the size of their contents. In specific terms of the HTML markup are HTML elements with overflow setting of `hidden`, `auto`, or `scroll`. This can come from inline styles or CSS styles applied to the element.

The problem arises because the `scrollHeight` is the minimum height required to correctly display the content. If you have, for example, a `div` element with an `overflow="auto"`, then if that `div` is smaller than its content, then it uses scroll bars. So, when you ask what minimum size is needed to display the `div`, unless it has an explicit height or minimum height set, the answer is 0. That means that the content of this `div`, even if it has a definite height does not contribute to the overall scroll height of the content.

In ADF terms, this is often associated with components that expect to take their dimensions from their parents, for example `panelStretchLayout` with `dimensionFrom="parent"` or that scroll their contents, for example, `panelGroupLayout` with `layout="scroll"`. These are the components that tend to have hidden or scrollable overflows.

Thinking about the ADF Faces layout model also gives us an alternative way of understanding the problem. The ADF Faces layout guidelines dictate starting with an unbroken chain of the components that are stretched by their parents and within that islands of flow layout, usually initiated by an `af:panelGroupLayout` where the components have fixed heights or take their dimensions from their children. If in the root of the portlet, we have that unbroken chain of components looking to take their dimensions from their parent but the portlet itself is in a flow layout and therefore is looking to take its dimensions from the content there is an impasse. The portlet is looking to take its dimensions from its parent for the size. It should be clear then that the solution to this is to stretch the portlet (that is, take it out of the flow layout island), set a height on the portlet, or make the content of the portlet entirely and island of flow layout content.

If the content cannot be auto-sized, the height defaults to 200px in Firefox and 0px in Internet Explorer. The fact that Internet Explorer is 0 is caused by incorrect behavior where the `scrollHeight` does not correctly respect the `min-height` CSS style setting. In Firefox, the 200px height comes from the `minheight` setting on the region that renders the portletized task flow. To work around this, you can set the `height` or `min-height` CSS in the consumer.

Auto-Sizing Best Practice

To get the best results when using the portlet in a flow layout where you want it auto-size the content:

- Make the portlet content an unbroken chain of components that take their dimensions from their children.

- Use the `dimensionsFrom="children"` attribute on components that support it, for example, `af:panelStretchLayout`, to make them take their dimensions from their children.
- Use `layout="vertical"` rather than `layout="scroll"` on `panelGroupLayout` to make the size of its children contribute to the overall auto-sized dimensions.
- When switching from the flow layout chain of components to a stretch layout, set an explicit height on the first component that stretches its children. Typically, this will be where you have used `panelStretchLayout` with `dimensionsFrom="parent"`.

63.5.6 What You May Need to Know About Minimize, Restore, and Move

To accommodate the needs of the development environment, the behavior of the actions Minimize, Restore, and Move for `Show Detail Frame` and `portlet` components differs between design time and runtime. At design time, these actions persist in a given WLS session, but do not persist over sessions (*session* means the time between starting and stopping WLS). At runtime, these actions persist both during a given WLS session and across sessions.

This difference has been introduced to enable an automatic reset of an application page at design time.

If persisting across sessions is not required at runtime, then a simple modification to the application's `web.xml` file can turn it off. Go to the following parameter setting in the application's `web.xml` file (Example 63–6):

Example 63–6 Persistence Setting in the Application's web.xml File

```
<context-param>
   <param-name>oracle.adf.view.faces.CHANGE_PERSISTENCE</param-name>
   <param-value>oracle.adfinternal.view.faces.change.HybridChangeManager</param-va
lue>
</context-param>
```

Replace it with the following (Example 63–7):

Example 63–7 Turning Runtime Persistence Off in the Application's web.xml File

```
<context-param>
   <param-name>oracle.adf.view.faces.CHANGE_PERSISTENCE</param-name>
   <param-value>oracle.adf.view.faces.change.SessionChangeManager</param-value>
</context-param>
```

If security has been implemented on the application, then the Minimize, Restore, and Move actions display only to users with Customize privileges. They do not display to users with Personalize privileges. Customize users can test the effect of these actions by following these steps at design time:

1. Run the application page using JDeveloper's Integrated WLS.
2. Log in as the administrator.
3. Minimize a portlet, move portlets around, make whatever changes you want using the relevant actions commands.
4. Log out, then log in as a user and check the effects of your actions.

63.5.7 What Happens at Runtime

Once you place a portlet on a page, right-click the page and choose **Run.** This displays the page and runs the portlet in your default browser using JDeveloper's Integrated WLS. Different portlets may require additional runtime configuration. Notably, the content of an OmniPortlet or Web Clipping portlet instance is defined at runtime. For more information about OmniPortlet, see Chapter 64, "Creating Portlets with OmniPortlet." For more information about the Web Clipping portlet, see Chapter 65, "Creating Content-Based Portlets with Web Clipping." For more information about portlets generally, see Chapter 57, "Introduction to Portlets."

When running a portlet that has an Edit mode (in a Portal Framework application, this renders as a Personalize icon (pencil icon) in the portlet header), the Personalize icon displays only to authenticated users (that is, users who have logged in). Anonymous or public users do not see the option to personalize the portlet. Some form of security must be implemented for the portlet-consuming application before users can personalize their view of a portlet. If you are a developer creating portlets and pages, you may want to test your portlet's Edit mode without creating a complete security model for your application. For information about how to add security to enable testing of a portlet's Edit mode, see Section 74.12, "Configuring Basic Authentication for Testing Portlet Personalization."

Note: To be able to add portlets to your page at runtime, you must add at least one portlet to that page at design time. Adding a portlet at design time ensures that the following is added to the `<definitionFactories>` element of the `DataBindings.cpx` file:

```
<factory nameSpace="http://xmlns.oracle.com/portlet/bindings"
className="oracle.adf.model.portlet.binding.PortletBindingDefFactor
yImpl"/>
<dtfactory
className="oracle.adfdtinternal.view.faces.portlet.PortletDefinitio
nDTFactory"/>
```

This entry is required to enable consumption of portlets at runtime.

If a portlet supports parameters or events and the automatic parameter and event listening is enabled, any changes to the supported parameters and events (or to parameters and events that are aliased) automatically update the portlet.

When running a portlet from a producer associated with an external application, a link to update login information is displayed. Clicking the link displays a credential provisioning page for entering external application credentials. After specifying valid credentials the portlet displays content appropriately. For more information about external applications, see Section 74.13, "Working with External Applications."

63.6 Setting Attribute Values for the Portlet Tag

In the source code view of a page, each portlet is represented by an `adfp:portlet` tag (or `adfph:portlet` tag), which includes a set of required and optional attributes. Required attributes, `value` and `portletType`, are provided automatically by the framework, and must not be altered. Optional attribute values are relevant when support for the attribute is built into the portlet. For example, you can set `isAboutModeAvailable` to `true`, but if no About mode has been defined for the portlet, then the attribute setting does not affect the portlet.

Portlets also support a set of style-related attributes, which are discussed more fully in Section 20.10, "Applying Styles to Components."

The portlet tag uses many attributes, which you can set at design time either through the JDeveloper Property Inspector or in the source code as attributes of the tag.

This section includes the following topics:

- Section 63.6.1, "How to Set Attribute Values for the Portlet Tag Using the Property Inspector"
- Section 63.6.2, "How to Set Attribute Values for the Portlet Tag in Source Code"
- Section 63.6.3, "Common Attributes of the Portlet Tag"
- Section 63.6.4, "Appearance Attributes of the Portlet Tag"
- Section 63.6.5, "Behavior Attributes of the Portlet Tag"
- Section 63.6.6, "Portlet Modes Attributes of the Portlet Tag"
- Section 63.6.7, "Style Attributes of the Portlet Tag"
- Section 63.6.8, "Binding Attributes of the Portlet Tag"
- Section 63.6.9, "Customization Attributes of the Portlet Tag"
- Section 63.6.10, "Other Attributes of the Portlet Tag"

63.6.1 How to Set Attribute Values for the Portlet Tag Using the Property Inspector

The Property Inspector provides a quick and easy way to set attribute values for the portlet tag without having to edit the source code yourself.

To set attribute values for the portlet tag using the Property Inspector:

1. In the Application Navigator, open the application that contains the page on which the portlet appears.
2. Expand the project that contains the page.
3. Locate the page, right-click it, and then choose **Open.**

   Tip: You can also double-click the page to open it.

4. In the design view, select the portlet whose attributes you want to set.
5. In the Property Inspector, click the appropriate tab and set the desired attribute.

   Repeat this step as often as required.
6. Save your changes.
7. To test the changes you have made, right-click the page and choose **Run.**

63.6.2 How to Set Attribute Values for the Portlet Tag in Source Code

If you prefer working in source code, you can set attribute values for the portlet tag directly there.

To set attribute values for the portlet tag in source code:

1. In the Application Navigator, open the application that contains the page on which the portlet appears.
2. Expand the project that contains the page.

3. Locate the page, right-click it, and then choose **Open.**

   Tip: You can also double-click the page to open it.

4. In the design view, select the portlet whose attributes you want to set.
5. Click the **Source** tab. The portlet that you selected is highlighted in the source code.
6. Make your changes directly to the source code. Example 63–8 shows an edited portlet tag.

Example 63–8 An Edited Portlet Tag

```
<adfp:portlet value="#{bindings.portlet1}"
              portletTypes="/oracle/adf/portlet/WsrpPortletProducer1/applicationPortlets/
                           E0default_b452f828_010a_1000_8002_82235f57eaa8"
              allModesSharedScreen="true"
              isMaximizable="true"
              isMinimizable="true"/>
```

7. Save your changes.
8. To test the changes you have made, right-click the page and choose **Run.**

63.6.3 Common Attributes of the Portlet Tag

Table 63–3 describes the common attributes of the portlet tag.

Table 63–3 Common Attributes of the Portlet Tag

Attribute	Value	Description
`id`	Text string. For example: `id="newsBrief"` The value must follow a subset of the syntax allowed in HTML: ■ Must not be a zero-length String. ■ First character must be an ASCII letter (A-Z a-z) or an underscore (_). ■ Subsequent characters must be ASCII letter or digits (a-Z a-z 0-9), underscores (_), or dashes (-).	The unique identifier of the portlet. This attribute is populated with a unique value by default when you add the portlet to a page.
`title`	Text string. For example: `title="Announcements"`	The portlet title, which is displayed in the portlet header. The value specified here takes precedence over any title specified elsewhere (for example, in the portlet markup). If no value is specified here, the portlet extracts its title from the portlet markup (response). If no value is specified either here or in the portlet markup, the portlet extracts its title from the portlet definition. **Note:** Supplying a value to the `title` attribute at design time means that any change made to the title at runtime in Edit or Edit Defaults mode is ignored.

`width`	Number expressed in pixels or as a percentage of available area:
	■ For pixels, enter *n*px, for example:
	`width = 300px`
	■ For percentage, enter *n*%, for example:
	`width = 50%`
		The width of the area to allow for portlet display.
		If the actual portlet width is larger than the `width` value entered here, a scrollbar appears, provided `displayScrollBar` is set to `auto` or `true`. If `displayScrollBar` is set to `false`, and the actual portlet width exceeds the value expressed for the `width` attribute, the `width` attribute value is considered and the portlet content is truncated.

Table 63–3 (Cont.) Common Attributes of the Portlet Tag

Attribute	Value	Description
`height`	Number expressed in pixels, for example: `height = 300px`	The height of the area to allow for portlet display. If the actual portlet height is larger than the `height` value entered here, a scrollbar appears, provided `displayScrollBar` is set to `auto` or `true`. If `displayScrollBar` is set to `false`, and the actual portlet height exceeds the value expressed for the `height` attribute, the `height` attribute value is considered and the portlet content is truncated.
`icon`	URI to an image. For example: `icon="coffee.png"` In the Property Inspector, click the Property Menu icon next to the field and then choose **Edit** to locate and select the required image. The value must be an absolute URI or a URI that is resolvable relative to the current page or the application context root. The URI provided in the preceding example is stored at the application context root, therefore a full path is not required.	A URI specifying the location of an image to use as an icon, displayed to the left of the portlet title in the portlet header. You can use the icon to indicate the portlet's purpose, to reinforce branding, as a content indicator, or for some other reason.
`partialTriggers`	One or more component IDs. For example: `partialTriggers="_id1 _id2 componentID5"` Separate component IDs with spaces.	The IDs of the components that trigger a partial update. The portlet listens on the specified trigger components. If a trigger component receives a trigger event that causes it to update in some way, this portlet also requests to be updated.

63.6.4 Appearance Attributes of the Portlet Tag

Table 63–4 describes the appearance attributes of the portlet tag.

Table 63–4 Appearance Attributes of the Portlet Tag

Attribute	Value	Description
expansionMode	minimized normal Default: normal	The default state of the portlet: - minimized—The portlet's default display mode is collapsed (minimized). - normal—The portlet's default display made is neither collapsed nor expanded to the width of the page.
allModesSharedScreen	auto false true Default: auto	Whether a change in portlet mode renders the new mode on a new page, rather than the page on which the portlet resides. - auto—All portlet modes are displayed inline if the remote portlet is configured, through the com.oracle.portlet.requireIFrame container runtime option in its portlet.xml file, to require an inline frame (IFRAME). This ensures that Oracle Bridge portlets are displayed inline. - false—All portlet modes, except View (JSR 286) or Show (PDK-Java), are rendered each on their own page. This is useful for portlets such as OmniPortlet and the Web Clipping portlet, which require that modes other than Show mode display on pages other than the page on which the portlet resides. - true—All portlet modes are displayed inline. One mode is swapped out for another on the same page. In other words, this attribute enables all portlet modes to display without leaving the context of a given page.
renderPortletInIFrame	auto false true Default: auto	Whether the portlet is rendered in an IFRAME: - auto—Whenever possible, the portlet consumer attempts to rewrite the portlet markup so that it renders correctly in an ADF page. Otherwise, the portlet is rendered in an IFRAME. - false—The portlet is never rendered in an IFRAME. - true—The portlet is always rendered in an IFRAME. For more information, see Section 63.5.4, "What You May Need to Know About Inline Frames."
displayScrollBar	auto false true Default: auto	Whether a scroll bar is displayed: - auto—Render a scroll bar if the portlet content does not fit the width and height specified. - false—Never render a scroll bar. If the portlet content does not fit the height and width specified, the portlet renders in its actual size. - true—Always render a scroll bar.

Table 63–4 (Cont.) Appearance Attributes of the Portlet Tag

Attribute	Value	Description

`displayHeader`	`false`
	`true`
	Default: `true`
		Whether the portlet header is displayed:
		- `false`—The portlet header is not displayed. Icons and links normally displayed in the header are hidden. If `isSeededInteractionAvailable` is set to `true`, users can access portlet menus and icons by rolling the mouse over the portlet. A fade-in/fade-out toolbar appears, from which users can select Actions menu options.
		- `true`—The portlet header is displayed. Consequently, header-based icons and links are displayed.

`displayShadow`	`false`
	`true`
	Default: `true`
		Whether to display a shadow decoration around the portlet:
		- `false`—Do not display a shadow decoration.
		- `true`—Display a shadow decoration.

`rendered`	`false`
	`true`
	Default: `true`
		Whether the portlet is rendered.
		- `false`—Do not render the portlet. No output is rendered.
		- `true`—Render the portlet. This is the recommended setting. Setting this attribute to `false` causes problems when you run the page.

`background`	`dark`
	`light`
	`medium`
	Default: `medium`
		The style selector to apply to the skin used by the portlet:
		- `dark`—Apply the dark style selector to the skin.
		- `light`—Apply the light style selector to the skin.
		- `medium`—Apply the medium style selector to the skin.
		This provides a way for you to apply a different look and feel to each portlet on an page.

`shortDesc`	Text string. For example: `shortDesc="Portlet for entering display text in place."`	A short description of the portlet.

`displayActions`	`always`
	`onHover`
	Default: `always`
		Whether seeded interactions for the portlet are shown:
		- `always`—Always show seeded interactions.
		- `onHover`—Show seeded interactions when users move the mouse over the portlet.

Table 63–4 (Cont.) Appearance Attributes of the Portlet Tag

Attribute	Value	Description
showMoveAction	menu none Default: menu	Whether to display the **Move** command in the portlet's **Action** menu: - menu—Display the **Move** command on the portlet's **Action** menu. - none—Do not display the **Move** command. There is a difference in the way that the **Move** command behaves at design time and at runtime. For more information, see Section 63.5.6, "What You May Need to Know About Minimize, Restore, and Move."
showRemoveAction	menu none Default: menu	Whether to display the Remove icon on the portlet chrome: - menu—Display the **Remove** command on the portlet's **Action** menu. - none—Do not display the Remove icon. There is a difference in the way that the Remove icon behaves at design time and at runtime. For more information, see Section 63.5.6, "What You May Need to Know About Minimize, Restore, and Move." **Note:** This attribute is available only for the adfp:portlet tag and not for the adfph:portlet tag.
showResizer	always never Default: always	Whether to display the resize handle at the bottom right corner of the portlet. - always—Always display the resize handle. - never—Never display the resize handle. **Note:** This attribute is available only for the adfp:portlet tag and not for the adfph:portlet tag.
showMinimizeAction	chrome none Default: chrome	Whether to display the Minimize icon on the portlet chrome: - chrome—Display the Minimize icon on the portlet chrome. - none—Do not display the Minimize icon. There is a difference in the way that the Minimize icon behaves at design time and at runtime. For more information, see Section 63.5.6, "What You May Need to Know About Minimize, Restore, and Move."

63.6.5 Behavior Attributes of the Portlet Tag

Table 63–5 describes the behavior attributes of the portlet tag.

Table 63–5 Behavior Attributes of Portlet Tag

Attribute	Value	Description
`partialTriggers`	One or more component IDs. For example: `partialTriggers="_id1 _id2 componentID5"` Separate component IDs with spaces.	The IDs of the components that trigger a partial update. The portlet listens on the specified trigger components. If a trigger component receives a trigger event that causes it to update in some way, this portlet also requests to be updated.

`submitUrlParamters`	`false`
	`true`
	Default: `false`
		Whether parameters in portlet links that point to the page on which the portlet is placed are made available to the page:
		■ `false`—Parameters are not made available to the page. Rather, they are available only inside the portlet initiating the request.
		■ `true`—Parameters available on the container page.

63.6.6 Portlet Modes Attributes of the Portlet Tag

Portlet Modes attributes control the rendering of mode-switching UI actions, such as entering edit mode. The ability to render a portlet in a particular mode depends on the modes supported by the portlet and the user authorization. For example, if the `isCustomizeModeAvailable` attribute is set to `true`, but the action is not supported in the portlet, then the attribute setting does not affect the portlet.

Portlet Modes attributes, described in Table 63–6, are value binding expressions that evaluate to `true` or `false`:

- `true` means the portlet is allowed to render in the named mode.
- `false` means the portlet is not allowed to render in the named mode.

Table 63–6 Portlet Modes Attributes of the Portlet Tag

Attribute	Value	Description

`isAboutModeAvailable`	`false`
	`true`
	Default: `true`
		Whether to render an **About** command on the portlet's **Actions** menu.
		Users choose **About** to invoke the portlet's About mode.

`isConfigModeAvailable`	`false`
	`true`
	Default: `true`
		Whether to render a **Configure** command on a JSR 286 portlet's **Actions** menu.
		Users choose **Configure** to open the portlet's Configuration settings.

`isCustomizeModeAvailable`	`false`
	`true`
	Default: `true`
		Whether to render a **Customize** icon in the portlet header.
		Site administrators choose **Customize** to edit a portlet's default personalization data.

`isDetailModeAvailable`	`false`
	`true`
	Default: `true`
		Whether to render a **Details** command on a PDK-Java portlet's **Actions** menu.
		Users choose **Details** to open the portlet in Full Screen mode.

Table 63–6 (Cont.) Portlet Modes Attributes of the Portlet Tag

Attribute	Value	Description
isHelpModeAvailable	false true Default: true	Whether to render a **Help** command on the portlet's **Actions** menu. Users choose **Help** to open the portlet's Help page.
isPrintModeAvailable	false true Default: true	Whether to render a **Print** command on a JSR 286 portlet's **Actions** menu. Users choose **Print** to displays a printer-friendly version of the portlet.
isNormalModeAvailable	false true Default: true	Whether to render a **Refresh** command on the portlet's **Actions** menu. Users choose **Refresh** to redraw the portlet independent of any other content on the page (also known as a partial-page refresh).
isPersonalizeModeAvailable	false true Default: true	Whether to render a **Personalize** icon in the portlet header. Users choose **Personalize** to alter their personal view of the portlet. This mode is equivalent to the Edit mode selection in the Standards-based Java Portlet (JSR286) Wizard. The **Personalize** icon displays only to authenticated users (that is, users who are logged in). It does not display to public or unauthenticated users. You must implement some form of application security for users to be able to personalize their portlet views. If you are a developer creating portlets, and you want to test the Personalize mode without creating a complete security model for your application, then see Section 74.12, "Configuring Basic Authentication for Testing Portlet Personalization." **Note:** A typical personalization setting is Portlet Title. You can set Portlet Title at design time, by providing a value for the title attribute. Consider however that supplying a value to the title attribute at design time prevents personalization and customization of the portlet title at runtime.
isPreviewModeAvailable	false true Default: false	Whether to enable previewing of portlet content. This mode has no particular application in Portal Framework applications, but it is used in Oracle Portal's Portlet Repository, where it renders as a magnifying glass icon, which users click to preview a portlet.

63.6.7 Style Attributes of the Portlet Tag

Table 63–7 describes the style attributes of the portlet tag.

Table 63–7 Style Attributes of the Portlet Tag

Attribute	Value	Description
`contentStyle`	One or more CSS styles. These should be in compliance with, at least, CSS 2.0 and take the following format: `contentStyle="color:rgb(255,0,255); font-family:Arial Helvetica Geneva sans-serif;font-size:large;"`	The CSS style to apply to the portlet content. Values entered here take precedence over styles specified in the `inlineStyle` attribute and those included in a CSS or skin on the specific portlet instance. For more information, see Understanding contentStyle and inlineStyle Properties.
`inlineStyle`	One or more CSS styles. These should be in compliance with, at least, CSS 2.0 and take the following format: `inlineStyle="color:rgb(255,0,255); font-family:Arial Helvetica Geneva sans-serif;font-size:large;"`	The CSS style to apply to the whole portlet. Values entered here take precedence over styles included in a CSS or skin on the specific portlet instance. For more information, see Understanding contentStyle and inlineStyle Properties.

63.6.8 Binding Attributes of the Portlet Tag

Table 63–8 describes the binding attributes of the portlet tag.

Table 63–8 Binding Attributes of the Portlet Tag

Attribute	Value	Description
`binding`	Name of a managed bean. For example: `binding="#{frameActionsBean.Binding}"` In the Property Inspector, click the Property Menu icon next to the field and then choose **Edit** to select a managed bean and specify the relevant managed bean property.	A binding reference to store the component instance. The binding reference binds an instance of the portlet to a managed bean property. Managed beans are any JavaBeans used by the application that are registered in the JSF `faces-config.xml` file.

63.6.9 Customization Attributes of the Portlet Tag

Table 63–9 describes the customization attributes of the portlet tag.

Table 63–9 Customization Attributes of the Portlet Tag

Attribute	Value	Description

`customizationAllowed`	`false`
	`true`
	Default: `true`
		Whether design time customizations of the portlet tag are allowed on this portlet.

`customizationAllowedBy`	Text string	The roles for which design time customizations are allowed. This attribute enables you to allow customizations, but restrict who can actually perform them.

63.6.10 Other Attributes of the Portlet Tag

Table 63–10 describes the other attributes of the portlet tag.

Table 63–10 Other Attributes of the Portlet Tag

Attribute	Value	Description

`iframeDtd`	`loose`
	`none`
	`strict`
	Default: `loose`
		Which DTD, if any, is specified in the `doctype` declaration that is created when portlet content is rendered inside a IFRAME:
		- `none`—No DTD is specified. This relaxes the restrictions on the HTML content being technically conformant HTML. Browsers usually handle such HTML acceptably, however, because some CSS style sheet from the ADF Faces page consuming the portlet is also imported into the IFRAME document, for that style sheet to work correctly, it may be necessary to declare the content conformant to the loose or strict DTDs.
		- `loose`—The DTD `http://www.w3.org/TR/html/loose.dtd` is used.
		- `strict`—The DTD `http://www.w3.org/TR/html/strict.dtd` is used

63.7 Manually Wiring Parameters and Events in JSR 286 Portlets

If the portlet that you add to your page defines parameters or events that it uses to dynamically alter its content, for the most part this happens automatically. For more information, see Section 63.5.3, "What You May Need to Know About Interportlet Communication."

However, in some circumstances you may find it necessary to turn off the default automatic parameter and event listening, or you may be using portlets with parameters or events with names that do not match or define appropriate aliases. In such situations, you must manually wire the parameters and events in your portlets.

This section includes the following topics:

- Section 63.7.1, "How to Manually Link Portlets with Public Render Parameters"
- Section 63.7.2, "How to Manually Link Portlets with Portlet Events"

63.7.1 How to Manually Link Portlets with Public Render Parameters

When you place a portlet on a page, any public render parameters with the same QName are automatically linked. For example, if one portlet publishes a value to a parameter with the name `myParam`, then if a second portlet on the page accepts values from a parameter with the same name, the second portlet is automatically updated with the appropriate value.

Portlets can also link together using parameters with different QNames if the portlet developer has set up aliases for the parameter.

The following example shows how to use public render parameters to link the behavior of two portlets using parameters with different names and no defined aliases. In the example, we take a generic Parameter Form portlet that allows us to update public render parameters, and show how that can be linked to a Stock Price portlet that renders stock prices, taking the stock symbol from a public render parameter.

When these two portlets are dropped onto the same page, they are not automatically linked together. This is because none of the generic parameter names in the Parameter Form portlet match the `stocksymbol` parameter in the Stock Price portlet, and the Stock Price portlet does not define any aliases for the `stocksymbol` parameter that match the generic parameter names in the Parameter Form portlet.

There are two methods for manually linking parameters: using page variables and using the `ParametersChange` ADF contextual event.

This section includes the following topics:

- Section 63.7.1.1, "Manually Linking Parameters Using Page Variables"
- Section 63.7.1.2, "Manually Linking Parameters Using the ParametersChange ADF Contextual Event"

63.7.1.1 Manually Linking Parameters Using Page Variables

When the portlets are dropped onto a page, page variables are created for each of the parameters supported by the portlets. In our example, there are three page variables for the Parameter Form portlet and one for the Stock Price portlet (Example 63–9).

Example 63–9 Page Variables Created for Portlet Parameters

```
<pageDefinition ...>
  <parameters/>
  <executables>
    <variableIterator id="variables">
      <variable Name="ParameterFormPortlet1_1_Parameter1"
                Type="java.lang.Object"/>
      <variable Name="ParameterFormPortlet1_1_Parameter2"
                Type="java.lang.Object"/>
      <variable Name="ParameterFormPortlet1_1_Parameter3"
                Type="java.lang.Object"/>
      <variable Name="StockPricePortlet1_1_stocksymbol"
                Type="java.lang.Object"/>
    </variableIterator>
    <portlet id="ParameterFormPortlet1_1"
             ...>
      <parameters>
        <parameter name="Parameter1"
                   pageVariable="ParameterFormPortlet1_1_Parameter1"/>
        <parameter name="Parameter2"
                   pageVariable="ParameterFormPortlet1_1_Parameter2"/>
        <parameter name="Parameter3"
                   pageVariable="ParameterFormPortlet1_1_Parameter3"/>
      </parameters>
      <events>
        <event eventType="ParametersChange"
               name="ParameterFormPortlet1_1_Event"/>
      </events>
    </portlet>
    <portlet id="StockPricePortlet1_1"
             ...>
      <parameters>
        <parameter name="stocksymbol"
                   pageVariable="StockPricePortlet1_1_stocksymbol"/>
      </parameters>
      <events>
        <event eventType="ParametersChange"
               name="StockPricePortlet1_1_Event"/>
      </events>
    </portlet>
  </executables>
  <bindings/>
</pageDefinition>
```

To link the portlets, you can make the Stock Price portlet use the value from one of the page variables created for the Parameter Form portlet (Example 63–10).

Example 63–10 Linking Portlet Parameters Using Page Variables

```
<portlet id="StockPricePortlet1_1"
         ...>
  <parameters>
    <parameter name="stocksymbol"
               pageVariable="ParameterFormPortlet1_1_Parameter1"/>
  </parameters>
  <events>
    <event eventType="ParametersChange"
           name="StockPricePortlet1_1_Event"/>
  </events>
</portlet>
```

Now, entering a value in the first parameter field of the Parameter Form portlet sets the corresponding page variable to the same value, which in turn causes the Stock Price portlet to be updated with the new value.

63.7.1.2 Manually Linking Parameters Using the ParametersChange ADF Contextual Event

When you drop a portlet that supports parameters, as well as the page variables discussed in the previous section, an ADF `ParametersChange` contextual event is created for the portlet. This event is triggered when the values of the portlet's parameters change. The payload of the event is the new value of the parameter. You can use this event to set the value of another portlet's parameter by creating an event map in the page definition that maps the payload of the first portlet's event to the second portlet's parameter. Example 63–11 shows how this event map would look for our example.

Example 63–11 Linking Portlet Parameters Using the ParametersChange ADF Contextual Event

```
<eventMap xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
  <event name="ParameterFormPortlet1_1_Event">
    <producer region="ParameterFormPortlet1_1">
      <consumer handler="StockPricePortlet1_1">
        <parameters>
          <parameter name="stocksymbol">
                     value="${payLoad.Parameter1}"/>
        </parameters>
      </consumer>
    </producer>
  </event>
</eventMap>
```

Entering a value in the first parameter field of the Parameter Form portlet triggers the `ParametersChange` event. The payload of this event, the new parameter value, is then sent to the Stock Price Portlet and used to specify the value of the `stocksymbol` parameter.

63.7.2 How to Manually Link Portlets with Portlet Events

The following example shows how to manually link portlets using portlet events in the case where the names of the events defined for the different portlets do not match.

In the example, we have a portlet, the Department Locations portlet, which lists the geographical locations of a company's various offices. The Department Locations portlet raises a portlet event (`latLong`) when a particular department is selected in the portlet.

There is another portlet, the Map portlet, which displays a Google map. The Map portlet listens out for a portlet event (`geolocation`) to use to determine a location to display on a map.

When the two portlets are dropped on a page, there is no way for the Map portlet to know that the event raised by the Department Locations portlet provides information that it can use to display a map. To make this link between the two portlets, you must edit the page definition to explicitly create the mapping between the two events, as shown in Example 63–12.

Example 63–12 Explicit Event Mapping in the Page Definition

```
<pageDefinition ...>
  <parameters/>
  <executables>
    <variableIterator id="variables"/>
    <portlet id="DepartmentLocations1_1"
             ...
      <events>
        <event name="latLong">
          <portletevent namespace-uri="http://xmlns.oracle.com/portlet/EventSample"
                        localpart="latLong"/>
        </event>
      </events>
    </portlet>
    <portlet id="Map1_1"
             ...
      <events>
        <event name="geolocation">
          <portletevent namespace-uri="http://xmlns.oracle.com/portlet/EventSample"
                        localpart="geolocation"/>
        </event>
      </events>
    </portlet>
  </executables>
  <bindings/>
  <eventMap xmlns="http://xmlns.oracle.com/adfm/contextualEvent">
    <event name="{http://xmlns.oracle.com/portlet/EventSample}latLong">
      <producer region="DepartmentLocations1_1">
        <consumer handler="Map1_1.{http://xmlns.oracle.com/portlet/EventSample}geolocation"/>
      </producer>
    </event>
  </eventMap>
</pageDefinition>
```

63.8 Copying Portlets

When you copy portlets, the portlets and their copies must reside within the same application. For example, you can copy a portlet from one page in an application to another page in the same project in that application, or from one place on a page to another place on the same page. You can also copy a portlet from one project to another project in the same application, if the target project is configured for consuming portlets. The copies are references to the same portlet instance, so customizations or personalizations made to any instance of the portlet (original or copy) affect all the other instances.

Copying a portlet is more than a matter of copying and pasting the portlet view tag. It involves copying portlet-related entries from the application page's source. It may also involve copying portlet-related entries from the page definition file and removing duplicate portlet binding information or creating a new method in the copied portlet's binding bean.

When a portlet is copied, the target page must be an Oracle ADF Faces page. Any preexisting code on the target page must reflect that. This is quite easy to accomplish. When JDeveloper creates a new JSF page, it contains pure JSF tags. The first time you drop an Oracle ADF Faces component onto the page, tags are automatically updated to be Oracle ADF Faces tags. For example, an `<html>` tag becomes `<afh:html>`, `<head>` and `<title="title">` tags become `<afh:head title="title">`, and so on. Therefore, a simple way to ensure the conversion of the target page to an Oracle ADF Faces page is to place any Oracle ADF Faces component on the target page. This performs any required code conversion for you automatically.

This section includes the following topics:

- Section 63.8.1, "How to Copy a Portlet and Place it on the Same Page"
- Section 63.8.2, "How to Copy a Portlet from One Application Page to Another"

63.8.1 How to Copy a Portlet and Place it on the Same Page

Because all of the page's resources are available to both portlet instances when you copy a portlet to the same page, there is no requirement to copy portlet-related information from the page's Page Definition file. It is just a matter of copying and pasting the portlet's view tag, and assigning a unique identifier to the copy.

To copy and place a portlet on the same page:

1. In the Application Navigator, open the application that contains the page on which the portlet to copy appears.
2. Expand the project that contains the page.
3. Locate the page, right-click it, and then choose **Open.**

   Tip: You can also double-click the page to open it.

4. In the design view, select the portlet to copy.
5. Click the **Source** tab. The portlet that you selected is highlighted in the source code.
6. Copy the portlet tag (Example 63–13).

Example 63–13 Code Fragment to be Copied When Copying a Portlet

```
<f:view>
   <afh:html binding="#{backing_portlet_page.html1}" id="html1">
      <afh:head title="portlet_page" binding="#{backing_portlet_page.head1}"
         id="head1">
         <meta http-equiv="Content-Type"
            content="text/html;charset=windows-1252"/>
      </afh:head>
      <afh:body binding="#{backing_portlet_page.body1}" id="body1">
         <h:form binding="#{backing_portlet_page.form1}" id="form1">
            <adfp:portlet value="#{bindings.portlet1}"
               portletType="/oracle/adf/portlet/
               pdksampleproducer_1153245807295/applicationPortlets/
               Portlet2_82d49b79_010c_1000_8006_82235ffc4e2b"
               binding="#{backing_portlet_page.portlet1}"
               id="portlet1"
               isCustomModesAvailable="true"/>
         </h:form>
      </afh:body>
   </afh:html>
</f:view>
```

7. Paste the copied code fragment into the desired location of the page source.
8. Provide a unique value for the copy's `id` attribute (Example 63–14).

Example 63–14 Changing the Portlet ID

```
<adfp:portlet value="#{bindings.portlet1}"
   portletType="/oracle/adf/portlet/
   pdksampleproducer_1153245807295/applicationPortlets/
   Portlet2_82d49b79_010c_1000_8006_82235ffc4e2b"
   binding="#{backing_portlet_page.portlet1}"
   id="portlet2"
   isCustomModesAvailable="true"/>
```

> **Note:** On a given page, each portlet must have a unique ID.

9. In the page source, if the copied portlet's `adfp:portlet` tag has a binding attribute, for example:

   ```
   binding="#{backing_untitled2.portlet1}"
   ```

   Then either remove this binding, or create a new method in the binding bean by opening the managed bean class for this managed bean and defining the new method.

   For example, if portlet1 is copied, the pasted copy becomes portet2 in the managed bean class, as shown in Example 63–15.

Example 63–15 Creating a New Method for a Managed Bean in the Managed Bean Class

```
.
private PortletBase portlet2;
public void setPortlet2(PortletBase portet2)  {
     this.portlet2 = portlet2;
}
.
public PortletBase getPortlet2()  {
     return portlet2;
}
```

10. From the main menu, choose **File > Save All.**

63.8.2 How to Copy a Portlet from One Application Page to Another

When you copy a portlet from one page to another in an application, portlet-related code must also be copied from the source page's Page Definition file. This section describes the steps related to both copying from one application page to another and from one application project to another.

To copy a portlet from one page to another:

1. In the Application Navigator, open the application that contains the page on which the portlet to copy appears.
2. Expand the project that contains the page.
3. Locate the page, right-click it, and then choose **Open.**

   Tip: You can also double-click the page to open it.

4. In the design view, select the portlet to copy.
5. Click the **Source** tab. The portlet that you selected is highlighted in the source code.
6. Copy the portlet tag (Example 63–16).

Example 63–16 Source Page Code Fragment to Be Copied When Copying a Portlet

```
<f:view>
   <afh:html binding="#{backing_portlet_page.html1}" id="html1">
      <afh:head title="portlet_page" binding="#{backing_portlet_page.head1}"
         id="head1">
         <meta http-equiv="Content-Type"
            content="text/html;charset=windows-1252"/>
      </afh:head>
      <afh:body binding="#{backing_portlet_page.body1}" id="body1">
         <h:form binding="#{backing_portlet_page.form1}" id="form1">
            <adfp:portlet value="#{bindings.portlet1}"
               portletType="/oracle/adf/portlet/
               pdksampleproducer_1153245807295/applicationPortlets/
               Portlet2_82d49b79_010c_1000_8006_82235ffc4e2b"
               binding="#{backing_portlet_page.portlet1}"
               id="portlet1"
               isCustomModesAvailable="true"/>
         </h:form>
      </afh:body>
   </afh:html>
</f:view>
```

7. Go to the application page to which to copy the portlet (the target page).

   Portlets can reside only on Oracle ADF Faces pages. If the target page does not contain Oracle ADF Faces components, then ensure that the container objects—that is, any tags the portlet tag is nested in—use Oracle ADF tags.

   If you are copying the portlet to a page in a different project, the target project must be configured for consuming portlets. To configure the project, you must register a portlet producer with the project. For information, see Section 63.2.1, "Registering a WSRP Portlet Producer with a WebCenter Portal Framework Application" or Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

8. Click the **Source** tab and paste the copied code fragment into the desired location of the page source.

9. In the Application Navigator, right-click the source page (the page from which the portlet was copied), and choose **Go to Page Definition.**

10. Click the **Source** tab and copy the portlet binding from the source page's page definition file (Example 63–17).

Example 63–17 Code Fragment to Be Copied From a Page Definition File

```
<portlet id="portlet1"
  portletInstance="/oracle/adf/portlet/pdksampleproducer_
1153245/applicationPortlets/Portlet2_82d49_010c_1000_8006_82235"
  class="oracle.adf.model.portlet.binding.PortletBinding"
  xmlns="http://xmlns.oracle.com/portlet/bindings"/>
```

> **Note:** When the portlet being copied includes parameters, be sure to include the copied portlet's portlet parameters and the page variables linked to the portlet parameters in the copy.

11. In the Application Navigator, right-click the target page and choose **Go to Page Definition.**

    If a page definition does not exist for the page, you are asked if you want to create one. Click **Yes.**

12. Click the **Source** tab and paste the portlet binding you copied from the source (along with relevant portlet parameters and the page variables associated with those parameters).

    Paste the code between the `<executables>` tags. You may need to add a closing `</executables>` tag and ensure that the opening tag does not contain a slash (`/`).

13. From the main menu, choose **File > Save All.**

63.9 Deleting Portlets from Application Pages

When you delete a portlet from an application page, if the portlet had parameters, then you should also delete page variables associated with those parameters from the application page's Page Definition file.

To delete a portlet and its related page variables from a page:

1. In the Application Navigator, open the application that contains the page on which the portlet to delete appears.

2. Expand the project that contains the page.

3. Locate the page, right-click it, and then choose **Open.**

   > **Tip:** You can also double-click the page to open it.

4. In the design view, right-click the portlet to delete and choose Delete.

   This deletes the portlet from the page and the portlet binding from the Page Definition file.

5. If the portlet included variables, in the Application Navigator, right-click the page and choose **Go to Page Definition.**

6. Click the **Source** tab and locate the page variables associated with the deleted portlet, and delete them from the page definition file.

   For example, if you deleted portlet1, you would also delete the highlighted variables in Example 63–18:

Example 63–18 Deleting Portlet-Related Page Variables from a Page Definition File

```
<?xml version="1.0" encoding="UTF-8" ?>
<pageDefinition xmlns="http://xmlns.oracle.com/adfm/uimodel"
      version="10.1.3.38.97" id="untitled1PageDef"
      Package="project1.pageDefs">
   <parameters/>
   <executables>
      <variableIterator id="variables">
            <variable Name="portlet1_param1" Type="java.lang.Object"/>
            <variable Name="portlet1_param2" Type="java.lang.Object"/>
            <variable Name="portlet2_param1" Type="java.lang.Object"/>
            <variable Name="portlet2_param2" Type="java.lang.Object"/>
      </variableIterator>
      <portlet id="portlet2" portletInstance="/oracle/adf/portlet/
            PdkPortletProducer2_1154100666247/applicationPortlets/
            Portlet1_b5e49696_010c_1000_8008_8c5707ef9c4f"
            class="oracle.adf.model.portlet.binding.PortletBinding"
            xmlns="http://xmlns.oracle.com/portlet/bindings">
         <parameters>
             <parameter name="param1" pageVariable="portlet2_param1"/>
             <parameter name="param2" pageVariable="portlet2_param2"/>
         </parameters>
      </portlet>
   </executables>
   <bindings/>
</pageDefinition>
```

7. From the main menu, choose, select **File > Save All**.

63.10 Consuming WebCenter Services Portlets

WebCenter Services Portlets is a preconfigured, out-of-the-box producer that enables you to expose WebCenter Portal tools and services task flows in other applications as WSRP portlets or pagelets.

WebCenter Services Portlets provides the following portlets:

- Document Manager—Displays folders, files, and wikis from the WebCenter Content repository
- Blogs—Displays blog posts from a selected location in the WebCenter Content repository
- Discussion Forums—Displays all discussions and their respective replies and enables users to perform various operations based on their privileges
- Announcements—Displays all current announcements and enables users to perform various operations based on their privileges
- Lists—Displays user-created lists and provides controls for creating lists and adding list data
- Polls Manager—Enables users to perform administrative operations on polls

- Take Polls—Displays the most recently published available poll, or a specific poll identified by the pollId parameter
- Mail—Displays a mail inbox
- Activity Stream—Provides an overview of the most recent activities performed by a user's connections
- Tag Cloud—Displays a tag cloud, which is a visual depiction of all the tags used on the page

You can consume WebCenter Services Portlets in the following applications:

- Oracle Portal
- Oracle WebLogic Portal
- Oracle WebCenter Interaction, using Oracle WebCenter Portal's Pagelet Producer

The WebCenter Services Portlets producer is a WSRP producer. As such, you register it with your application in the same way as you would any other WSRP producer.

> **Note:** The WebCenter Services Portlets producer is a secured producer, so when you register the producer, you must use the same token as was used when configuring the producer in WebCenter Portal.
>
> For information about configuring the WebCenter Services Portlets producer, see the "Configuring WebCenter Services Portlets" section in *Administering Oracle WebCenter Portal*.

This section includes the following topics:

- Section 63.10.1, "How to Consume WebCenter Services Portlets in Oracle Portal"
- Section 63.10.2, "How to Consume WebCenter Services Portlets in Oracle WebLogic Portal"
- Section 63.10.3, "How to Consume WebCenter Services Portlets in Oracle WebCenter Interaction"
- Section 63.10.4, "How to Set WebCenter Services Portlets Parameters"
- Section 63.10.5, "WebCenter Services Portlets Limitations"
- Section 63.10.6, "Troubleshooting Problems with WebCenter Services Portlets"

63.10.1 How to Consume WebCenter Services Portlets in Oracle Portal

To consume WebCenter Services Portlets in Oracle Portal:

1. Register the WebCenter Services Portlets WSRP producer in Oracle Portal.

   For information about how to do this, see the "Securing Access to Web Services Remote Portlets" section in the *Administrator's Guide for Oracle Portal*.

2. After registering the producer, you can then add any of the portlets provided by the producer to pages in your Oracle Portal application.

   For information about how to do this, see the "Adding a Portlet to a Page" section in the *User's Guide for Oracle Portal*.

63.10.2 How to Consume WebCenter Services Portlets in Oracle WebLogic Portal

To consume WebCenter Services Portlets in Oracle WebLogic Portal:

1. Register the WebCenter Services Portlets WSRP producer in Oracle WebLogic Portal.

   For information about how to do this, see the "Adding a Producer" section in the *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*.

2. Add the remote portlets to the Portal Library.

   For information about how to do this, see the "Adding a Remote Portlet to the Portal Library" section in the *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*.

3. The WebCenter Services Portlets producer is a secured WSRP producer, so you must set up the SAML security.

   For information about how to do this, see the "SAML Security Between a WebLogic Portal Consumer and a WebCenter Portal: Framework Application Producer" section in the *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*.

4. After registering the producer and setting up the security, you can then add any of the portlets provided by the producer to pages in your Oracle WebLogic Portal application.

   For information about how to do this, see the "Adding Contents to a Page" section in the *Oracle Fusion Middleware Portal Development Guide for Oracle WebLogic Portal*.

63.10.3 How to Consume WebCenter Services Portlets in Oracle WebCenter Interaction

To consume WebCenter Services Portlets in Oracle WebCenter Interaction:

1. To make WebCenter Services Portlets available in Oracle WebCenter Interaction, you must first register the producer as a pagelet producer using Oracle WebCenter Portal's Pagelet Producer.

   For information about how to do this, see the "Registering WSRP and Oracle JPDK Portlet Producers in the Pagelet Producer" section in *Administering Oracle WebCenter Portal*.

   > **Note:** You must select the same **Token Profile** that was specified when configuring WS-Security for WebCenter Services Portlets.

2. After creating the pagelet producer, you must then register it with Oracle WebCenter Interaction.

   For information about how to do this, see the "Creating the Oracle WebCenter Pagelet Producer Remote Server" section in the *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Interaction*.

3. When the pagelet producer is registered with your Oracle WebCenter Interaction application, you must then create remote pagelet web services for each of the pagelets that you want to use.

   For information about how to do this, see the "Creating or Editing a Remote Pagelet Web Service" section in the *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Interaction*.

4. Next, create portlets for the pagelets.

   For information about how to do this, see the "Creating or Editing a Portlet" section in the *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Interaction*.

5. Finally, you can add the portlets to your Oracle WebCenter Interaction community pages.

   For information about how to do this, see the "Creating a Community Page" section in the *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Interaction*.

63.10.4 How to Set WebCenter Services Portlets Parameters

Each portlet provided by WebCenter Services Portlets defines various parameters that enable you to change the appearance or behavior of the portlet when you consume it in your application.

This section includes the following topics:

- Section 63.10.4.1, "Common WebCenter Services Portlets Parameters"
- Section 63.10.4.2, "Document Manager Portlet Parameters"
- Section 63.10.4.3, "Discussion Forums Portlet Parameters"
- Section 63.10.4.4, "Blogs Portlet Parameters"
- Section 63.10.4.5, "Lists Portlet Parameters"
- Section 63.10.4.6, "Polls Manager Portlet Parameters"
- Section 63.10.4.7, "Take Polls Portlet Parameters"
- Section 63.10.4.8, "Announcements Portlet Parameters"
- Section 63.10.4.9, "Mail Portlet Parameters"
- Section 63.10.4.10, "Activity Stream Portlet Parameters"
- Section 63.10.4.11, "Tag Cloud Portlet Parameters"

63.10.4.1 Common WebCenter Services Portlets Parameters

Table 63–11 lists the parameters that are available for all the portlets provided by WebCenter Services Portlets.

Table 63–11 Common Parameters for WebCenter Services Portlets

Parameter	Description
`width`	Specifies the width of the portlet on the consuming page. If not specified, the portlet takes up as much horizontal space as the page allows.
`height`	Specifies the height of the portlet on the consuming page. If not specified, the portlet height is determined by the portlet consumer.

63.10.4.2 Document Manager Portlet Parameters

Table 63–12 lists the additional parameters available for the Document Manager portlet.

Table 63–12 Document Manager Portlet Parameters

Parameter	Description
`connectionName`	The name of the Oracle Content Server connection used by WebCenter Services Portlets. If no value is selected, the default connection specified by the application developer or administrator is used. For information about configuring content repository connections, see the "Registering Content Repositories for WebCenter Portal or Portal Framework Applications" section in *Administering Oracle WebCenter Portal*. Default: The connection selected as default in the Create Content Repository Connection dialog box by the application developer, which can be changed by the administrator.
`featuresOff`	A list of disabled features for the portlet. Use commas or spaces to separate items. Valid values are exposed in the JavaDoc: `checkin, checkout, clipboard, close, delete, download, dnd, editwiki, editoffice, newfolder, newwiki, rename, upload, multifile-upload, profile-upload, search, advancedSearch, workflow, properties, history, comments, likes, links, tags, recommendations, autovue, title, related-items, social, sidebars, ils.` Example: `${'search, advancedSearch, clipboard, dnd, rename, newfolder, upload, newwiki, checkin, checkout, editoffice, edithtml, delete, sidebars, history'}`
`layout`	A target layout for the task flow. Select from: ■ `${'explorer'}`—(default) Displays folders and files in two panes; the left pane shows folders, and the right pane show the contents of the currently selected folder ■ `${'table'}`—Displays only the contents of the current folder in a single pane, with the capability to click a folder to drill down, refreshing the pane with the folder contents ■ `${'treeTable'}`—Displays the folder hierarchy in a single pane, beginning with the root folder, with the capability to expand and collapse folders
`pageSize`	The maximum number of rows to show in the portlet. If the listing of folders and files in the portlet is larger than the specified number of rows, the portlet displays a scroll bar. Default: `27` **Note:** If you set `pageSize` to a value that is too big for the size of the screen, the end user will experience difficulty coordinating the portlet scroll bar with the application scroll bar.
`readOnly`	Specifies whether to disable and hide all content management operations: ■ `${true}`—Disable content management ■ `${false}`—(Default) Expose content management to users
`resourceId`	The currently focused resource. This value can be a folder ID or a document ID.
`startFolderPath`	The name of the folder to use as the root folder in the current portlet instance. This is a content-scoping parameter that assists with determining the source and range of content to display in the portlet instance. You can specify an EL expression to set this value. Example: `${'/WebCenterB5/Proj_X/Specs'}`

63.10.4.3 Discussion Forums Portlet Parameters

Table 63–13 lists the additional parameters available for the Discussion Forums portlet.

Table 63–13 Discussion Forums Portlet Parameters

Parameter	Description
`categoryId`	An identifier for an existing category in WebCenter Portal's Discussion Server to which the view should be scoped. When no value is supplied, it defaults to the appropriate root category of the discussions server. (This root category ID can be overridden by supplying an additional property named application.root.category.id in the connection.) For testing purposes, you may want to create a category through the discussions server administrator interface and then reference that category identifier here.
`forumId`	An identifier for an existing forum in your discussions server for which popular topics should be fetched. If both categoryId and forumId are given, then only categoryId is honored.
`showRecursiveForums`	Determines if the portlet shows forums either in a category only or in subcategories. True means all forums under a given category/subcategory are shown; false means only the category's direct child forums are shown. The default value is false. Note: A value of true can impact performance.
`isCategoryView`	Determines if the forums are grouped under the Category ID category or the topics are grouped under the Forum ID forum. True means the portlet displays the forums classified under categoryId; false means the portlet displays the topics associated with the specified forumId. The default value is false. This parameter works in combination with other parameters.

63.10.4.4 Blogs Portlet Parameters

Table 63–14 lists the additional parameters available for the Blogs portlet.

Table 63–14 Blogs Portlet Parameters

Parameter	Description
`hideComments`	Specifies whether or not to display blog post comments: ■ true—Comments are shown for blog posts ■ false—(Default) Comments are hidden for blog posts
`pageSize`	Specifies how many blog posts to show before pagination is displayed and users can select to go to the next page. By default, up to 10 blog posts can be displayed on a blog page.

Table 63–14 (Cont.) Blogs Portlet Parameters

Parameter	Description
`resourceId`	Specifies the unique identifier of the selected folder. The value can be specified in the following formats: ■ *`connection_name`*`/`*`path_to_folder`* where *`connection_name`* is the name of the Oracle Content Server connection used by WebCenter Services Portlets, and *`path_to_folder`* is the path to the folder on Oracle Content Server that you want to expose as a blog. ■ *`connection_name`*`#dCollectionID:`*`dCollectionId`* where *`connection_name`* is the name of the Oracle Content Server connection used b WebCenter Services Portlets, and *`dCollectionId`* is the collection ID of the folder on Oracle Content Server that you want to expose as a blog.

63.10.4.5 Lists Portlet Parameters

The Lists portlet does not include any additional parameters.

63.10.4.6 Polls Manager Portlet Parameters

Table 63–15 lists the additional parameters available for the Polls Manager portlet.

Table 63–15 Polls Manager Portlet Parameters

Parameter	Description
`showUserDataOnly`	Determines whether to display all polls or only those polls created by the user. The default (`No`) is to show all polls. Set to `Yes` to display only those polls created by the user.

63.10.4.7 Take Polls Portlet Parameters

Table 63–16 lists the additional parameters available for the Take Polls portlet.

Table 63–16 Take Polls Portlet Parameters

Parameter	Description
`pollId`	The ID of the poll to display.

63.10.4.8 Announcements Portlet Parameters

Table 63–17 lists the additional parameters available for the Announcements portlet.

Table 63–17 Announcements Portlet Parameters

Parameter	Description
`parentId`	The forum ID in the discussions server under which announcement objects are maintained. Each application should create a forum on the discussions server. Enter that forum ID here, for example `${2}`. If this parameter is not specified, then amusements default to global announcements.

63.10.4.9 Mail Portlet Parameters

Table 63–18 lists the additional parameters available for the Mail portlet.

Table 63–18 Mail Portlet Parameters

Parameter	Description
`tabularView`	Using the EL value type, enter a value of true to display the information associated with a mail message, such as its subject, sender, and, date sent, in a tabular format. If this parameter is set to false, then mail messages render in a list view.

63.10.4.10 Activity Stream Portlet Parameters

Table 63–19 lists the additional parameters available for the Activity Stream portlet.

Table 63–19 Activity Stream Portlet Parameters

Parameter	Description
`advancedQuery`	A field for specifying a custom query to filter streamed items. For more information, see Section 39.4, "About the Activity Stream Advanced Query Option."
`enableContextInfo`	A means of showing or omitting detailed information about the object in the current context (that is, in a popup or other contextual instrument). ■ Enter `#{true}` to enable Activity Stream to display the `af:contextInfo` component (a small, red dot). Users can click this dot to view object detail information. ■ Enter `#{false}` to omit object detail information. When this parameter is true and the `contextInfoTaskflowId` in the service definition is defined, the activity from the service displays the `af:contextInfo`. Otherwise, no context information is shown.
`hideComments`	A means of showing or hiding the Comments feature on streamed activities. Enter `true` to hide the Comments feature. Enter `false` to show it.
`hideConfigure`	A means of hiding the personalization option on the task flow instance.
`hideInlinePreview`	A means of allowing or omitting an inline preview of files attached to streamed activities. Enter `true` to omit a file preview. Enter `false` to show it.
`hideLike`	A means of showing or hiding the Like link on a streamed activity. Enter `true` to hide the Like link. Enter `false` to show it.
`hideShare`	A means of showing or hiding the Share menu on streamed activities. Enter `true` to hide the Share menu. Enter `false` to show it.
`pageSize`	The number of items to stream in a given task flow instance.
`pagination`	The form of pagination to use on a multipage stream. ■ Enter `#{true}` to show Previous and Next links. ■ Enter `#{false}` hide to omit Previous and Next links. Instead, a more link is rendered, enabling users to navigate to a fuller view of the task flow where all streamed activities are shown.

Table 63–19 (Cont.) Activity Stream Portlet Parameters

Parameter	Description
`profileOnly`	A means of streaming activities only from user profiles. - Enter `true` to stream only those activities associated with user profiles - Enter `false` to stream other types of activities along with those associated with user profiles
`resourceId`	The current user ID. Enter `#{securityContext.userName}` to return the current user.

`serviceCategories`	A field for entering a comma-separated list of names of services from which to stream activities.
	Use this parameter to limit the display of streamed activities to only those associated with the specified service or services. Enter one or more service IDs, for example:
	`oracle.webcenter.collab.announcement,`
	`oracle.webcenter.collab.forum`
	For a list of valid service ID, see Table G–7. Note that all listed service IDs cannot be used because all services do not stream items to the Activity Stream. For example, the RSS service does not stream any activities.

63.10.4.11 Tag Cloud Portlet Parameters

The Tag Cloud portlet does not include any additional parameters.

63.10.5 WebCenter Services Portlets Limitations

This section identifies limitations with WebCenter Portal services when they are accessed remotely using WebCenter Services Portlets.

- WebCenter Services Portlets do not include the **Send Mail** option to email links to resources, for example wikis.
- WebCenter Services Portlets do not support the **View Profile** option when clicking a user name.
- WebCenter Services Portlets do not support recommendations.
- WebCenter Services Portlets do not support anonymous access.
- WebCenter Services Portlets no longer supports a Worklist portlet.

  Consider using the Task List task flow provided by Oracle Business Process Management instead. For more information, see the "Creating Custom ADF Applications with Oracle Business Process Management Workspace Task Flows" appendix in *User's Guide for Oracle Business Process Management*.
- When creating a link to a discussion forum from another WebCenter Services Portlet, such as the Document Manager or Blogs portlet, only discussion forums with a category ID of 0 are listed.
- RSS is not supported within the Discussion Forums, Lists, and Announcements portlets.
- The Mail portlet does not support the **Find Users** option when composing messages. Recipients must be entered manually.

- The **Download URL** option is not available from the **View** menu in the Document Manager. Instead, users must access the URL provided in the **Direct URL** field to view the document, and then click the Download button.
- The **Edit with Word** option is not available from the **File** menu in the Document Manager portlet.
- When using a link from the **Get a Link** option of the Document Manager or Blogs portlet, you must open the link in a new browser session. You cannot open the link in a new tab of the same browser session that is currently running the portlet.
- The **Subscribe** option, accessed from the **File** menu, is not supported in the Document Manager or Blogs portlets.
- The **Share** option is not available from the **Edit** menu when viewing a blog in the Blogs portlet.

63.10.6 Troubleshooting Problems with WebCenter Services Portlets

This section provides information to assist you in troubleshooting problems you may encounter when using WebCenter Services Portlets.

This section includes the following topics:

- Section 63.10.6.1, "External Link in Announcements or Discussion Forum Portlet Not Working"
- Section 63.10.6.2, "Get a Link Option in Document Manager and Blogs Portlets Not Working"
- Section 63.10.6.3, "Recommendations Tab in Document Manager and Blogs Portlets Is Empty"
- Section 63.10.6.4, "Unable to Embed an Image into a Blog"
- Section 63.10.6.5, "Selected Text Is Lost When Creating a Link in a Blog Post or Wiki"

63.10.6.1 External Link in Announcements or Discussion Forum Portlet Not Working

Problem

When users click a link to an external web page in the Announcements or Discussion Forum portlet nothing displays.

Cause

WebCenter Services Portlets are displayed inside inline frames. Some web sites, for example Google, do not display inside an inline frame if the parent frame does not have the same origin. Therefore, if you link to one of these web sites within the Announcements or Discussion Forum portlet, the link does not display.

Solution

When linking to an external web page from the Announcements or Discussion Forums portlet, it is recommended that you display the target in a new browser tab or window. To do this, add the `target="_blank"` attribute to the link. For example:

```
<a href="http://www.google.com" target="_blank">Google</a>
```

63.10.6.2 Get a Link Option in Document Manager and Blogs Portlets Not Working

Problem

When consuming the Document Manager or Blogs portlet in Oracle WebCenter Interaction, the link provided from the **Get a Link** option of the **View** menu does not work in Microsoft Internet Explorer.

Cause

Oracle WebCenter Interaction accesses WebCenter Services Portlets through a pagelet producer. As such, when you consume a WebCenter Services Portlets portlet on a page in Oracle WebCenter Interaction, the portlet's underlying pagelet is accessed using an `injectpagelet` JavaScript call. This can result in links within the portlet that exceed Internet Explorer's 2KB limit for URLs.

Solution

Replace the `injectpagelet` JavaScript call with an HTML portlet that references the pagelet in an inline frame. An inline frame results in shorter URLs which are less likely to exceed Internet Explorer's 2KB limit.

For example, by default, Oracle WebCenter Interaction might provide the following call to access the Document Manager portlet:

```
<script type='text/javascript'>
  injectpagelet("ServicesPortlets_PS6_49823a17-f56d-41cf-b50e-3506b4394f25",
  "Document_Manager", "iframe ifheight=650px ifwidth=100%", "",
  "resourceId=dev-ucm%23dDocName%3ADSS000411", "", "", "", "none", false);
</script>
```

Replace this call with an HTML portlet that includes the following inline frame:

```
<iframe id="pt-pagelet-iframe-1" frameborder="0" height='650px' width='100%'
  src='http://server.example.com:7777/inject/v2/pagelet/
  ServicesPortlets_PS6_49823a17-f56d-41cf-b50e-3506b4394f25/Document_Manager
  ?content-type=html&csapi=true&instanceid=1&chrome=none&consumepage=true
  &resourceId=dev-ucm%23dDocName%3ADSS000411'>
</iframe>
```

63.10.6.3 Recommendations Tab in Document Manager and Blogs Portlets Is Empty

Problem

The **Recommendations** tab in the Documentation Manager and Blogs portlets does not list any recommendations.

Cause

WebCenter Services Portlets do not support recommendations.

Solution

To remove the **Recommendations** tab from the Document Manager or Blogs portlet, edit the portlet and set the `featureOff` parameter to `recommendations`.

63.10.6.4 Unable to Embed an Image into a Blog

Problem

When consuming the Blogs portlet in Oracle WebCenter Interaction, images cannot be embedded in a blog post.

Cause

If the file name of the image is long, for example 250 characters or more, the length of the resource URL used for the image in the blog may exceed the supported limit.

Solution

Reduce the length of the image file name.

Alternatively, it is recommended that when consuming WebCenter Services Portlets in Oracle WebCenter Interaction, you should place portlets within an HTML portlet. For more information, see the solution in Section 63.10.6.2, "Get a Link Option in Document Manager and Blogs Portlets Not Working."

63.10.6.5 Selected Text Is Lost When Creating a Link in a Blog Post or Wiki

Problem

When you select text in a blog post or wiki and click the **Select Resource** or **New Resource** icon to create a link, the selected text disappears.

Cause

The selected text is temporarily replaced with an insertion cursor while the link is created.

Solution

No action is required. When you finish creating the link, or cancel the operation, the selected text is restored.

63.11 Troubleshooting Portlets

This section provides information to assist you in troubleshooting problems you may encounter while using portlets. It contains the following topics:

- Section 63.11.1, "Diagnostic Tools for Troubleshooting Portlets"
- Section 63.11.2, "Configuring the Portlet Logging File"
- Section 63.11.3, "Portlet Displays a Portlet Consumer Error"
- Section 63.11.4, "Portlet Displays a Portlet Timeout"
- Section 63.11.5, "Portlet Displays a Remote Portlet Communication Error"
- Section 63.11.6, "Portlet Displays a Remote Portlet Error"

63.11.1 Diagnostic Tools for Troubleshooting Portlets

There is a set of tools available for both the consumer and producer to help identify and resolve issues with portlets.

If you encounter a portlet error message when a portlet is rendered, or if the portlet displays but you cannot interact correctly with it, there are some general steps using these tools that you should follow to diagnose the issue.

This section includes the following topics:

- Section 63.11.1.1, "Identify the Portlet Instance"
- Section 63.11.1.2, "Examine the Portlet Consumer Test Page"
- Section 63.11.1.3, "Examine the Producer Test Page"

63.11.1.1 Identify the Portlet Instance

The first step when you encounter a portlet error, is to identify which portlet producer and portlet instance is being invoked. Execute the `portletDebugShow()` JavaScript from your browser to display this information in the main portlet content area.

To identify the portlet instance:

1. Enter the following command in the Location field of your browser:

   ```
   javascript:portletDebugShow()
   ```

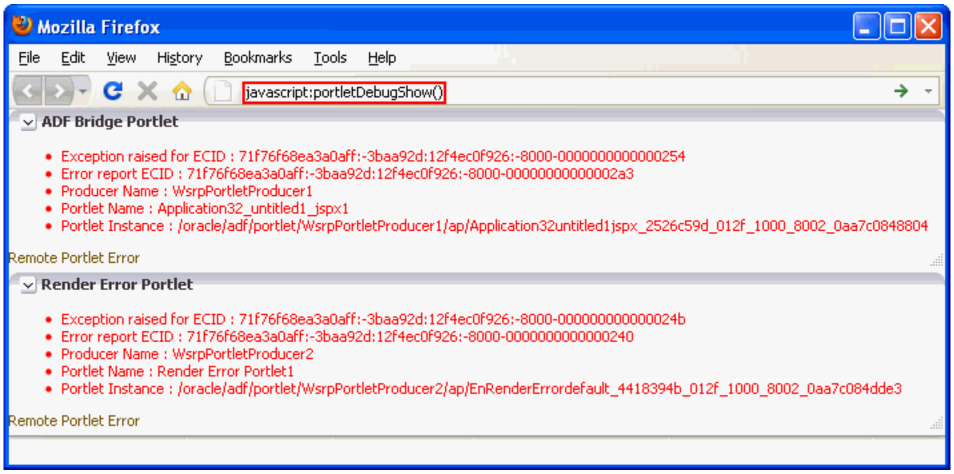
   > **Tip:** In Internet Explorer and Google Chrome, you must type this command in the Location field. If you paste the command into the field, the `javascript` piece is removed.
   >
   > In Firefox 6 and above, you cannot enter JavaScript in the Location field, you must enter the command in JavaScript console.

2. After running the script, every portlet now displays the following information:

   - Producer name
   - Portlet name
   - Portlet instance ID
   - Execution Context IDs (ECIDs)

     The ECIDs are unique IDs used to identify a portlet request. Use the ECIDs to correlate the messages across different consumer and producer log files using Fusion Middleware Control. The same ECID is propagated from the consumer to the producer. For more information, see the "Correlating Messages Across Log Files and Components" section in the *Administrator's Guide*.

   > **Note:** Broken portlets show two ECIDs: one for the request in which the error occurred and one for request in which the error was reported. For inline portlets (that is, portlets that are not displayed in an IFRAME), these two ECIDs are the same.
   >
   > For IFRAME portlets, for example Oracle JSF Portlet Bridge portlets, the ECIDs are different. This is because the error is reported in a later request than the one in which the original exception occurred. When checking the logs, you should look for both ECIDs, as either may contain relevant information.



javascript:portletDebugShow()

ADF Bridge Portlet

- Exception raised for ECID : 71f76f68ea3a0aff:-3baa92d:12f4ec0f926:-8000-0000000000000254
- Error report ECID : 71f76f68ea3a0aff:-3baa92d:12f4ec0f926:-8000-00000000000002a3
- Producer Name : WsrpPortletProducer1
- Portlet Name : Application32_untitled1_jspx1
- Portlet Instance : /oracle/adf/portlet/WsrpPortletProducer1/ap/Application32untitled1jspx_2526c59d_012f_1000_8002_0aa7c0848804

Remote Portlet Error

Render Error Portlet

- Exception raised for ECID : 71f76f68ea3a0aff:-3baa92d:12f4ec0f926:-8000-000000000000024b
- Error report ECID : 71f76f68ea3a0aff:-3baa92d:12f4ec0f926:-8000-0000000000000240
- Producer Name : WsrpPortletProducer2
- Portlet Name : Render Error Portlet1
- Portlet Instance : /oracle/adf/portlet/WsrpPortletProducer2/ap/EnRenderErrordefault_4418394b_012f_1000_8002_0aa7c084dde3

Remote Portlet Error

You can use this information in the subsequent diagnostic steps to help locate the issue.

Note: The ECIDs shown in the portlet diagnostic information do not reflect partial page rendering requests that have been made to the portlet producer (using the portlet consumer resource proxy). These requests may update the portlet, but the ECIDs are not recorded in the portlet diagnostic information. Errors that occur during these requests are logged on the producer and by the portlet resource proxy on the consumer but you cannot use the ECID information reported in the portlet diagnostic information to help you determine the ECIDs for the relevant log entries.

3. When you have finished debugging the portlets, enter the following command to hide the portlet debugging information:

```
javascript:portletDebugHide()
```

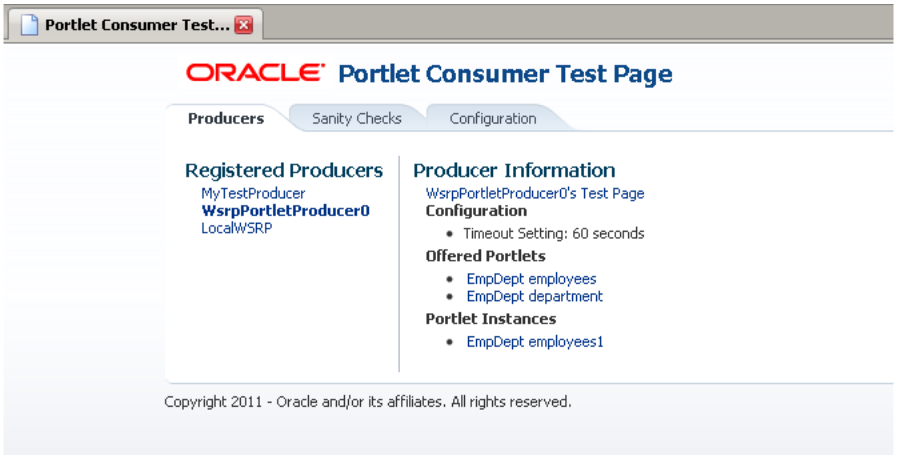
Tip: In Internet Explorer and Google Chrome, you must type this command in the Location field. If you paste the command into the field, the `javascript` piece is removed.

In Firefox 6 and above, you cannot enter JavaScript in the Location field, you must enter the command in JavaScript console.

63.11.1.2 Examine the Portlet Consumer Test Page

The next step in diagnosing a portlet error is to access the Portlet Consumer Test Page (shown in Figure 63–2) to locate the portlet producer and, if necessary, test the portlet in isolation.

Figure 63–2 The Portlet Consumer Test Page



Portlet Consumer Test Page

Registered Producers
MyTestProducer
WsrpPortletProducer0
LocalWSRP

Producer Information
WsrpPortletProducer0's Test Page
Configuration
- Timeout Setting: 60 seconds

Offered Portlets
- EmpDept employees
- EmpDept department

Portlet Instances
- EmpDept employees1

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The Portlet Consumer Test Page contains three tabs:

- **Producers:** This tab lists all the producers registered with the consumer application. Selecting a producer provides specific information about that producer.
- **Sanity Checks:** This tab may contain a predefined set of portlet instances and required parameters that can be run in the consumer application, as configured by the consumer application developer. Any failures within these portlets indicate a problem with the corresponding producer and/or portlet.
- **Configuration:** This tab enables you to identify the consumer configuration entries for portlet consumption. You cannot change these values as they are stored within the application; they are displayed for reference information only.

After accessing the Portlet Consumer Test Page, you can perform further diagnostic steps.

This section describes how to use the Portlet Consumer Test Page to diagnose portlet issues. It includes the following topics:

- Section 63.11.1.2.1, "Access the Portlet Consumer Test Page"
- Section 63.11.1.2.2, "Locate the Portlet Producer"
- Section 63.11.1.2.3, "Locate and Run the Portlet Instance"
- Section 63.11.1.2.4, "Perform Sanity Checks"
- Section 63.11.1.2.5, "Check Consumer Configuration Entries"

63.11.1.2.1 Access the Portlet Consumer Test Page The Portlet Consumer Test Page provides diagnostic information about the portlet consumer.

To access the Portlet Consumer Test Page:

1. In your browser, enter the URL for the Portlet Consumer Test Page:

   ```
   http://host:port/context-root/faces/oracle/portlet/client/adf/diagnostic/pages/
   ConsumerTestPage.jspx
   ```

> **Note:** If the consumer application is secured, the Portlet Consumer Test Page can be accessed only by users granted permission to view those pages.

2. In the Portlet Consumer Test Page, you can perform further diagnostic steps as described in the following sections.

63.11.1.2.2 Locate the Portlet Producer The Producers tab of the Portlet Consumer Test Page lists all the producers that have been registered with the consumer application. If a portlet instance in your application displays an error message, you can view information about the producer that owns the portlet by selecting it on this tab.

To locate the portlet producer:

1. In the Portlet Consumer Test Page, select the portlet producer that owns the portlet instance that is reporting the error.

   You noted this information in Section 63.11.1.1, "Identify the Portlet Instance."

2. The following information is provided for the selected producer:

   – Producer Test Page: A link to the Producer Test Page.

   – Configuration: Details of potential issues surrounding skins, security, and timeouts associated with the using producer.

   – Offered Portlets: A list of all portlets offered by the producer. If there are no offered portlets listed, this indicates that there is a problem with the registration metadata for the producer.

   – Portlet Instances: A list of all portlet instances for the selected producer in the consumer application. This list may be empty.

   You can use this information to identify potential issues with the producer.

63.11.1.2.3 Locate and Run the Portlet Instance If you have still not been able to identify the cause of the portlet error, the issue may lie with the portlet instance itself.

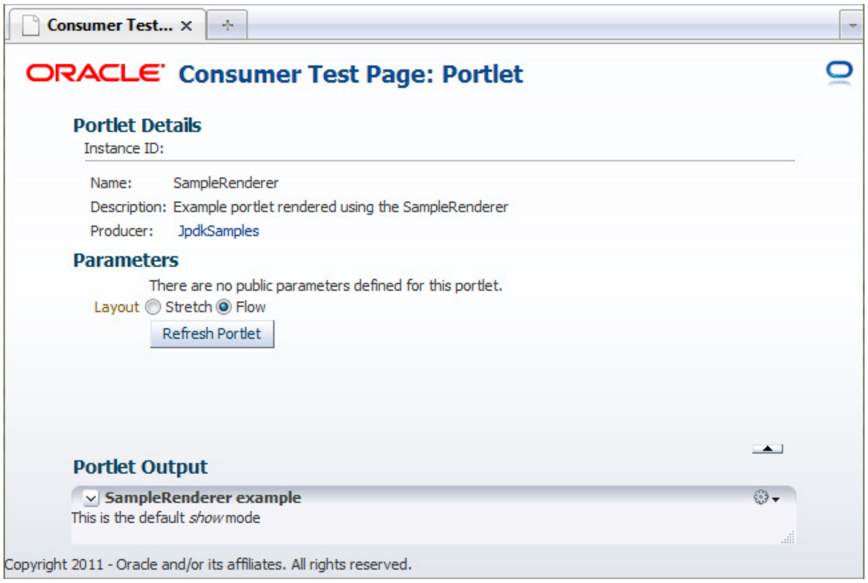
To locate and run the portlet instance:

1. In the Portlet Consumer Test Page, select the portlet producer that owns the portlet instance that is reporting the error.

   You noted this information in Section 63.11.1.1, "Identify the Portlet Instance."

2. Under Portlet Instances, select the portlet instance to display the Consumer Test Page: Portlet page.

   You noted this information in Section 63.11.1.1, "Identify the Portlet Instance."



Consumer Test Page: Portlet

Portlet Details

Instance ID:

Name: SampleRenderer

Description: Example portlet rendered using the SampleRenderer

Producer: JpdkSamples

Parameters

There are no public parameters defined for this portlet.

Layout ○ Stretch ● Flow

Portlet Output

SampleRenderer example

This is the default *show* mode

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3. The Portlet Consumer Test Page: Portlet page renders the portlet in a standalone page. If the portlet runs correctly on this page, the problem is most likely caused by other components on the page containing the broken portlet.

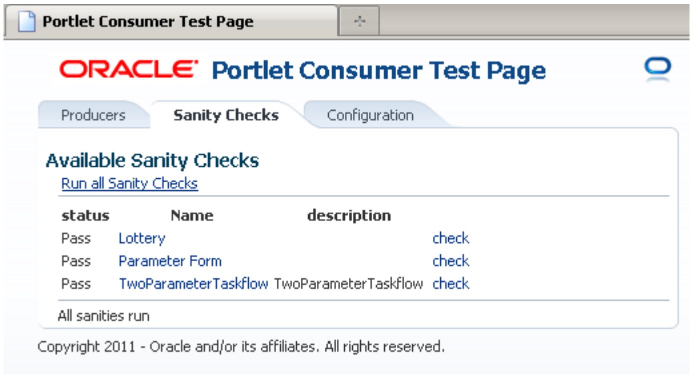
4. The Parameters section enables you to experiment with how the portlet looks using a stretch or flow layout

5. If the portlet contains parameters, the Parameters section also lists all the public parameters for the portlet. Enter values for any parameters to test that the portlet is receiving parameters correctly.

6. To navigate back to the Portlet Consumer Test Page, click the producer name link at the top of the page.

63.11.1.2.4 Perform Sanity Checks The Sanity Checks tab of the Portlet Consumer Test Page (shown in Figure 63–3) provides a quick overview of the state of portlet communication in your application across all producers.

Figure 63–3 The Sanity Checks Tab



Portlet Consumer Test Page

Available Sanity Checks

Run all Sanity Checks

status	Name	description	
Pass	Lottery		check
Pass	Parameter Form		check
Pass	TwoParameterTaskflow	TwoParameterTaskflow	check

All sanities run

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The Sanity Checks tab references portlet instances used within the consumer application. This list is configured by the application developer who chose the portlets to include and the parameters to pass to these portlets.

The checks on this page do not render the output in the UI, but simply create a runnable instance of the portlet under the covers and report any failures if any exception is returned by the portlet.

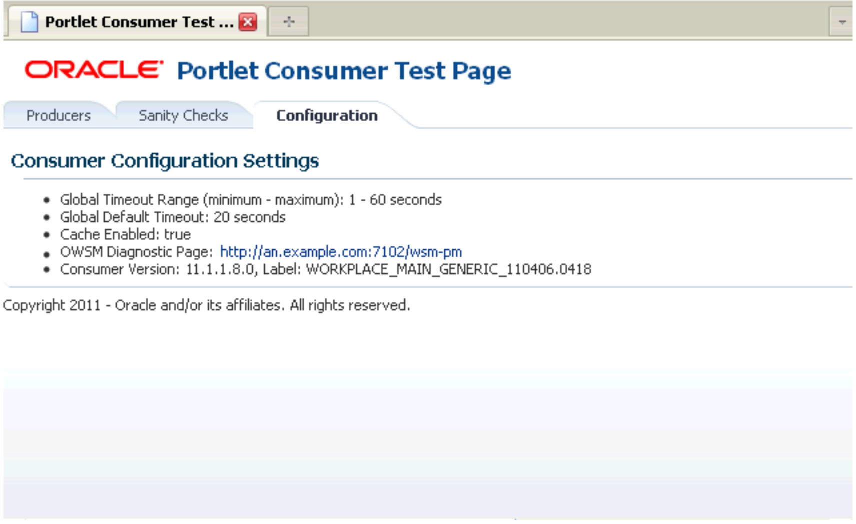
To perform sanity checks:

1. In the Portlet Consumer Test Page, click the **Sanity Checks** tab.
2. Click the **check** link next to the portlet that you want to test.

   The results of the sanity tests are displayed in the **Status** column.
3. To run sanity checks on all listed portlets, click the **Run all Sanity Checks** link.

63.11.1.2.5 Check Consumer Configuration Entries The Configuration tab of the Portlet Consumer Test Page (shown in Figure 63–4) enables you to identify the consumer configuration entries for portlet consumption. This tab displays settings defined in the `adf-config.xml` file, for example, the minimum and maximum timeout values and the consumer version number. You cannot change these values as they are stored within the application; they are displayed for reference information only.

Figure 63–4 The Configuration Tab



Consumer Configuration Settings

- Global Timeout Range (minimum - maximum): 1 - 60 seconds
- Global Default Timeout: 20 seconds
- Cache Enabled: true
- OWSM Diagnostic Page: http://an.example.com:7102/wsm-pm
- Consumer Version: 11.1.1.8.0, Label: WORKPLACE_MAIN_GENERIC_110406.0418

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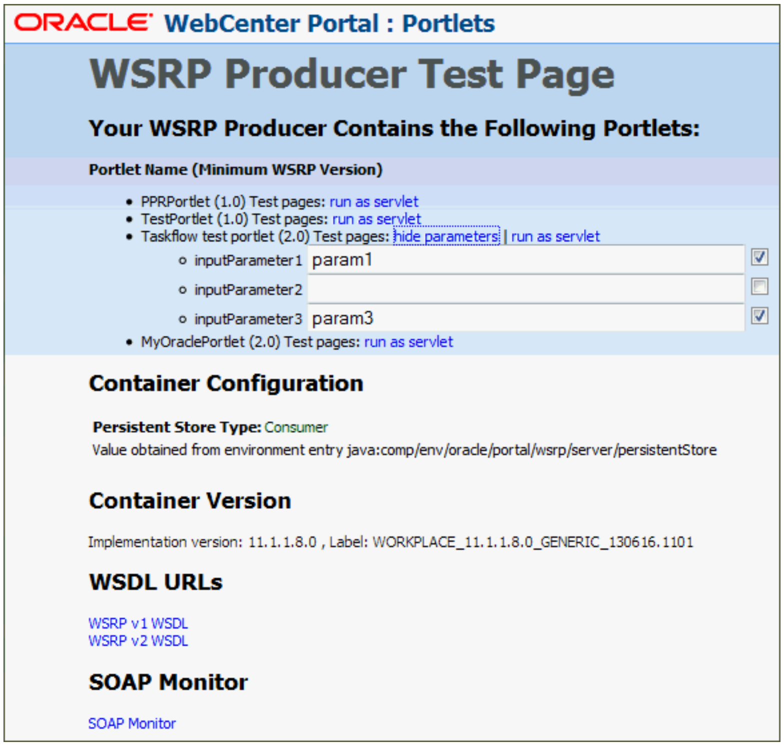
63.11.1.3 Examine the Producer Test Page

If you cannot identify the cause of the error in the consumer application, the next step is to use the Producer Test Page (shown in Figure 63–5) to identify potential issues with the portlet producer application.

Figure 63–5 The Producer Test Page



ORACLE WebCenter Portal : Portlets

WSRP Producer Test Page

Your WSRP Producer Contains the Following Portlets:

Portlet Name (Minimum WSRP Version)

- PPRPortlet (1.0) Test pages: run as servlet
- TestPortlet (1.0) Test pages: run as servlet
- Taskflow test portlet (2.0) Test pages: hide parameters | run as servlet
  - inputParameter1 param1 ☑
  - inputParameter2 □
  - inputParameter3 param3 ☑
- MyOraclePortlet (2.0) Test pages: run as servlet

Container Configuration

Persistent Store Type: Consumer
Value obtained from environment entry java:comp/env/oracle/portal/wsrp/server/persistentStore

Container Version

Implementation version: 11.1.1.8.0 , Label: WORKPLACE_11.1.1.8.0_GENERIC_130616.1101

WSDL URLs

WSRP v1 WSDL
WSRP v2 WSDL

SOAP Monitor

SOAP Monitor

Access to the main Producer Test Page is public, but links to the test pages for each portlet are accessible only to users granted permission on the underlying pages and task flows.

The Producer Test Page contains five sections:

- Portlets

  A list of all the portlets within the producer. For Oracle JSF Portlet Bridge portlets, each portlet also provides a separate link to run the portlet as a servlet (this is a prerequisite to running them as portlets: if a portlet does not run as a servlet, it cannot run as a portlet).

- Container Configuration

  Information on where the consumer preference information is stored.

- Container Version

  The version number of the Portlet Producer Container.

- WSDL URLs

  Links to the Web Service Definition Language (WSDL) documents to use for registration.

- SOAP Monitor

  A link to the WSRP SOAP monitor where users with the `Monitor` or `Admin` role can track the SOAP messages between the consumer and producer.

After accessing the Producer Test Page, you can perform further diagnostic steps.

This section includes the following topics:

- Section 63.11.1.3.1, "Access the Producer Test Page"

- Section 63.11.1.3.2, "Run the JSF Portlet as a Servlet"
- Section 63.11.1.3.3, "Examine the SOAP Monitor"

63.11.1.3.1 Access the Producer Test Page The Producer Test Page provides diagnostic information about the portlet producer.

To access the Producer Test Page:

1. In your browser, enter the URL for the Producer Test Page:

   `http://host:port/context-root/info`

2. In the Producer Test Page, you can perform further diagnostic steps as described in the following sections.

63.11.1.3.2 Run the JSF Portlet as a Servlet To verify that an Oracle JSF Portlet Bridge portlet producer is running correctly, you must first verify that the producer application runs correctly through standard HTTP requests. If the artifacts the producer exposes as portlets do not run as servlets, they will not run as portlets.

To run a JSF portlet as a servlet:

1. In the Producer Test Page, click the **run as servlet** link next to the portlet.
2. The portlet is called using standard HTTP to request the underlying page or task flow. The results of the request are displayed in a new browser window.

   If the resulting page or task flow does not render correctly, then there is a problem with the producer application that must be resolved before you can run the page or task flow as a portlet.

3. If the portlet accepts parameters, click **show parameters** to list them and provide values. When you click **run as servlet**, the portlet call includes the parameter values.

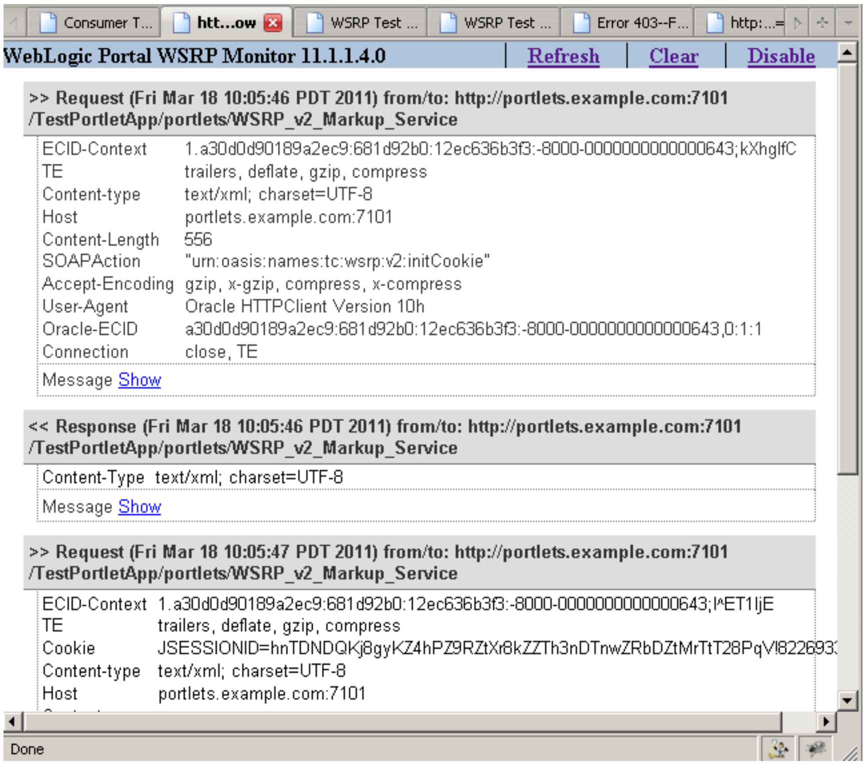
63.11.1.3.3 Examine the SOAP Monitor The SOAP monitor provides access to the SOAP requests between the consumer and producer when rendering a portlet. This is very useful in diagnosing problems at the communication level.

To examine the SOAP monitor:

1. In the Producer Test Page, click the SOAP Monitor link at the bottom of the page.
2. When prompted, enter your user name and password.

   > **Note:** To access the SOAP monitor you must be a member of the `Monitors` or `Administrators` role in the Identity Management System.

3. By default, the SOAP monitor is disabled, so the page is empty. You must first enable the monitor by clicking the **Enable** link at the top of the page.
4. The page does not automatically refresh, so to display SOAP messages, you must click the **Refresh** link.
5. To force a request to the failing portlet, go to the Portlet Consumer Test Page: Portlet page for the portlet and select **Refresh Portlet**.
6. When the portlet has rendered, or failed, click the Refresh link in the SOAP monitor to display the captured request.



WebLogic Portal WSRP Monitor 11.1.1.4.0

```
>> Request (Fri Mar 18 10:05:46 PDT 2011) from/to: http://portlets.example.com:7101
/TestPortletApp/portlets/WSRP_v2_Markup_Service
ECID-Context     1.a30d0d90189a2ec9:681d92b0:12ec636b3f3:-8000-0000000000000643;kXhglfC
TE               trailers, deflate, gzip, compress
Content-type     text/xml; charset=UTF-8
Host             portlets.example.com:7101
Content-Length   556
SOAPAction       "urn:oasis:names:tc:wsrp:v2:initCookie"
Accept-Encoding  gzip, x-gzip, compress, x-compress
User-Agent       Oracle HTTPClient Version 10h
Oracle-ECID      a30d0d90189a2ec9:681d92b0:12ec636b3f3:-8000-0000000000000643,0:1:1
Connection       close, TE
Message Show

<< Response (Fri Mar 18 10:05:46 PDT 2011) from/to: http://portlets.example.com:7101
/TestPortletApp/portlets/WSRP_v2_Markup_Service
Content-Type  text/xml; charset=UTF-8
Message Show

>> Request (Fri Mar 18 10:05:47 PDT 2011) from/to: http://portlets.example.com:7101
/TestPortletApp/portlets/WSRP_v2_Markup_Service
ECID-Context  1.a30d0d90189a2ec9:681d92b0:12ec636b3f3:-8000-0000000000000643;l^ET1ljE
TE            trailers, deflate, gzip, compress
Cookie        JSESSIONID=hnTDNDQKj8gyKZ4hPZ9RZtXr8kZZTh3nDTnwZRbDZtMrTtT28PqVl822693
Content-type  text/xml; charset=UTF-8
Host          portlets.example.com:7101
```

7. Now, you can investigate the SOAP messages that were sent and the responses to try to narrow down the cause of the problem.

Note: If, after rerunning the portlet and refreshing the SOAP monitor, you see no messages displayed, this indicates that there may be a security issue between the producer and the consumer. You must verify that the correct WS-Security settings are set up for the producer and consumer to communicate.

63.11.2 Configuring the Portlet Logging File

To troubleshoot portlet issues, it is useful to add portlet log-handlers and loggers to the logging configuration file, `logging.xml`.

Example 63–19 shows how to add the portlet log-handlers and loggers. The example assumes that you are running the consumer and producer applications on the same WebLogic Server instance. If you are running the consumer and producer applications on different instances, you must split them up appropriately.

Note: Add the log entries at the end of the file to ensure that they override any seeded settings.

Example 63–19 Configuring Log Files for Troubleshooting Portlet Issues

```
<!-- NOTE: You need to change the path where the logfile is located -->
<log_handlers>
...
   <!-- Portlet Consumer -->
   <log_handler name="portlet-consumer-handler" class="oracle.core.ojdl.logging.ODLHandlerFactory">
      <property name="format" value="ODL-Text"/>
      <property name="path" value="/scratch/logs/portlet-consumer.log"/>
   </log_handler>

   <!-- Portlet Producer -->
   <log_handler name="portlet-producer-handler" class="oracle.core.ojdl.logging.ODLHandlerFactory">
      <property name="format" value="ODL-Text"/>
      <property name="path" value="/scratch/logs/portlet-producer.log"/>
   </log_handler>

   <!-- Portlet Bridge -->
   <log_handler name="portlet-bridge-handler" class="oracle.core.ojdl.logging.ODLHandlerFactory">
      <property name="format" value="ODL-Text"/>
      <property name="path" value="/scratch/logs/portlet-bridge.log"/>
   </log_handler>
...
</log_handlers>

<loggers>
...
   <!-- Portlet Consumer -->
   <logger name="oracle.portlet.client" level="FINEST" useParentHandlers="false">
      <handler name="portlet-consumer-handler"/>
   </logger>

   <!-- Portlet Servers -->
   <logger name="com.bea.portlets" level="FINEST" useParentHandlers="false">
      <handler name="portlet-producer-handler"/>
   </logger>
   <logger name="com.bea.netuix" level="FINEST" useParentHandlers="false">
      <handler name="portlet-producer-handler"/>
   </logger>
   <logger name="com.bea.wsrp" level="FINEST" useParentHandlers="false">
      <handler name="portlet-producer-handler"/>
   </logger>
   <logger name="oracle.portlet.producer" level="FINEST" useParentHandlers="false">
      <handler name="portlet-producer-handler"/>
   </logger>

   <!-- Portlet Bridge -->
   <logger name="oracle.portlet.bridge" level="FINEST" useParentHandlers="false">
      <handler name="portlet-bridge-handler"/>
   </logger>
   <logger name="oracle.portlet.server.bridge" level="FINEST" useParentHandlers="false">
      <handler name="portlet-bridge-handler"/>
   </logger>
...
</loggers>
```

The logging configuration file is located in:

DOMAIN_HOME/config/fmwconfig/servers/*server*/logging.xml

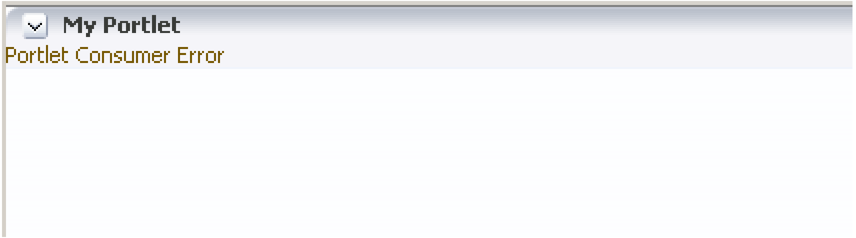
The log file name is also defined in `logging.xml`. By default the log file name is:

DOMAIN_HOME/servers/*server*/logs/*server*-diagnostic.log

63.11.3 Portlet Displays a Portlet Consumer Error

The message **Portlet Consumer Error** (shown in Figure 63–6) typically indicates that an error occurred within the operation of the portlet parts of the portlet consumer application.

Figure 63–6 Portlet Displaying a Portlet Consumer Error



Portlet Consumer Error

Problem 1

An error has occurred within the operation of the portlet parts of the portlet consumer application. In other words, the error is unrelated to the remote portlet producer application.

Solution 1

Consult the diagnostic log file to determine the cause of the exception.

If the `DebugErrorRenderer` is enabled, the cause exception is displayed in the portlet along with links to the log file. If running in production mode, then consult the consumer-side logs.

The exception that caused the error message to be displayed is logged. Wherever possible, a message is included in the log at the start of the exception stack to indicate for which portlet binding the exception occurred. Example 63–20 shows a message logged for a portlet error.

Example 63–20 Example Message Logged for a Portlet Error

```
<PortletRenderer> <setErrorState> An error has occured for Portlet Binding
portlet1.
oracle.portlet.client.container.PortletContentTypeException: Unexpected content
type "null" in WSRPGetMarkup response.
...
```

Pay particular attention to the cause exceptions in the stack as this is likely to indicate what the real underlying problem is.

The cause is likely to be an internal error and the appropriate course of action is to contact Oracle Support.

Problem 2

The portlet queue is full and the pool is not able to process the new request. This can happen if the portal is under a particularly high load. When the portlet queue is full, no new portlet requests are processed.

If this is the cause of the problem, the diagnostic log contains an error message similar to the one shown in Example 63–21.

Example 63–21 Example Message Logged for Portlet Queue Full

```
Message oracle.portlet.client.container.PortletQueueFullException: Queue Full
[cause=na submittedTasks=8,361 queuedTasks=20 queueFreeSpace=0
completedTasks=8,331 activeThreads=10 corePoolSize=10 keepAliveTime=9,223,372,036
largestPoolSize=10 maxPoolSize=10 poolSize=10 isShutdown=false isTerminated=false
isTerminating=false]
```

Solution 2

The portlet queue size is determined by the `parallelPoolSize` and `parallelQueueSize` parameters in `adf-config.xml`.

- `parallelPoolSize` indicates the number of threads to use for parallel execution of tasks. The default value is `10`.
- `parallelQueueSize` determines the size of the queue of tasks waiting for parallel execution. Tasks are rejected when the queue size is reached. The default value is `20`.

The default values should be adequate for most portals. However, if you experience recurring errors due to the portlet queue becoming full, you might want to consider increasing the value of the `parallelQueueSize` parameter. To boost performance, you might also consider increasing the `parallelPoolSize` to increase the number of threads opened to handle the portlet requests from the queue.

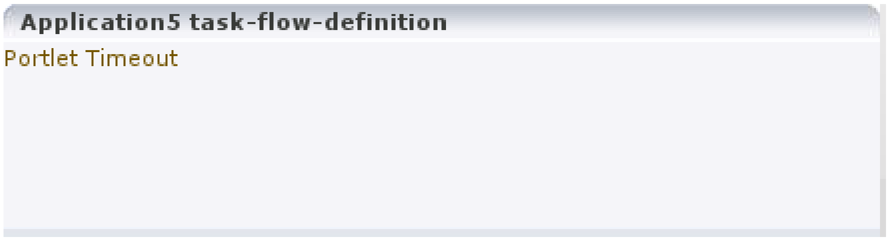
> **Note:** Increasing the queue and pool size should be done carefully and in small increments. If the value of either parameter is set too high the increased usage of hardware resources could be counterproductive.

For information about how to change the `parallelQueueSize` and `parallelPoolSize` parameters, see Section 63.3.5, "How to Edit Portlet Client Configuration."

63.11.4 Portlet Displays a Portlet Timeout

If a **Portlet Timeout** is displayed in the area of the page that you would expect to contain a portlet (as shown in Figure 63–7), this means that the consumer waited for a configured period of time for the producer to respond and did not get a response during that time, or the response did not complete during that time. There are a number of possible causes.

Figure 63–7 Portlet Displaying a Portlet Timeout Error



Application5 task-flow-definition

Portlet Timeout

Problem 1

The producer machine is overloaded.

Solution 1

Check the load on the producer managed server (the tools used to do this vary depending on the operating system that is running on the producer). If the load is high, check whether a particular process is causing this high load, and whether such a process could be run on another machine, or at a less busy time. If no single process is causing the high load, or if the Oracle WebLogic Server is causing the high load, and if the load is consistently high, consider whether the producer hardware is adequate, or whether it is necessary to upgrade it (or add further nodes to the cluster). Also consider adjusting the Oracle WebLogic Server configuration to increase the size of the request thread pool. For more information, see the Oracle WebLogic Server documentation.

Problem 2

The network is overloaded, or there are problems with the network affecting communication between the consumer and producer.

Solution 2

Check that you can ping the producer machine from the consumer machine. Check that you can access the producer's WSRP Producer Test Page in your local browser. If this works, check that you can access this same page from a browser running on the consumer machine. If any of these steps cause problems, and the machine is not overloaded, this could be a network problem, which should be investigated by a system administrator.

Problem 3

There is a deadlock (or a stuck thread) on the producer machine causing the request thread to hang.

Solution 3

This should not happen during normal operation. If it does occur, there will generally be an error in the producer's log files indicating the point at which the deadlock occurred. This may help diagnose the problem. In some cases, it may be possible to alleviate this by modifying the configuration of Oracle WebLogic Server. For more information, see the Oracle WebLogic Server documentation.

Problem 4

The producer application is running slowly (for example, due to processing large quantities of data).

Solution 4

In this case, the producer application may be processing large quantities of data, causing it to spend too long building the response. If the application will regularly deal with large quantities of information, it may be necessary to either add or improve producer hardware, or to increase the portlet timeout duration. The portlet timeout can be configured on the producer connection in the consumer application using Enterprise Manager or the WLST `setWSRPProducerConnection` command. Additionally, minimum and maximum timeouts for all producer connections within the application can be configured within the portlet section of the `adf-config.xml` file.

Problem 5

The producer application is waiting for a response from another resource, such as a database, that is taking too long (for example, if the database is overloaded).

Solution 5

Check that the resource in question is functioning correctly. If it is, the solution is same as Solution 4.

Problem 6

The portlet timeout values have been misconfigured such that the timeout period is too short.

Solution 6

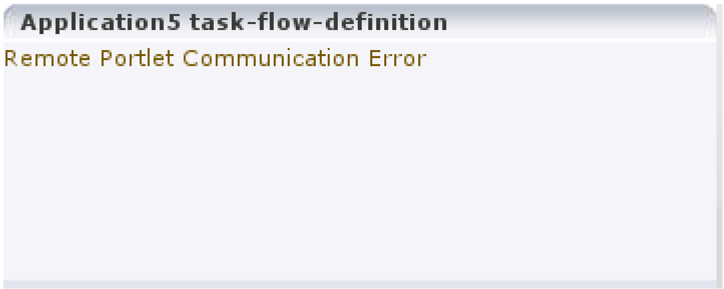
Typically, the timeout for a portlet is set on the registration of the producer. This may have been set to a value that does not give time for the portlet to respond.

Also, the portlet section of the `adf-config.xml` file allows minimum, maximum, and default values for portlet timeouts to be configured across the whole application. The maximum timeout imposes an upper limit on timeouts specified by portlet producers, so if the maximum timeout is too short, this could cause unwanted portlet timeout errors even if the timeout specified on the producer connection is longer.

63.11.5 Portlet Displays a Remote Portlet Communication Error

When a section of the screen shows the **Remote Portlet Communication Error** message (as shown in Figure 63–8), and there is an otherwise blank region surrounding it, this area is expected to be filled with a portlet, which the application is not able to contact.

Figure 63–8 Portlet Displaying a Remote Portlet Communication Error



Application5 task-flow-definition

Remote Portlet Communication Error

Problem 1

The producer is down.

Solution 1

It could be that the producer application is not running, or the managed server on which it is deployed is not started. In this case, it will need to be started. Identify the application that needs to be started based on the task being attempted at the time of the portlet failure.

Problem 2

The web services security is incorrectly configured.

Solution 2

Troubleshooting steps for web services security depend on the type of security profile being used, for example AuthN, SSL, or Message Security.

For more information about troubleshooting web service security, see the "Diagnosing Problems" chapter in the *Security and Administrator's Guide for Web Services*.

Problem 3

The producer managed server cannot be reached.

Solution 3

The producer may be in a location that cannot be reached by the consumer application, due to intervening firewalls or incorrect routing rules. In an environment that is installed by Oracle's provisioning software, this should not be the case, but it is worth checking that you are able to access the WSDL endpoint for the producer from the machine hosting the consumer, by going to:

```
http://host:port/context-root/portlets/wsrp2?WSDL
```

Where:

- *host* is the server to which the portlet producer is deployed
- *port* is the port to which the server is listening for HTTP requests
- *context-root* is the producer web application's context root

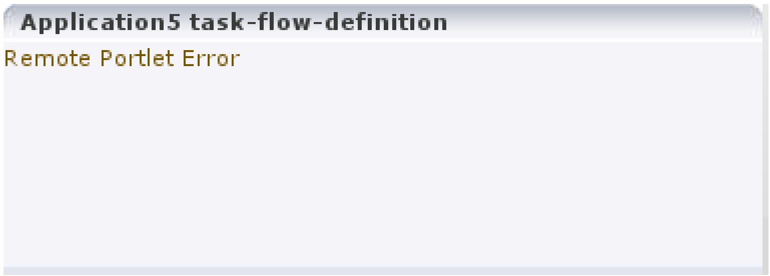
For example:

```
http://portlets.example.com:9999/sample/portlets/wsrp2?WSDL
```

63.11.6 Portlet Displays a Remote Portlet Error

If the portlet displays a **Remote Portlet Error** (as shown in Figure 63–9), this indicates that the producer responded with an error message. The error message is returned in the form of a SOAP fault message inside the response document. There are a number of reasons the producer might return an error. The best strategy to diagnose these errors is to first find the corresponding exception stack trace in the consumer diagnostic logs. This stack trace shows what kind of fault was returned by the producer, plus any further information required in the response. Some faults you may encounter are listed in the following sections.

Figure 63–9 Portlet Displaying a Remote Portlet Error



Application5 task-flow-definition

Remote Portlet Error

Problem 1

`OperationFailedException`. This is the most common type of Remote Portlet Error and it is a catch-all for most unhandled exceptions raised in the producer application.

Solution 1

To resolve an `OperationFailedException`, examine the exception in the consumer diagnostic logs. This generally shows any exception that was raised in the producer application to trigger the fault response as the final `Caused by` exception.

If required, you can then examine the diagnostic logs on the producer application for more detail, or for any related exceptions that occurred prior to the fault being triggered. In some cases, the exception in the producer log indicates a problem that can be simply resolved, such as a database connection failure or configuration problem. In other cases, the exception might indicate a bug in the portlet code.

Problem 2

`InvalidRegistrationException`. This error indicates that the producer has not been properly registered with the consumer before the consumer attempted to communicate with it. This could also occur if the producer's preference store has been moved or deleted since the consumer registered it.

Solution 2

Ensure that the persistence store is available and that the configuration of the persistence store in the `web.xml` file is correct.

Problem 3

`InvalidHandleException`. This indicates that the consumer has asked the producer to render, or otherwise interact with, a portlet instance that the producer does not know about. This could occur if the producer's preference store has been corrupted in some way since the portlet was added to the page.

Solution 3

Ensure that the persistence store is available and that the configuration of the persistence store in the `web.xml` file is correct.

Problem 4

`AccessDeniedException`. This indicates that the producer application decided that the current user did not have access to the portlet or task flow in question.

Solution 4

This could either be a legitimate error message or an indication of a configuration problem. In most cases, WebCenter Portal should deal with authorization errors gracefully, without a Portlet Remote Error being displayed.

64

Creating Portlets with OmniPortlet

This chapter describes how to use OmniPortlet in your Oracle JDeveloper environment.

This chapter includes the following topics:

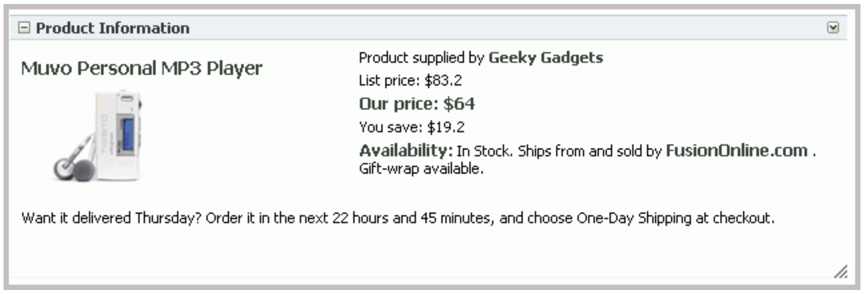
- Section 64.1, "Introduction to OmniPortlet"
- Section 64.2, "Adding OmniPortlet to Your Application"
- Section 64.3, "Customizing OmniPortlet"
- Section 64.4, "OmniPortlet Configuration Tips"
- Section 64.5, "Troubleshooting OmniPortlet Problems"

For information on how to use the OmniPortlet wizard, refer to the "Working with OmniPortlet" chapter in *Building Portals with Oracle WebCenter Portal*.

64.1 Introduction to OmniPortlet

OmniPortlet is a data publishing portlet, provided as a subcomponent of Oracle WebCenter Portal. OmniPortlet enables developers to easily publish data from various data sources using a variety of layouts without writing any code. You add OmniPortlet to your application at design time, and customize it at runtime with an easy to use wizard. You can base an OmniPortlet on a variety of data sources, including SQL, XML, web services, spreadsheets (character-separated values), and even application data from an existing web page. You can publish this data to several different layouts, such as customizable charts and tables.Figure 64–1 shows an example of a portlet created using OmniPortlet.

Figure 64–1 Example of an OmniPortlet



⊟ **Product Information**

Muvo Personal MP3 Player

Product supplied by **Geeky Gadgets**
List price: $83.2
Our price: $64
You save: $19.2
Availability: In Stock. Ships from and sold by **FusionOnline.com** .
Gift-wrap available.

Want it delivered Thursday? Order it in the next 22 hours and 45 minutes, and choose One-Day Shipping at checkout.

OmniPortlet enables the WebCenter Portal Framework application developer and component developer to do the following:

- Display data from multiple sources (CSV, XML, web service, SQL, and so on)
- Sort the data to display
- Format data using a variety of layouts (bulleted list, chart, HTML, and so on)
- Use portlet parameters
- Expose personalizable settings to page viewers

To display personalized data, you can refine the retrieved data by filtering the results returned from a data source, and parameterize the credential information used to access secure data. Out of the box, OmniPortlet provides the most common layout for portlets: tabular, chart, HTML, news, bulleted list, and form.

64.2 Adding OmniPortlet to Your Application

As described in Chapter 63, "Consuming Portlets," you can add an OmniPortlet to a page created through Oracle JDeveloper. OmniPortlet is included in the preconfigured PortalTools portlet producer in the Integrated WebLogic Server (Integrated WLS) that is installed with Oracle JDeveloper.

To add OmniPortlet to your application:

1. Start Integrated WLS. For more information, see Section 2.2.4, "Managing the Integrated WebLogic Server."
2. Deploy the preconfigured PortalTools portlet producer, if it has not already been deployed. For more information, see Section 2.4.1.1, "Deploying the Preconfigured Portlet Producers."
3. Register the OmniPortlet producer with your application. For more information, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."
4. Add the OmniPortlet to your application by dragging it to the desired JSPX page. For more information, see Section 63.5, "Adding Portlets to a Page."

> **Note:** When you add an instance of OmniPortlet onto your page in Oracle JDeveloper, open the Property Inspector for the portlet and ensure that the `AllModesSharedScreen` and `RenderPortletInIFrame` properties are set as follows:
>
> - **AllModesSharedScreen** is set to `False` to display the Customize and Personalize in full page size.
> - **RenderPortletInIFrame** is set to `True` to display the OmniPortlet in its own inline frame (`iframe`) in the View mode.

For information on configuring OmniPortlet in Oracle JDeveloper, refer to Section 64.4, "OmniPortlet Configuration Tips."

64.3 Customizing OmniPortlet

After you add an OmniPortlet to your application at design time, you can customize the content, layout, and other options, by running your application to a browser. This section provides a high-level introduction to the runtime customization experience. For more detailed information on using and customizing this portlet, refer to the "Working with OmniPortlet" chapter in *Building Portals with Oracle WebCenter Portal*.

Note: For more information about configuring OmniPortlet, see Section 64.4, "OmniPortlet Configuration Tips."

The OmniPortlet wizard initially contains five steps. When you first define your OmniPortlet, you set the data source type, data source options, filter options, view options, and layout. When you have completed these steps of the wizard, you can reenter the wizard by clicking the **Customize** link for the portlet. When you reenter the wizard, you can change the definitions on the Source, Filter, View, and Layout tabs.

Note: On the IBM Linux on Power platform, if the action buttons (Next, Previous, Finish, and Cancel) are minimized to dots when defining the OmniPortlet, increase the stack size shell limit to unlimited and restart the `WLS_portlet` instance. Run the following command to set the stack size shell limit to unlimited: `prompt> ulimit -s unlimited`.

You can use several different data sources with OmniPortlet:

- Spreadsheet
- SQL
- XML
- Web Service
- Web Page

For more information on using these data sources with OmniPortlet, refer to *Using Oracle WebCenter Portal*.

64.4 OmniPortlet Configuration Tips

This section contains configuration information for OmniPortlet. To learn more about the OmniPortlet wizard, see Chapter 64, "Creating Portlets with OmniPortlet."

This section includes the following topics:

- Section 64.4.1, "Configuring the OmniPortlet Producer to Access Data Outside a Firewall"
- Section 64.4.2, "Configuring the OmniPortlet Producer to Access Other Relational Databases"
- Section 64.4.3, "Configuring Portal Tools and Web Producers (Optional)"

> **Note:** In this section, *OmniPortlet_WAR_DIR* indicates the directory where omniPortlet.war is deployed in the WebLogic Server. The exact path can vary depending on your installation. To determine this path, search for omniPortlet/provider.xml in the file system. For example, run the following command in UNIX:
>
> ```
> > find DOMAIN_DIR -name "provider.xml" | grep -i omniportlet
> ```
>
> In the Integrated WebLogic Server (Integrated WLS or Default Server), the path of OmniPortlet's provider.xml is located here:
>
> ```
> JDEV_SYSTEM_DIRECTORY/DefaultDomain/servers/DefaultServer/tmp/_WL_
> user/portalTools_11.1.1.2.0/RANDOMLY_GENERATED_
> DIRECTORY/war/WEB-INF/providers/omniPortlet/provider.xml
> ```
>
> Note that, on a Windows platform, pages in Portal Framework applications are not rendered if there is a space in the path to the system directory in JDeveloper. Therefore, ensure that the *JDEV_SYSTEM_DIRECTORY* path does not contain spaces.
>
> In the Fusion Middleware 11*g* installation, the path of OmniPortlet's provider.xml is located here:
>
> ```
> FMW_HOME/user_projects/domains/wc_domain/servers/WLS_Portlet/tmp/_
> WL_user/portalTools_version_number/RANDOMLY_GENERATED_
> DIRECTORY/war/WEB-INF/providers/omniPortlet/provider.xml
> ```

64.4.1 Configuring the OmniPortlet Producer to Access Data Outside a Firewall

If the OmniPortlet producer is inside your firewall, then you must configure the proxy information so that OmniPortlet can access URLs of data (such as CSV, XML, or web services) located outside the firewall. To do so, you can either set the proxy information in the command line when you start your WebLogic server. Or, you can set up the proxy information in OmniPortlet's provider.xml file, located here: *OmniPortlet_WAR_DIR*/WEB-INF/providers/omniPortlet/provider.xml.

> **Note:** For the Web Service data source, you must set the proxy information in both the provider.xml file and using the command line parameters.

- To set the proxy information in the command line when starting the WebLogic server, set the parameters as described in Table 64–1, if you are using an HTTP Proxy Host, or Table 64–2, if you are using an HTTPS Proxy Host.

Table 64–1 HTTP Proxy Information Command Line Parameters

Parameter	Description
http.proxyHost	The host name of a proxy server if one is required to make a URL connection from the OmniPortlet producer to its data sources.
http.proxyPort	The port number for the HTTP Proxy Host.
http.nonProxyHosts	The name of any domain or hosts to which you can directly connect, bypassing a proxy server, such as your local machine: localhost|localhost.localdomain Hosts can be fully qualified host names or can be IP addresses.

Table 64–1 (Cont.) HTTP Proxy Information Command Line Parameters

Parameter	Description
`http.proxyUser`	The user to log in to the proxy server if the proxy server requires authentication.
`http.proxyPassword`	The password to log in to the proxy server if the proxy server requires authentication.
`http.proxyAuthType`	The authentication type of the proxy server. Acceptable values: `Basic | Digest`.
`http.proxyAuthRealm`	The name of the realm of the proxy server. If you do not know the name of the realm, contact the proxy server administrator.

Table 64–2 HTTPS Proxy Information Command Line Parameters

Parameter	Description
`https.proxyHost`	The host name of a proxy server if one is required to make a URL connection from the OmniPortlet producer to its data sources.
`https.proxyPort`	The port number for the HTTPS Proxy Host.
`https.nonProxyHosts`	The name of any domain or hosts to which you can directly connect, bypassing a proxy server, such as your local machine: `localhost|localhost.localdomain` Hosts can be fully qualified host names or can be IP addresses.
`https.proxyUser`	The user to log in to the proxy server if the proxy server requires authentication.
`https.proxyPassword`	The password to log in to the proxy server if the proxy server requires authentication.
`https.proxyAuthType`	The authentication type of the proxy server. Acceptable values: `Basic | Digest`.
`https.proxyAuthRealm`	The name of the realm of the proxy server. If you do not know the name of the realm, contact the proxy server administrator.

The following are examples of three parameters and their values:

```
-Dhttps.proxyHost=myProxyServer.mycompany.com
-Dhttps.proxyPort=80
-Dhttps.nonProxyHosts=localhost|localhost.localdomain|127.0.0.1|
```

- To configure the proxy information in the `provider.xml` file, see Table 64–3 for a list of parameters and their descriptions.

Table 64–3 Provider.xml Tags

Parameter	Description
`httpProxyHost`	Enter the host name of a proxy server if one is required to make a URL connection from the OmniPortlet producer to its data sources.
`httpProxyPort`	Enter the port number for the HTTP Proxy Host.

Table 64–3 (Cont.) Provider.xml Tags

Parameter	Description
dontProxyFor	Enter the name of any domain or hosts to which you can directly connect, bypassing a proxy server. Domain names are the part of a URL that contain the names of a business, or organization, or government agency, for example: `*.company.com, *.us.company.com` Hosts can be fully qualified host names or can be IP addresses.
proxyUseAuth	Acceptable values: `true | false` Enter true if your proxy server requires authentication. The authentication parameters are specified by the following tags: `proxyType`, `proxyRealm`, `proxyUseGlobal`, `proxyUserName`, and `proxyPassword`.
proxyType	Acceptable values: `Basic | Digest` Choose the type of proxy server this provider. For more information about basic or digest authentication, see `http://www.faqs.org/rfcs/rfc2617.html`.
proxyRealm	Enter the name of the realm of the proxy server that is accessed by the user according to the login information described later in the table. If you do not know the name of the realm, then contact the administrator of the proxy server.
proxyUseGlobal	Acceptable values: true | `false` If true, then the `<proxyUser>` and `<proxyPassword>` values are used for all users. Users do not see the Proxy Authentication section on the Source tab and Personalize page. If false, then page designer must log in using the Proxy Authentication section on the Source tab when they define the portlet. The end user must log in using the Proxy Authentication section on the Personalize screen. If `<proxyUsername>` and `<proxyPassword>` are given, then they are only used for public users.
proxyUserName	Enter the user name to log in to the proxy server.
ProxyPassword	Enter the password for the specified user name. You must prefix ! before your plain password text. It is then encrypted in the `provider.xml` file for protection when the producer starts.

The following is a basic example of using a proxy to access data outside a firewall:

```
<proxyInfo class="oracle.portal.provider.v2.ProxyInformation">
<httpProxyHost>www-proxy.example.com</httpProxyHost>
<httpProxyPort>80</httpProxyPort>
<proxyUseAuth>false</proxyUseAuth>
</proxyInfo>
```

The following example requires a login and basic authentication for all users for the proxy server:

```
<proxyInfo class="mycompany.portal.provider.v2.ProxyInformation">
<httpProxyHost>myport.example.com</httpProxyHost>
<httpProxyPort>8080</httpProxyPort>
<proxyUseAuth>true</proxyUseAuth>
<proxyType>Basic</proxyType>
<proxyRealm>myport</proxyRealm>
<proxyUseGlobal>false</proxyUseGlobal>
</proxyInfo>
```

64.4.2 Configuring the OmniPortlet Producer to Access Other Relational Databases

The OmniPortlet SQL data source is preconfigured to access Oracle databases using the Oracle JDBC drivers, and ODBC data sources using Sun Microsystem's JDBC-ODBC driver. Oracle allows developers to access other relational databases using DataDirect JDBC drivers.

> **See Also:** For a list of supported databases, Certification Matrix for Oracle Application Server and DataDirect JDBC available on the Oracle Technology Network (`http://www.oracle.com/technetwork/index.html`).

This section includes the following topics:

- Section 64.4.2.1, "Installing DataDirect JDBC Drivers"
- Section 64.4.2.2, "Registering DataDirect Drivers in OmniPortlet"

64.4.2.1 Installing DataDirect JDBC Drivers

The following DataDirect JDBC drivers are included with the WebLogic Server installation:

- `YMutil.jar`
- `YMsybase.jar`
- `YMsqlserver.jar`
- `YMspy.jar`
- `YMinformix.jar`
- `YMdb2.jar`
- `YMbase.jar`

If you do not plan to use these DataDirect drivers, you can instead download DataDirect JDBC drivers to access the desired database. These drivers are packaged in a single ZIP, which you can download from the following location:

`http://www.oracle.com/technetwork/topics/datadirect-index-091847.html`

To install DataDirect JDBC drivers:

1. Unzip the contents of the ZIP file into a temporary directory, for example `/temp/datadirect`.
2. Copy the DataDirect JDBC drivers from the temporary directory to your WebLogic Server directory: `WLS_DOMAIN_DIRECTORY/lib`.

64.4.2.2 Registering DataDirect Drivers in OmniPortlet

OmniPortlet is implemented as a Web producer and all the configuration properties are stored in the `provider.xml` file. To use DataDirect JDBC drivers with OmniPortlet, you must register these drivers in the `provider.xml` file.

To register the new DataDirect JDBC drivers:

1. Back up the file, *`OmniPortlet_WAR_DIRECTORY`*`/WEB-INF/providers/omniPortlet/provider.xml`, and then open the file.
2. Add the drivers to use for the SQL data source configuration entry:
   a. Search for the XML tag, `driverInfo`.

b. Add a new entry after the last `driverInfo` tag.

The following are examples of the driverInfo for WebLogic DataDirect drivers:

- Microsoft SQL Server (default connection):

```
<driverInfo class="oracle.webdb.reformlet.data.jdbc.JDBCDriverInfo">
  <name>Microsoft SQL Server</name>
  <sourceDataBase>other</sourceDataBase>
  <subProtocol>weblogic:sqlserver</subProtocol>
  <connectString>mainProtocol:subProtocol://databaseName</connectString>
  <driverClassName>weblogic.jdbc.sqlserver.SQLServerDriver
  </driverClassName>
  <dataSourceClassName>weblogic.jdbcx.sqlserver.SQLServerDataSource
  </dataSourceClassName>
  <connHandlerClass>oracle.webdb.reformlet.data.jdbc.JDBCConnectionHandler
  </connHandlerClass>
  <connPoolSize>5</connPoolSize>
  <loginTimeOut>30</loginTimeOut>
</driverInfo>
```

- Microsoft SQL Server (named connection, for example, `mycompany.com:port;databaseName=mydb`):

```
<driverInfo class="oracle.webdb.reformlet.data.jdbc.JDBCDriverInfo">
  <name>Microsoft SQL Server</name>
  <sourceDataBase>other</sourceDataBase>
  <subProtocol>weblogic:sqlserver</subProtocol>
  <connectString>mainProtocol:subProtocol://databaseName</connectString>
  <driverClassName>weblogic.jdbc.sqlserver.SQLServerDriver
  </driverClassName>
  <connHandlerClass>
  oracle.webdb.reformlet.data.jdbc.JDBCODBCConnectionHandler
  </connHandlerClass>
  <connPoolSize>5</connPoolSize>
  <loginTimeOut>60</loginTimeOut>
</driverInfo>
```

- Sybase:

```
<driverInfo class="oracle.webdb.reformlet.data.jdbc.JDBCDriverInfo">
  <name>Sybase</name>
  <sourceDataBase>other</sourceDataBase>
  <subProtocol>weblogic:sybase</subProtocol>
  <connectString>mainProtocol:subProtocol://databaseName</connectString>
  <driverClassName>weblogic.jdbc.sybase.SybaseDriver
  </driverClassName>
  <connHandlerClass>
  oracle.webdb.reformlet.data.jdbc.JDBCODBCConnectionHandler
  </connHandlerClass>
  <connPoolSize>5</connPoolSize>
  <loginTimeOut>30</loginTimeOut>
</driverInfo>
```

- DB2:

```
<driverInfo class="oracle.webdb.reformlet.data.jdbc.JDBCDriverInfo">
  <name>DB2</name>
  <sourceDataBase>other</sourceDataBase>
  <subProtocol>weblogic:db2</subProtocol>
  <connectString>mainProtocol:subProtocol://databaseName</connectString>
  <driverClassName>weblogic.jdbc.db2.DB2Driver
```

```
    </driverClassName>
    <connHandlerClass>
    oracle.webdb.reformlet.data.jdbc.JDBCODBCConnectionHandler
    </connHandlerClass>
    <connPoolSize>5</connPoolSize>
    <loginTimeOut>30</loginTimeOut>
  </driverInfo>
```

- Informix:

```
<driverInfo class="oracle.webdb.reformlet.data.jdbc.JDBCDriverInfo">
  <name>Informix</name>
  <sourceDataBase>other</sourceDataBase>
  <subProtocol>weblogic:informix</subProtocol>
  <connectString>mainProtocol:subProtocol://databaseName</connectString>
  <driverClassName>weblogic.jdbc.informix.InformixDriver
  </driverClassName>
  <connHandlerClass>
  oracle.webdb.reformlet.data.jdbc.JDBCODBCConnectionHandler
  </connHandlerClass>
  <connPoolSize>5</connPoolSize>
  <loginTimeOut>30</loginTimeOut>
</driverInfo>
```

Table 64–4 describes the parameters in the `driverInfo` property.

Table 64–4 Parameters in the driverInfo Property

Parameter	Description
`name`	Name of the database you want to use. This name is used on the Source tab of the OmniPortlet wizard.
`sourceDataBase`	Internal value. Set the value to `other`.
`subProtocol`	JDBC subprotocol name used by OmniPortlet to create the connection string, for example `sqlserver`, `sybase`, or `db2`. To get the list of subprotocol names, see the DataDirect JDBC driver documentation using the links provided at the end of this section.
`connectString`	Description of the connect string format. For DataDirect drivers, the format is: `mainProtocol:subProtocol://databaseName`
`driverClassName`	Name of the driver class. To get the different values, see the DataDirect JDBC driver documentation using the links provided at the end of this section.
`dataSourceClassName`	Name of the data source class that implements connection pooling. This parameter is only available in OmniPortlet version 9.0.4.1 or later. See Table 64–5 for the right data source class name for your driver.

`connHandlerClass`	Class used by OmniPortlet to manage the driver and connection pooling. The value is either of the following:
	■ For OmniPortlet version 9.0.4.1 or later:
	`oracle.webdb.reformlet.data.jdbc.JDBCConnectionHandler`
	■ For OmniPortlet versions before 9.0.4.1:
	`oracle.webdb.reformlet.data.jdbc.JDBCODBCConnectionHandler`

Table 64–4 (Cont.) Parameters in the driverInfo Property

Parameter	Description
connPoolSize	Minimum number of connections that are opened by the connection pool.
loginTimeOut	Maximum time, in seconds, that this data source waits while attempting to connect to a database.

Table 64–5 lists the values for the driverClassName and dataSourceClassName properties for specific DataDirect JDBC drivers.

Table 64–5 Parameters and Values for driverClassName and dataSourceClassName

DataDirect Drivers Supported	Properties
Microsoft SQL Server	Parameter: driverClassName Value: weblogic.jdbc.sqlserver.SQLServerDriver
Sybase	Parameter: driverClassName Value: weblogic.jdbc.sybase.SybaseDriver
DB2	Parameter: driverClassName Value: weblogic.jdbc.db2.DB2Driver
Informix	Parameter: driverClassName Value: weblogic.jdbc.informix.InformixDriver

3. Save the provider.xml file.
4. Stop and start the Oracle WebLogic Managed Server instance where your portlet producer was deployed.

   To do so, navigate to *FMW_HOME*/user_projects/domains/wc_Domain/bin then issue the following command:

   ```
   ./startManagedWebLogic.sh WC_Portlet
   ```

   Note: If you are using OmniPortlet in a multiple nodes configuration, for example, in a clustering or load-balancing environment, then you must manually copy the provider.xml file on each node.

   See Also: For more information about how to use DataDirect JDBC drivers, see Chapter 64, "Creating Portlets with OmniPortlet."

64.4.3 Configuring Portal Tools and Web Producers (Optional)

To ensure that the OmniPortlet producer, locally built, and custom built web producers work properly in the middle-tier environment, some additional configuration may be needed. If OmniPortlet or any other web producers have customizations in the file system, then PDK-Java provides a persistence store migration and upgrade utility that you can use to migrate the existing customizations to the database and upgrade customizations from earlier releases. See Section 60.3.8.2, "Migrating a PDK-Java Producer Persistence Store" for more information about the PDK-Java persistence store migration utility.

Configuring Portal Tools Producers in the Multiple Middle-Tier Environment

By default, the OmniPortlet producer uses the database preference store. It can work in a multiple middle-tier environment without additional configuration.

You can find more information about configuring the database persistence store in Section 60.3.8.1, "Setting up a Persistence Store for a PDK-Java Producer."

1. If you have created an OmniPortlet instance with customizations in the file system, then you must migrate these customizations to the database using the persistence store migration utility.

   To run the migration utility:

   1. Navigate to the WebCenter Portal Oracle home directory using the following command:

      ```
      cd WC_ORACLE_HOME
      ```

   2. Run the following command to migrate OmniPortlet data from a file-based persistence store (`FilePreferenceStore`) to the database persistence store (`DBPreferenceStore`):

      ```
      java -classpath
      lib/dms.jar:jdbc/lib/ojdbc14dms.jar:portal/jlib/pdkjava.jar:portal/jlib/
      ptlshare.jar oracle.portal.provider.v2.preference.MigrationTool -mode
      filetodb -pref1UseHashing true -pref1RootDirectory
      portal/portletdata/tools/omniPortlet
      -pref2User User_Name -pref2Password User_Password -pref2URL
      jdbc:oracle:thin:@infra.host.com:1521:orcl
      ```

   See Section 60.3.8.2, "Migrating a PDK-Java Producer Persistence Store" for more information about the PDK-Java persistence store migration utility.

2. Typically, you perform the HTTP Proxy configuration for OmniPortlet before you configure the Load Balancing Router (LBR). To do it after the LBR is configured, perform the following steps:

   a. The Portal Tools configuration information is stored in the `provider.xml` file on the middle-tier server. You must update the configuration directly on one middle tier (for example, **M1**) and then propagate it across all middle tiers front-ended by the LBR. You must first shut down all middle tiers except **M1**.

   b. You can change the HTTP Proxy settings in the `provider.xml` file. For more information, see Section 64.4.1, "Configuring the OmniPortlet Producer to Access Data Outside a Firewall."

   c. Propagate the changes made to the `provider.xml` file to middle tier **M2** by copying `OmniPortlet_WAR_DIR/WEB-INF/providers/omniPortlet/provider.xml` from **M1** to **M2**.

3. Restart middle tier **M2**.

4. Update portlet producer registration in your Portal Framework application. Change the first part of the producer registration URL from `http://m1.abc.com:7777/` to `http://lbr.abc.com/`.

5. Verify that the OmniPortlet producer works properly through the LBR, by going to the test pages at the following URL:

   ```
   http://lbr.abc.com/portalTools/omniPortlet/producers/omniPortlet
   ```

If you see the "No Portlets Available" message under the Portlet Information section in the OmniPortlet Producer test page, then you may not have configured OmniPortlet correctly in Step 1. If OmniPortlet is configured correctly, then the OmniPortlet and Simple Parameter Form portlets are available on the test page.

Note: To use the Web Page Data Source for OmniPortlet, you must also enable session binding in Oracle Web Cache.

64.5 Troubleshooting OmniPortlet Problems

This section provides information to help you troubleshoot problems you may encounter while using OmniPortlet.

Note: As the OmniPortlet producer exists and executes in a tier different from the Portal Framework application and does not have access to the session information, you must expose XML files as PUBLIC in order for OmniPortlet to access them.

Cannot Define OmniPortlet Using the Define Link

You are not able to define the OmniPortlet at runtime.

Problem

OmniPortlet only supports a `RenderPortletInIFrame` value of `true`, meaning that OmniPortlet must be rendered within an IFRAME. Therefore, the OmniPortlet property, `RenderPortletInIFrame`, must be set to `true`. In the Property Inspector, the `RenderPortletInIFrame` property is available under Display Options.

Currently, the `RenderPortletInIFrame` property has a value of `false`. Consequently, when you click the **Define** link at runtime, the **Type** tab may not display and you cannot proceed with defining the OmniPortlet.

Solution

You can choose **Customize** from the Action list to define OmniPortlet, or select the OmniPortlet in the Structure window in Oracle JDeveloper, and in the Property Inspector, set `RenderPortletInIFrame` to `true`.

65

Creating Content-Based Portlets with Web Clipping

This chapter describes how to use Web Clipping in your Oracle JDeveloper environment.

This chapter includes the following topics:

For information about how to use Web Clipping at runtime, see the "Working with the Web Clipping Portlet" chapter in *Building Portals with Oracle WebCenter Portal*.

> **Note:** Instead of using Web Clipping, consider using a clipper pagelet using Oracle WebCenter Portal's Pagelet Producer. For more information, see the "Managing the Pagelet Producer" chapter in *Administering Oracle WebCenter Portal*.

65.1 Introduction to Web Clipping

Web Clipping is a publishing portlet that enables you to integrate any web application with your WebCenter Portal Framework application. Web Clipping is designed to give you quick integration by leveraging the existing user interface of a web application. With Web Clipping, you can collect web content into portlets in a single centralized web page. You can use Web Clipping to consolidate content from web sites scattered throughout a large organization.

With Web Clipping you can clip an entire web page or a portion of it and reuse it as a portlet. You can clip basic and HTML-form-based sites. Use Web Clipping when you want to copy content from an existing web page and expose it in your Portal Framework application as a portlet.

Web Clipping supports the following features:

- **Navigation through various styles of login mechanisms**

Web Clipping supports various login mechanisms including form- and JavaScript-based submission and HTTP Basic and Digest Authentication with cookie-based session management.

- **Fuzzy matching of clippings**

  Fuzzy matching enables the Web Clipping engine to correctly identify a web clipping and deliver it as portlet content even if the web clipping is reordered within the source page or if its character font, size, or style changes.

- **Personalization**

  Personalization enables you to expose input parameters that end users can modify when they personalize the portlet. Parameters can be exposed as public parameters that you can map as page parameters. This feature enables end users to obtain personalized clippings.

- **Integrated authenticated web content through single sign-on**

  You can use external applications and leverage Oracle Single Sign-On to clip content from authenticated external web sites.

- **Inline rendering**

  Inline rendering enables you to set up Web Clipping portlets to display links within the context of the portlet. When a user clicks a link in the Web Clipping portlet, the results display within the same portlet. You can use this feature with internal and external web sites.

- **Proxy authentication**

  Web Clipping supports proxy authentication, including global proxy authentication and authentication for each user. You can use this feature if proxy servers require authentication. You can specify proxy server authentication details, including type (Basic or Digest) and realm in the `provider.xml` file. In addition, you can specify a scheme for entering user credentials:

  - All users automatically log in using a user name and password that you provide.
  - All users are required to log in using a user name and password that they provide.
  - All public users (not authenticated into the Portal Framework application) automatically log in using a user name and password that you provide, while valid users (authenticated into the Portal Framework application) log in using a user name and password that they provide.

  For more information, see Section 65.5.2, "HTTP or HTTPS Proxy Configuration."

- **Support for HTTPS**

  Web Clipping enables you to clip content from HTTPS-based external web sites if appropriate server certificates are acquired. For information about server certificates, see Section 65.5.3.1, "Adding Certificates for Trusted Sites."

- **Open Transport API**

  By default, the Web Clipping provider supports only HTTP challenge-based authentication methods, such as Basic and Digest and form submission logins. To support custom authentication methods, such as Kerberos proxy authentication, you can use the Web Clipping Transport API. For more information, see Section 65.4.1, "Using the Web Clipping Transport API."

- **Reuse of a wide range of web content**

Web Clipping provides basic support of pages written with JavaScript, applets, and plug-in enabled content, retrieved through HTTP GET and POST methods of form submission.

Web Clipping also supports clipping of content from pages written with HTML 4.01, including:

- Clipping of `<applet>, <body>, <div>, <embed>, <img>, <object>, <ol>, <span>, <table>`, and `<ul>` tagged content
- Preservation of `<head>` styles and fonts, and CSS
- Support for UTF-8 compliant character sets
- Navigation through hyperlinks (HTTP GET), form submissions (HTTP POST), frames, and URL redirection

- **Globalization support**

  Web Clipping provides globalization support in URLs and URL parameters. For information about how Web Clipping determines the character set of clipped content, see Section 65.6, "Current Limitations of Web Clipping."

- **Persistent storage of Web Clipping definitions**

  Web Clipping definitions are stored persistently in a repository. By default, in JDeveloper, the Web Clipping producer is configured to use the file-based Oracle Metadata Services (MDS) as a repository. If you prefer, you can use a database schema for your Web Clipping repository. For information about configuring a Web Clipping repository, see Section 65.5.1, "Web Clipping Repository Configuration."

- **Encryption of secure information**

  Any secure information, such as passwords, is stored in an encrypted form, according to the Data Encryption Standard (DES), using Oracle encryption technology.

65.2 Adding Web Clipping to Your Application

As described in Chapter 63, "Consuming Portlets," you can add a Web Clipping portlet to a page created through Oracle JDeveloper. The Web Clipping portlet producer is included in the preconfigured PortalTools portlet producer in the Integrated WebLogic Server (Integrated WLS) that is installed with Oracle JDeveloper.

To add Web Clipping to your application:

1. Start Integrated WLS. For more information, see Section 2.2.4, "Managing the Integrated WebLogic Server."
2. Deploy the preconfigured PortalTools portlet producer, if it has not already been deployed. For more information, see Section 2.4.1.1, "Deploying the Preconfigured Portlet Producers."
3. Register the Web Clipping producer with your application. For more information, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."
4. Add the Web Clipping portlet to your application by dragging it to the desired JSPX page. For more information, see Section 63.5, "Adding Portlets to a Page."

Note: When you add an instance of the Web Clipping portlet onto your page in Oracle JDeveloper, open the Property Inspector for the portlet and ensure that the `AllModesSharedScreen` and `RenderPortletInIFrame` properties are set as follows:

- **AllModesSharedScreen** is set to `False` to display the Customize and Personalize in full page size.
- **RenderPortletInIFrame** is set to `True` to display the Web Clipping portlet in its own inline frame (`iframe`) in the View mode.

Note: To clip SSL-enabled web sites, you must add certificates of those sites to the certificate store. You are not required to add certificates of SSL-enabled web sites that use Equifax, VeriSign, or Cybertrust certificates because these certificates are included in the default certificate store.

For information about adding certificates, see Section 65.5.3.1, "Adding Certificates for Trusted Sites."

65.3 Integrating Authenticated Web Content Using Single Sign-On

You can leverage Oracle Single Sign-On to integrate content from external web sites that require authentication, into a Web Clipping portlet.

Note: You can associate only one external application with a producer. For each external application, you must register a new producer. Portal Framework application users access the authenticated content by using their user name and password for that system, not your credentials.

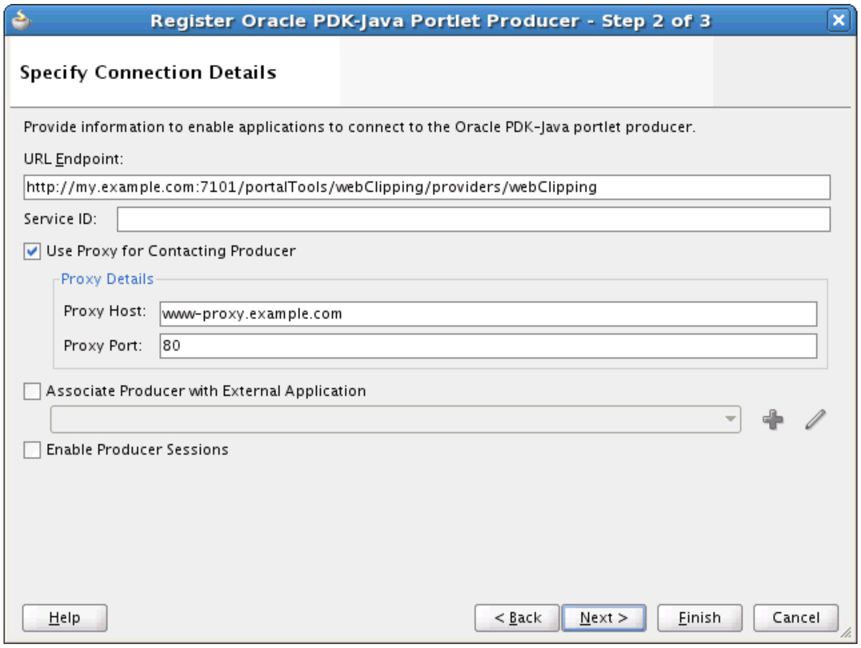
To integrate an external application that requires authentication:

1. Open your Portal Framework application in JDeveloper.
2. Register the external application, specifying the authentication information. For more information, see Section 74.13.3.2.1, "Registering an External Application in Oracle JDeveloper."
3. Register the Web Clipping producer. For information, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

   While registering the producer by using the Register Oracle PDK-Java Portlet Producer wizard, on the Specify Connection Details page, select the **Associate Producer with External Application** check box, and from the list of values, select the external application that you just registered. The **Enable Producer Sessions** check box gets selected automatically.

   Figure 65–1 shows the external application named MyOracleSupport associated with a Web Clipping producer.

Figure 65–1 Associating a Web Clipping Producer with an External Application



Register Oracle PDK-Java Portlet Producer - Step 2 of 3

Specify Connection Details

Provide information to enable applications to connect to the Oracle PDK-Java portlet producer.

URL Endpoint: http://my.example.com:7101/portalTools/webClipping/providers/webClipping

Service ID:

☑ Use Proxy for Contacting Producer

Proxy Details

Proxy Host: www-proxy.example.com

Proxy Port: 80

□ Associate Producer with External Application

□ Enable Producer Sessions

4. Add the Web Clipping portlet from the producer that you just registered to a JSPX page.

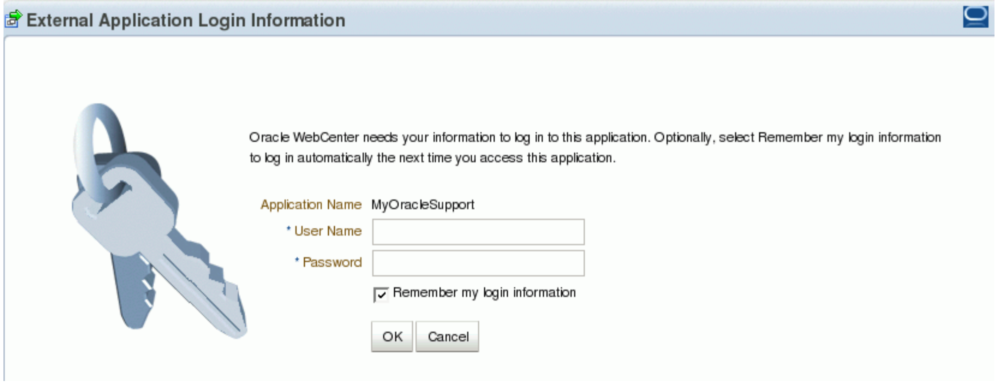
5. Right-click the JSPX page and choose **Run.**

6. If you did not specify shared or public credentials for the external application, then the portlet contains an **Update login information** link. Click this link.

7. Enter your credentials, and then click **OK** to log in to the external web site.

   Figure 65–2 shows the login screen of an external application named MyOracleSupport.

Figure 65–2 Logging into the Integrated External Application



External Application Login Information

Oracle WebCenter needs your information to log in to this application. Optionally, select Remember my login information to log in automatically the next time you access this application.

Application Name MyOracleSupport

* User Name

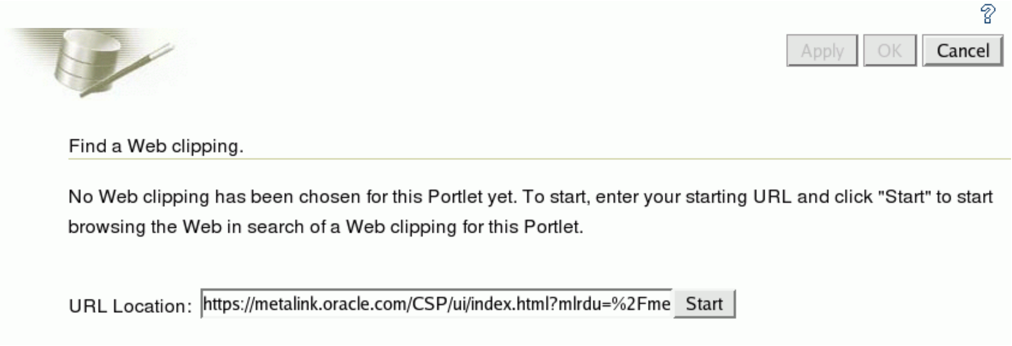
* Password

☑ Remember my login information

8. Click the **Actions** icon on the header of the Web Clipping portlet, and select **Customize**.

   The Find a Web Clipping page displays, with the default URL for the external application displayed in the **URL Location** field (Figure 65–3).

Figure 65–3 Finding a Web Clipping



Find a Web clipping.

No Web clipping has been chosen for this Portlet yet. To start, enter your starting URL and click "Start" to start browsing the Web in search of a Web clipping for this Portlet.

URL Location: https://metalink.oracle.com/CSP/ui/index.html?mlrdu=%2Fme

You can now select any section of a web page that you intend to display in your Web Clipping portlet. For information about how to customize a Web Clipping portlet, see the "Working with the Web Clipping Portlet" chapter in *Building Portals with Oracle WebCenter Portal*.

After you clip the required page of the external application, the web clipping, even though it is from a page requiring authentication, is available in your portlet.

65.4 Advanced Features of Web Clipping

Web Clipping supports certain advanced features. You can configure custom authentication methods by using the Web Clipping Transport API and rewrite image links to use a resource proxy.

This section includes the following topics:

- Section 65.4.1, "Using the Web Clipping Transport API"
- Section 65.4.2, "Rewriting Image Links to Use a Resource Proxy"

65.4.1 Using the Web Clipping Transport API

To support custom authentication methods, you can use the Web Clipping Transport API. To extend the Web Clipping transport layer to support custom authentication methods, you must perform several implementation and deployment procedures.

This section includes the following topics:

- Section 65.4.1.1, "Implementing the Web Clipping Transport API"
- Section 65.4.1.2, "Deploying the Web Clipping Transport API"

65.4.1.1 Implementing the Web Clipping Transport API

If you want to support a custom authentication method, such as Kerberos, you must first implement your own transport classes.

To implement custom transport classes:

1. Override two use cases of the `oracle.portal.wcs.transport.http.HttpTransportLiaison` interface.

   In Web Clipping, this interface is used to abstract the HTTP transport layer. By default, the two use cases of this interface are manifested by the following implementations:

  - `HttpClientStudioTransportLiaison`, which handles HTTP transport in Web Clipping Studio mode
  - `HttpClientProviderTransportLiaison`, which handles HTTP transport in Web Clipping Producer show mode

  To support more authentication methods, you must override the `addRequestHeaders` methods for both the Studio and Provider `HttpClientTransportLiaison` implementations to add your own authentication-specific headers. For more information, see the *API Reference*.

2. Compile the new subclasses and package them into a JAR file.

   For example, to compile the new subclasses, use the following command:

   `javac -classpath` *`path_to_wcejar`* `-d classes/`

   where *`path_to_wcejar`* refers to the path to the `wce.jar` file.

   To create the JAR file, for example, run the following command from the `classes` directory:

   `jar cvf ../`*`mytransport.jar`*

   wherewhere*`mytransport.jar`* refers to the JAR file users want to create.

65.4.1.2 Deploying the Web Clipping Transport API

After implementing the new transport classes, you must deploy the JAR file to support the custom authentication method.

To deploy the JAR file:

1. Place the JAR file into the class path or shared library that is used by the Web Clipping producer at runtime.
2. Register the transport class in the `web.xml` file for the Web Clipping producer by making the following modifications to the context parameters defined for `HttpClientProviderTransportLiaison` and `HttpClientStudioTransportLiaison`:
   - Change the parameter value for `oracle.webclipping.provider.TransportLiaisonClass` to the name of the new class extended from the `HttpClientProviderTransportLiaison` class.
   - Change the parameter value for `oracle.webclipping.studio.TransportLiaisonClass` to the name of the new class extended from the `HttpClientStudioTransportLiaison` class.
3. Restart the producer server for the changes to take effect.

65.4.2 Rewriting Image Links to Use a Resource Proxy

Web Clipping enables you to rewrite image links to use a resource proxy. To enable this feature, you must add the following entry to the `web.xml` file of the Web Clipping producer:

```
<env-entry>
    <env-entry-name>oracle/webclipping/rewriteImageLink</env-entry-name>
    <env-entry-type>java.lang.Boolean</env-entry-type>
    <env-entry-value>false</env-entry-value>
</env-entry>
```

65.5 Web Clipping Portlet Configuration Tips

Before you use Web Clipping, you must perform some administrative tasks.

This section includes the following topics:

- Section 65.5.1, "Web Clipping Repository Configuration"
- Section 65.5.2, "HTTP or HTTPS Proxy Configuration"
- Section 65.5.3, "Web Clipping Producer Security"

65.5.1 Web Clipping Repository Configuration

Web clippings have definitions that must be stored persistently in an Oracle Metadata Services (MDS) store or an Oracle database.

> **Note:** You cannot use a Microsoft SQL Server or IBM DB2 database as the Web Clipping repository.

You can view the Web Clipping repository configuration by accessing the Web Clipping Producer Test Page at:

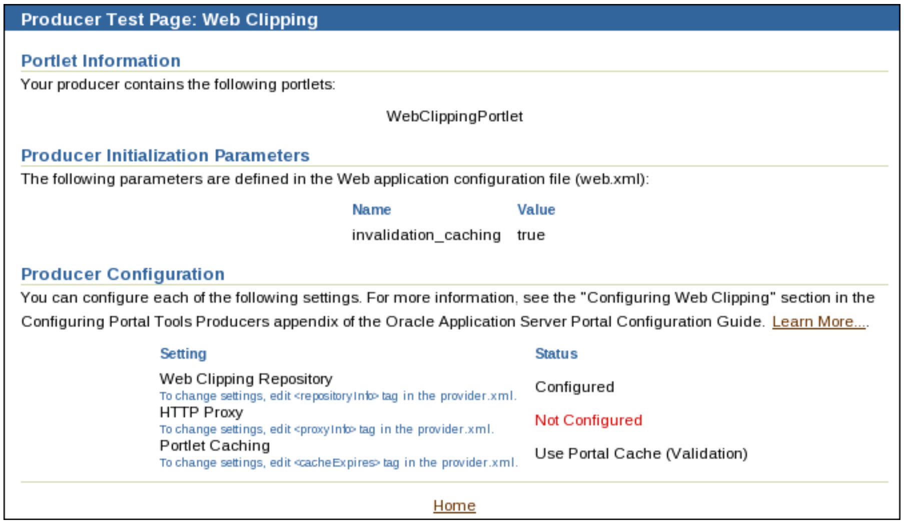
```
http://host:port/portalTools/webClipping/providers/webClipping
```

where *host* is the server to which your Web Clipping producer has been deployed and *port* is the port to which the server is listening for HTTP requests.

> **Note:** Integrated WLS and the `WLS_Portlet` managed server are deployed to different ports even if they may be available on the same system. By default, Integrated WLS is deployed to port 7101 and `WLS_Portlet` is deployed to port 8889.

The Provider Test Page automatically detects whether the Web Clipping producer is configured with a valid repository. If it is not, then the **Status** column for the Web Clipping Repository displays **Not Configured**. Figure 65–4 shows the Provider Test Page of Web Clipping.

Figure 65–4 Web Clipping - Provider Test Page



Producer Test Page: Web Clipping

Portlet Information

Your producer contains the following portlets:

WebClippingPortlet

Producer Initialization Parameters

The following parameters are defined in the Web application configuration file (web.xml):

Name	Value
invalidation_caching	true

Producer Configuration

You can configure each of the following settings. For more information, see the "Configuring Web Clipping" section in the Configuring Portal Tools Producers appendix of the Oracle Application Server Portal Configuration Guide. Learn More....

Setting	Status
Web Clipping Repository To change settings, edit <repositoryInfo> tag in the provider.xml.	Configured
HTTP Proxy To change settings, edit <proxyInfo> tag in the provider.xml.	Not Configured
Portlet Caching To change settings, edit <cacheExpires> tag in the provider.xml.	Use Portal Cache (Validation)

Home

You cannot change the Web Clipping configuration information by using the Provider Test Page. You can configure the Web Clipping repository by setting appropriate values in the `provider.xml` file. In this file, you use the `repositoryInfo` tag to specify the Web Clipping repository settings.

Note: To determine the path of `provider.xml`, search for `webClipping/provider.xml` in the file system. For example, run the following command in UNIX:

```
> find DOMAIN_DIR -name "provider.xml" | grep -i webClipping
```

In Oracle JDeveloper's Integrated WLS, Web Clipping's `provider.xml` is located here:

```
JDEV_SYSTEM_DIRECTORY/DefaultDomain/servers/DefaultServer/tmp/_WL_
user/portalTools_11.1.1.2.0/RANDOMLY_GENERATED_
DIRECTORY/war/WEB-INF/providers/webClipping/provider.xml
```

Note that, on a Windows platform, pages in Portal Framework applications are not rendered if there is a space in the path to the system directory in JDeveloper. Therefore, ensure that the *`JDEV_SYSTEM_DIRECTORY`* path does not contain spaces.

In the Fusion Middleware 11*g* installation, Web Clipping's `provider.xml` is located here:

```
FMW_HOME/user_projects/domains/wc_domain/servers/WLS_Portlet/tmp/_
WL_user/portalTools_11.1.1.2.0/RANDOMLY_GENERATED_
DIRECTORY/war/WEB-INF/providers/webClipping/provider.xml
```

This section includes the following topics:

- Section 65.5.1.1, "Using Oracle Metadata Services (MDS) as the Web Clipping Repository"
- Section 65.5.1.2, "Using an Oracle Database as the Web Clipping Repository"
- Section 65.5.1.3, "Configuring Web Clipping Repository in provider.xml"
- Section 65.5.1.4, "Attributes and Child Tags of the repositoryInfo Tag"

- Section 65.5.1.5, "Migrating the Web Clipping Repository"

65.5.1.1 Using Oracle Metadata Services (MDS) as the Web Clipping Repository

By default, in Oracle JDeveloper, the Web Clipping producer hosted on Integrated WLS, the default server, is configured to use MDS, which is file-based, as the Web Clipping repository.

> **Note:** In a full Oracle Fusion Middleware installation, the Web Clipping portlet producer is also included within the `WLS_Portlets` managed server in the default domain. By default, this Web Clipping portlet producer is configured to use the Oracle database, which is installed as part of Oracle WebLogic Server, as the Web Clipping repository.

Example 65–1 shows MDS as the default repository in `provider.xml`.

Example 65–1 MDS as the Default Web Clipping Repository in provider.xml

```
<repositoryInfo class="oracle.portal.wcs.provider.info.MdsInformation">
  <mdsConfigLocation>mds-config.xml</mdsConfigLocation>
</repositoryInfo>
```

For an MDS repository, the `repositoryInfo` tag is set to the `MdsInformation` class. The `mdsConfigLocation` entry specifies the path to the `mds-config.xml` file, which contains the metadata store configuration information, including the path to the actual metadata store. In Oracle JDeveloper, the `mds-config.xml` file is located at the following path:

```
JDEV_SYSTEM_DIRECTORY/DefaultDomain/servers/DefaultServer/tmp/_WL_
user/portalTools_11.1.1.2.0/RANDOMLY_GENERATED_DIRECTORY/war/WEB-INF
```

> **Note:** On a Windows platform, pages in Portal Framework applications are not rendered if there is a space in the path to the system directory in JDeveloper. Therefore, ensure that the *`JDEV_SYSTEM_DIRECTORY`* path does not contain spaces.

The `mds-config.xml` file specifies the location of the repository in a property tag:

```
<property name="metadata-path" value="portletdata/tools/webClipping"/>
```

The location specified for `value` is relative to *`JDEV_HOME`*`/portal`. Any relative path specified is interpreted to be relative to *`JDEV_HOME`*`/portal`. To use another location, for example, a location outside the Oracle JDeveloper home, then specify an absolute path, such as `c:\mds`.

> **Note:** For a multiple middle tier deployment, change the metadata path to a shared file system.

65.5.1.2 Using an Oracle Database as the Web Clipping Repository

Although MDS is the default repository in Oracle JDeveloper, you can alternatively select to use a database schema for your Web Clipping repository.

Note: If you use a database as your Web Clipping repository, any customizations are retained even if the Web Clipping producer or the consuming application is redeployed.

You can use either of the following database schemas for Web Clipping:

- The default `PORTLET` database schema created by RCU for Oracle WebLogic Server
- A user-defined database schema for Oracle 9*i* or later

Note: You cannot use a Microsoft SQL Server or IBM DB2 database as the Web Clipping repository.

This section includes the following topics:

- Section 65.5.1.2.1, "Using the Database Schema Created by RCU"
- Section 65.5.1.2.2, "Creating a Database Schema"

65.5.1.2.1 Using the Database Schema Created by RCU

For Web Clipping repository, you can use the Oracle database installed as part of Oracle WebLogic Server, through a JNDI data source named `jdbc/portletPrefs`. To access the database, the schema named `PORTLET` is used.

Note: The `PORTLET` schema must be created in the Oracle database configured for WebCenter Portal. For more information, see the "Installing Oracle WebCenter Portal" chapter in the *Installation Guide for Oracle WebCenter Portal*.

65.5.1.2.2 Creating a Database Schema

You can use any user-defined schema for an Oracle 9*i* or later database as the Web Clipping repository. To create a database schema for Web Clipping definitions and clippings, run the Java command described in Example 65–2.

Example 65–2 Java Command for Creating a Schema for Web Clipping Portlet Definitions and Clippings

```
java -classpath WC_ORACLE_HOME/lib/xmlparserv2.jar:
WC_ORACLE_HOME/jdbc/lib/ojdbc14.jar:WC_ORACLE_HOME/portal/jlib/wce.jar
oracle.portal.wcs.Installer -installSchema -username dbuser -password
dbpassword -dburl jdbc:oracle:thin:@//host:port/dbid
```

Where:

- *`WC_ORACLE_HOME`* is the path to your WebCenter Portal Oracle home directory
- *`dbuser`* is the database user for the schema

  Consider using the same database user you use to create the WSRP and PDK-Java preference store database schema. If you do not use the same user, then you must create a new user and grant it connect and resource privileges.
- *`dbpassword`* is the specified user's password
- *`dburl`* is the URL for the database

This is the database that contains the schema that you create for Web Clipping portlet definitions and clippings by using the following syntax:

```
jdbc:oracle:thin:@//dbhost:dbport/service_name
```

For example:

```
jdbc:oracle:thin:@//shobeen:1521/sales_us
```

Note: The classpath in Example 65–2 uses different separators for UNIX and Windows. On UNIX systems, the `classpath` uses a colon (:) separator. On Windows systems, the `classpath` uses a semicolon (;) separator.

65.5.1.3 Configuring Web Clipping Repository in provider.xml

To change the repository configuration for the Web Clipping producer deployed to Integrated WLS:

1. Open the `provider.xml` file in a text editor.
2. Specify the setting for your Web Clipping repository:
   - Use the `PORTLET` schema referred by the JNDI data source created by RCU. Specify the entries shown in Example 65–3.

Example 65–3 Oracle Database as the Web Clipping Repository

```
<repositoryInfo class="oracle.portal.wcs.provider.info.JdbcDbInformation">
   <connectionName>jdbc/portletPrefs</connectionName>
   <useRAA>false</useRAA>
   <useASO>false</useASO>
</repositoryInfo>
```

For information about tag parameters, see Section 65.5.1.4, "Attributes and Child Tags of the repositoryInfo Tag."

   - Use the database schema, created for an Oracle database 9*i* or later, where you can manually specify connection information.

     To specify Oracle 9*i* or later database as the Web Clipping repository, specify database connection parameters in the entry shown in Example 65–4.

Example 65–4 Setting Oracle Database 9i or Later as Web Clipping Repository

```
<repositoryInfo class="oracle.portal.wcs.provider.info.DatabaseInformation">
   <useRAA>false</useRAA>
   <databaseHost>dbhost.mycompany.com</databaseHost>
   <databasePort>1521</databasePort>
   <databaseSid>iasdb</databaseSid>
   <databaseUsername>scott</databaseUsername>
   <databasePassword>!tiger</databasePassword>
   <useASO>false</useASO>
</repositoryInfo>
```

For information about tag parameters, see Section 65.5.1.4, "Attributes and Child Tags of the repositoryInfo Tag."

If you require a secure database connection, then enable the Advanced Security Option (ASO) by setting the `useASO` entry to `true`. For more information about configuring ASO, see Section 65.5.3, "Web Clipping Producer Security."

Note: Only one entry of `<repositoryInfo>` can exist in `provider.xml`. Depending on the Web Clipping repository you choose, you must uncomment only that entry.

---

3. Save the `provider.xml` file.
4. Restart Integrated WLS.

65.5.1.4 Attributes and Child Tags of the repositoryInfo Tag

Table 65–1 lists and describes the attributes and child tags of the `repositoryInfo` tag.

Note: The attributes and child tags of the `repositoryInfo` tag are also described in the comments in the Web Clipping `provider.xml` file.

In the comments in the `provider.xml` file, the example provided for *Oracle9i Database or later using Oracle infrastructure database* is specific to Oracle Portal and its infrastructure database and application programming interfaces. That example must not be used for Portal Framework application implementations.

Table 65–1 Attributes and Child Tags of the repositoryInfo Tag

Attributes/Parameter	MDS/Database	Description
`class`	Both	The `class` attribute specifies the type of repository used to store Web Clipping definitions. The possible values for this attribute are: ■ `oracle.portal.wcs.provider.info.MdsInformation` This value signifies that MDS is used to store Web Clipping definitions and that MDS configuration is pushed to the `mds-config.xml` file. ■ `oracle.portal.wcs.provider.info.DatabaseInformation` This value signifies that an Oracle9*i* Database or later is used to store Web Clipping definitions and that the database connection details are included as children in the `repositoryInfo` tag. ■ `oracle.portal.wcs.provider.info.JdbcDbInformation` This value signifies that Oracle database installed as part of Oracle WebLogic Server is used to store Web Clipping definitions.
`mdsConfigLocation`	MDS	Use the `mdsConfigLocation` tag when the value for the `class` attribute indicates an MDS repository. It points to the MDS configuration file `mds-config.xml`, which specifies the actual MDS location. The `mds-config.xml` file is located at: *`MW_HOME`*`/wlserver_10.3/wc_domain/servers/WLS_Portlet/tmp/_WL_user/portalTools_11.1.1.2.0/yyggl7/war/WEB-INF`
`connectionName`	Database	Specifies the JNDI name of the data source where the Web Clipping repository has been installed using the RCU. By default, the connection name is `jdbc/portletPrefs`, which points to the `PORTLET` schema in Oracle WebLogic Server. In an interoperability scenario where an Oracle WebLogic Server 11*g* Middle Tier is paired with an Oracle Application Server 10*g* repository, the connection points to the `PORTAL` schema in the Oracle Application Server 10*g* repository.
`useASO`	Database	Set to `true` or `false`: ■ Specify `true` to use Oracle Advanced Security Option (ASO) to encrypt the communication channel between the Web Clipping producer and the database. This is provided for introducing added security if case-sensitive data is contained in the clipped content. ■ Specify `false` to omit this option.
`useRAA`	Database	Set to `true` or `false`: ■ Specify `true` if Repository Access APIs are used to access the database connection parameters. Specifying `true` is equivalent to making the Web Clipping producer use the default Oracle infrastructure database as the repository. Specifying `true` removes the need for other `repositoryInfo` child tags. ■ Specify `false` to omit this option.
`databaseHost`	Database	Specify the host name of the Oracle database. Use only version 9*i* or later. For example: `mycompany.dbhost.com`
`databasePort`	Database	Specify the port number of the Oracle database listener. This is usually `1521`.

Table 65–1 (Cont.) Attributes and Child Tags of the repositoryInfo Tag

Attributes/Parameter	MDS/Database	Description
`databaseSid`	Database	Specify the Oracle SID of the database that hosts the Web Clipping repository.
`databaseUsername`	Database	Enter the user name used to log in to the database.
`databasePassword`	Database	Enter a plain text password for the specified database user name. Prefix the password with an exclamation point (!) to allow the Web Clipping producer to encrypt the password when the producer starts. For example: `!AX3tR`

65.5.1.5 Migrating the Web Clipping Repository

By default, Web Clipping uses MDS, which is file-based, to store Web Clipping definitions and associated metadata. But you can configure Web Clipping to use a database. To migrate this repository for Portal Framework applications, you can use the Predeployment tool in export and import mode to go from MDS to a database, or vice versa. This procedure must be done for each application as follows:

1. Run the Predeployment tool in `export` mode on all Portal Framework applications that use the Web Clipping producer.
2. Update the producer to use a different repository. For information, see Section 65.5.1.3, "Configuring Web Clipping Repository in provider.xml."
3. Run the Predeployment tool in `import` mode on all Portal Framework applications that use the Web Clipping producer.

65.5.2 HTTP or HTTPS Proxy Configuration

Your HTTP or HTTPS proxy settings must be set to allow the Web Clipping Studio to connect to web sites outside of your firewall. You can specify the settings by manually editing the `provider.xml` file.

Portal Framework application administrators can set proxy settings manually according to the HTTP or HTTPS configuration. Edit the appropriate entries in the `provider.xml` file.

Example 65–5 shows the relevant portion of `provider.xml`.

Example 65–5 Proxy Settings

```
- <!--
 proxy information: Fill the following up if you have a proxy
 server between the provider and external sites.
   <proxyInfo class="oracle.portal.provider.v2.ProxyInformation">
      <httpProxyHost>proxy.mycompany.com</httpProxyHost>
      <httpProxyPort>80</httpProxyPort>
      <dontProxyFor>*.mycompany.com</dontProxyFor>
      <proxyUseAuth>true</proxyUseAuth>
      <proxyType>Basic</proxyType>
      <proxyRealm>realm1</proxyRealm>
      <proxyUseGlobal>false</proxyUseGlobal>
      <proxyUser>scott</proxyUser>
      <proxyPassword>!tiger</proxyPassword>
   </proxyInfo>
```

```
  -->
```

It is optional to specify values for the following tags: <proxyUseAuth>, <proxyType>, <proxyRealm>, <proxyUseGlobal>, <proxyUser>, and <proxyPassword>.

Table 65–2, describes the proxy settings you specify in the provider.xml file.

Table 65–2 Provider.xml Tags

Parameter	Description
httpProxyHost	Enter the host name of a proxy server if one is required to make a URL connection from the Web Clipping producer to its data sources.
httpProxyPort	Enter the port number for the HTTP Proxy Host.
dontProxyFor	Enter the name of any domain or hosts to which you can directly connect, bypassing a proxy server. Domain names are the part of a URL that contain the names of a business, or organization, or government agency, for example: *.company.com, *.us.company.com Hosts can be fully qualified host names or can be IP addresses.
proxyUseAuth	Acceptable values: true | false Enter true if your proxy server requires authentication. The authentication parameters are specified by the following tags: proxyType, proxyRealm, proxyUseGlobal, proxyUserName, and proxyPassword.
proxyType	Acceptable values: Basic | Digest Choose the type of proxy server this provider. For more information about basic or digest authentication, see http://www.faqs.org/rfcs/rfc2617.html.
proxyRealm	Enter the name of the realm of the proxy server that is accessed by the user according to the login information described later in the table. If you do not know the name of the realm, then contact the administrator of the proxy server.
proxyUseGlobal	Acceptable values: true | false If true, then the <proxyUser> and <proxyPassword> values are used for all users. Users do not see the Proxy Authentication section on the Source tab and Personalize page. If false, then page designer must log in using the Proxy Authentication section on the Source tab when they define the portlet. The end user must log in using the Proxy Authentication section on the Personalize screen. If <proxyUsername> and <proxyPassword> are given, then they are only used for public users.
proxyUserName	Enter the user name to log in to the proxy server.
ProxyPassword	Enter the password for the specified user name. You must prefix ! before your plain password text. It is then encrypted in the provider.xml file for protection when the producer starts.

Note: For environments that use a proxy server to reach external web sites, you can use the `dontProxyFor` entry to specify the proxy exception list. Web Clipping uses the proxy exception list to restrict users from clipping content from unauthorized external web sites. Users attempting to reach a web site in a listed domain, from the Web Clipping Studio, receive an HTTP timeout error.

65.5.3 Web Clipping Producer Security

The preceding sections described the administrative tasks that must be performed before you are able to use the Web Clipping producer. The following sections describe some security configuration options that you must implement to enable the Web Clipping producer to access Secure Sockets Layer (SSL)-enabled web sites and encrypt the channel between itself and the database.

This section includes the following topics:

- Section 65.5.3.1, "Adding Certificates for Trusted Sites"
- Section 65.5.3.2, "Configuring Oracle Advanced Security for the Web Clipping Producer"

65.5.3.1 Adding Certificates for Trusted Sites

When a user navigates to a secure site, the web site typically returns a certificate, identifying itself to the user when asking for secure information. If the user accepts the certificate, then the certificate is placed into the list of trusted certificates of the browser so that a secure channel can be opened between the browser and that server. Like a web browser, the Web Clipping producer acts as an HTTP client to external web sites. To keep track of trusted sites, the Web Clipping producer uses the `cacerts` file, which is the Java keystore to store trusted certificates.

By default, the `cacerts` file stores various certificates including the Equifax, VeriSign, and Cybertrust certificates. However, it does not include all possible server certificates that exist on the web. For this reason, when a user navigates to a secure server using HTTPS, the user can get an SSL handshake failed exception in the Web Clipping Studio. To solve this problem, you must add the certificate of that site to the `cacerts` file.

To add a certificate to the `cacerts` file:

1. Download the certificate of the HTTPS web site and save the certificate in the PEM format.

   Tip: Mozilla Firefox 3.0 or later enable you to save a certificate file in the PEM format.

2. Locate the path to the `cacerts` file:

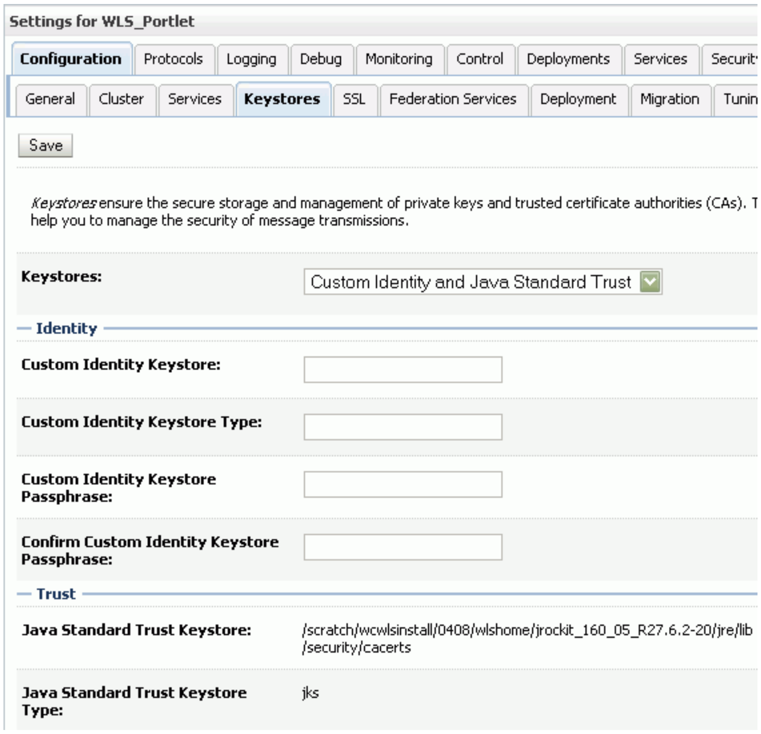
   a. Log in to the Oracle WebLogic Server Administration Console by using the following URL format:

      `http://`*`host:port`*`/console`

   b. Open the **Keystore** tab for the **WLS_Portlets** managed server.

   c. Note down the location of the `cacerts` file given in the **Java Standard Trust Keystore** field.

Figure 65–5 Locating the cacerts file



Settings for WLS_Portlet

Keystores ensure the secure storage and management of private keys and trusted certificate authorities (CAs). T help you to manage the security of message transmissions.

Keystores: Custom Identity and Java Standard Trust

Custom Identity Keystore:

Custom Identity Keystore Type:

Custom Identity Keystore Passphrase:

Confirm Custom Identity Keystore Passphrase:

Java Standard Trust Keystore: /scratch/wcwlsinstall/0408/wlshome/jrockit_160_05_R27.6.2-20/jre/lib /security/cacerts

Java Standard Trust Keystore Type: jks

3. At the command prompt, navigate to the location of the `cacerts` file and run the following command to add the certificate:

   ```
   keytool -importcert -alias certi_alias -file certifi_name -keystore
   cacerts -storepass password
   ```

   where *`certi_alias`* refers to the alias used for the certificate, *`certifi_name`* refers to the certificate file name, and *`password`* refers to the password of the `cacerts` file. The default password is `changeit`.

   For example,

   ```
   keytool -importcert -alias stamf05 -file stamf05.crt -keystore cacerts
   -storepass changeit
   ```

   > **Tip:** It is advisable to import trusted certificate into the `cacerts` file by using an alias. It makes it easier for you to delete or list the entries in the keystore.

65.5.3.2 Configuring Oracle Advanced Security for the Web Clipping Producer

The Web Clipping producer can use Oracle Advanced Security Option (ASO) to secure and encrypt the channel between itself and the database that hosts the Web Clipping repository. This feature is available only if you have selected any Oracle database as the Web Clipping repository. This feature is disabled by default as Oracle Metadata Services is the default Web Clipping repository in Oracle JDeveloper.

To enable ASO:

1. Open `provider.xml` in a text editor.
2. Under the repository settings section in the file (shown in Example 65–3), set the `useASO` entry to `true`.
3. Save the `provider.xml` file.

In addition, you must set the following ASO configuration parameters in the `sqlnet.ora` file to ensure that the database connections created between the Web Clipping producer and the database hosting the Web Clipping repository are using ASO.

- `SQLNET.AUTHENTICATION_SERVICES` -- This parameter is used to select a supported authentication method in making database connections with ASO. For more information about setting this parameter, see the *Oracle Database Advanced Security Administrator's Guide*.
- `SQLNET.CRYPTO_SEED` -- This parameter denotes the cryptographic seed value (FIPS 140-1 setting), used in making database connections with ASO.

  For more information about setting parameters and about the values to use for various possible combinations of parameters, see the *Oracle Database Advanced Security Administrator's Guide*.

> **Note:** When setting these parameters after the initial configuration (where the database parameters are already set up), database connections are assumed to be open. Because enabling the ASO affects all connections made to the database, it is advisable to restart Integrated WLS containing the Web Clipping producer to reset all the current connections to use ASO. You must also do this when disabling ASO.

65.6 Current Limitations of Web Clipping

When you use Web Clipping, you should be aware of the following limitations.

- If the site that you intend to clip uses a large amount of JavaScript to manipulate cookies or uses the `document.write` JavaScript method to modify the HTML document being written, then you may not be able to clip content from the site.
- When you integrate with partner applications (by using `mod_osso`), you cannot clip directly through those partner applications in an authenticated manner. However, you can use partner applications through the external application framework.
- You cannot use the Web Clipping portlet to clip Oracle Portal pages and ADF pages. As a workaround, reregister the same producer in the destination portal and edit the portal manually.
- You cannot use the Web Clipping portlet to clip a web page that contains multiple frames, that is, a frameset.
- Note the following about Web Clipping and the use of a CSS:
  - If a web page contains multiple portlets that use a CSS, then they should not conflict if the CSS uses distinct style names, such as `OraRef`, to specify a style within an HTML tag, rather than using an HTML tag name, such as `<A>`, as the name of the style.
  - If one portlet uses a CSS, and that CSS overwrites the behavior of HTML tags by using the name of the tag, such as `<A>`, as the name of the style, and a second portlet on the same page does not use a CSS, the second portlet is affected by the style instructions of the CSS of the first portlet.
  - If two portlets on the same page use a different CSS and each CSS overwrites the behavior of HTML tags by using the name of an HTML tag, such as `<A>`, as the name of the style, then the style that is displayed depends on the browser.

- Web Clipping checks for globalization support settings in the following way:

  1. Web Clipping checks the `Content-Type` in the HTTP header for the `charset` attribute. If this is present, then it assumes that this is the character encoding of the HTML page.

  2. If the `charset` attribute is not present, then Web Clipping checks the HTML `META` tag on the page to determine the character encoding.

  3. If the HTML `META` tag is not found, then Web Clipping uses the `charset` in the previous browsed page. If this is the first page, then it defaults to the ISO-8859-1 character encoding.

  4. If the value of the `charset` for `Content-Type` or `META` tag is not supported (for example, if the `charset` was specified as `NONE`), then Web Clipping uses the default character set, ISO-8859-1, not the `charset` in the previously browsed page.

- To use the Web Clipping portlet, you must use Netscape 7.0 or later, Microsoft Internet Explorer 5.5 or later for Windows 2000, or Microsoft Internet Explorer 6.0 or later for Windows XP. If you use browser versions older than these, then you may encounter JavaScript errors.

65.7 Troubleshooting Web Clipping

This section provides information to help you troubleshoot problems you may encounter while using Web Clipping.

Encountered "x" at line n, column n. Was expecting one of: "x", "y" ...

Parser error message written to the log file.

Problem

The web content displayed in the Web Clipping portlet contains invalid HTML or JavaScript.

Solution

This is a site-specific issue, not a Web Clipping error. Contact the site's administrator for assistance.

Part XI

Delivering Personalized Content

Part XI contains the following chapters:

- Chapter 66, "Personalizing Oracle WebCenter Portal Applications"
- Chapter 67, "Implementing Custom Data Providers: Introduction"
- Chapter 68, "Implementing Custom Function Providers: Introduction"
- Chapter 69, "Function Provider Reference"
- Chapter 70, "Using the Property Service"
- Chapter 71, "Property Service REST APIs"
- Chapter 72, "Conductor API Reference"
- Chapter 73, "Cache Management for Personalization"

66

Personalizing Oracle WebCenter Portal Applications

This chapter describes how to integrate Personalization into a Portal Framework or WebCenter Portal application to deliver targeted content based on both user and application context. This chapter also describes the Personalization run-time system and associated tools that allow the declarative definition of application flow.

This chapter includes the following topics:

- Section 66.1, "Introduction to Personalization"
- Section 66.2, "Integrating Personalization in Your Application"
- Section 66.3, "Deploying Personalization Files"
- Section 66.4, "Tutorial: Creating, Testing and Deploying a Simple Application"
- Section 66.5, "Using Personalization in WebCenter Portal"

For more information about Personalization, also see:

- Appendix G.11, "ELs Related to Personalization"
- the "Managing Personalization" chapter in *Administering Oracle WebCenter Portal*

66.1 Introduction to Personalization

Personalization provides a dynamically derived user experience for your Portal Framework application. Personalization evaluates defined sources of input data, generates a decision based on that evaluation, and applies this information to a declaratively defined Personalization scenario. Personalization, for example, can return content or change application flow based on information about a user in a Human Resources database, targeting the application experience for that specific user.

This section provides an overview of the features and requirements of Personalization, and contains the following subsections:

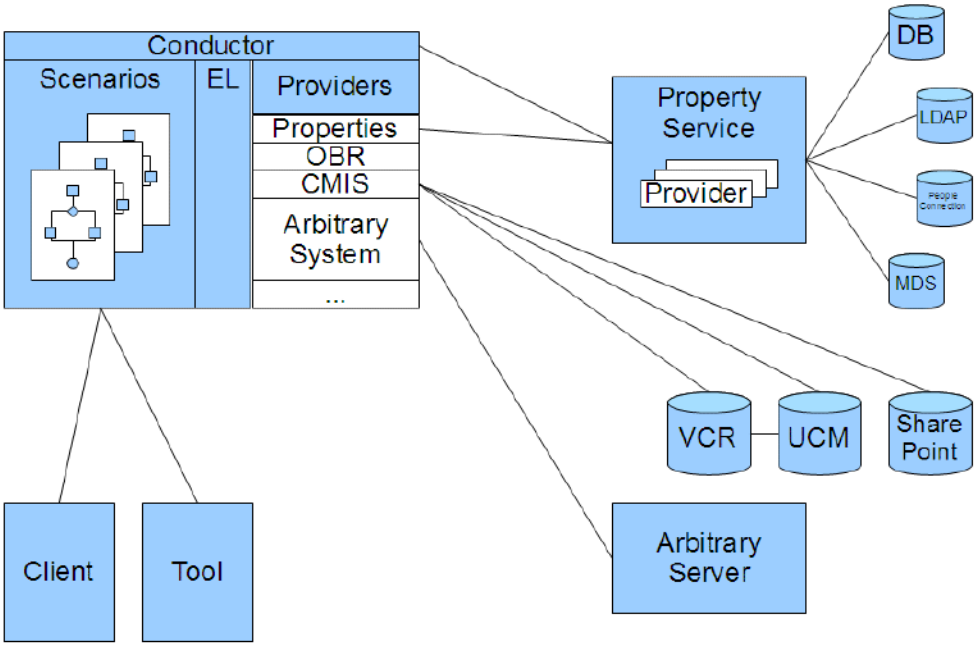
- Section 66.1.1, "Personalization Architecture"
- Section 66.1.2, "The Conductor"
- Section 66.1.3, "Using Data Providers"

66.1.1 Personalization Architecture

Figure 66–1 shows the architecture and out-of-the box services and components that comprise Personalization. These and other Personalization components are described in:

- Section 66.1.2, "The Conductor"
- Section 66.1.3, "Using Data Providers"

Figure 66–1 Personalization Services Architecture



66.1.2 The Conductor

This section describes the role of the *Conductor*. The Conductor is the heart of the Personalization engine, and contains and runs the units of work called *scenarios*. The Conductor runs the prepared scenarios, and provides access to provider extensions that plug into the Conductor. These aspects of the Conductor are described in the following sections:

- Section 66.1.2.1, "Scenarios"
- Section 66.1.2.2, "Personalized Application Flow"
- Section 66.1.2.3, "Property Set Integration"
- Section 66.1.2.4, "Provider Integration"

66.1.2.1 Scenarios

A *scenario* is defined by a script you create using the Scenario Editor in JDeveloper (or provide as an XML file). A scenario is based on a simple syntax that allows conditional statement evaluation, resulting in some form of content being returned to the client. Content can be filtered or manipulated prior to it being returned to the client.

A scenario, rather than returning targeted content, can also be used to make dynamic changes to application flow, resulting in a personalized user experience within the application.

In JDeveloper, you can use the Scenario Editor to graphically design your scenario. You can also create XML file-based scenarios. See Section 66.2.2.3, "Creating a New Scenario in the Scenario Editor" and Section 66.2.2.4, "Specifying Scenario Flow Using Node Types." See also Section 66.2.3, "Creating File-Based Scenarios."

66.1.2.2 Personalized Application Flow

As well as returning content targeted to a specific user, scenarios executing within the Conductor can also control application flow, render user interface components, and execute application-related events. Using the Conductor's public Java and Expression Language (EL) API, you can provide seamless integration with an existing Java or Web-based application. See Chapter 72, "Conductor API Reference" for more information about using Java and EL APIs.

66.1.2.3 Property Set Integration

The Property Service uses *property sets* to organize sets of user or application data, and *property definitions* to assign a data type to property data. You can extend the Property Service to access additional user profile data in an enterprise LDAP repository, or to access additional repositories such as Oracle MDS. For more information about the Property Service and property sets, see Section 66.2.2.2, "Creating Property Sets and Property Definitions"

66.1.2.4 Provider Integration

Providers provide a way to access external resources within your scenario. As well as three out-of-the-box providers for the Property Service, Content Server Provider (CMIS), and Activity Graph, the Conductor also supports an extensible architecture that lets you implement and access custom providers from within your Scenarios. For more information about providers, see Section 66.1.3, "Using Data Providers."

66.1.3 Using Data Providers

A data provider is an interface point for the Conductor that lets it communicate with external services. Personalization provides out-of-the-box providers for the Property Service, a CMIS provider enabling interaction with an Oracle WebCenter Content Server, and Activity Graph, and a locator used by the Property Service provider to allow integration with People Connections. There are also two types of custom providers you can implement: *data providers* and *function providers*.

This section describes the out-of-the-box providers and the two types of custom providers in the following subsections:

- Section 66.1.3.1, "Out-of-the-Box Providers"
- Section 66.1.3.2, "Writing Custom Data Providers"
- Section 66.1.3.3, "Writing Custom Function Providers"

66.1.3.1 Out-of-the-Box Providers

This section describes the out-of-the-box providers you can access from within your scenarios, and a locator used by the Property Service provider to allow integration with People Connections.

This section contains the following subsections:

- Section 66.1.3.1.1, "Property Service Provider"
- Section 66.1.3.1.2, "CMIS Provider"
- Section 66.1.3.1.3, "Activity Graph Provider"
- Section 66.1.3.1.4, "People Connections Locator"

66.1.3.1.1 Property Service Provider

The Property Service Provider allows integration with the Property Service. This provider allows you to retrieve property sets for a particular property set definition, retrieve a property set by name, or return a specific property from a property set. For more information about the Property Service Provider, see Section 66.2.2.6.1, "Using the Property Service Provider."

66.1.3.1.2 CMIS Provider

The CMIS Provider provides services to retrieve and search for content from standards-based CMIS (Content Management Interoperability Services) content servers, specifically provided by the Oracle WebCenter Content Server. The CMIS Provider also has utility function providers to convert results to simplified form. For information about integrating the CMIS Provider, see Section 66.2.2.6.2, "Using the CMIS Provider." For information about creating and editing connection configuration for the Content Server provider, see "Configuring the REST Service Identity Asserter" in the *Administering Oracle WebCenter Portal*.

66.1.3.1.3 Activity Graph Provider

The Activity Graph Provider (ActivityGraphProvider) provides integration with the Activity Graph engine (the basis for the Activity Graph service), which provides recommendations about what a user may be interested in connecting with based on analytics within WebCenter. For example, the Activity Graph Provider method `recommendedUsers`, queries the Activity Graph engine for a list of users that a given user might want to connect with.

The Activity Graph engine provides a central repository for actions that are collected by enterprise applications. For more information about the Activity Graph service and the Activity Graph engine, see Section 46, "Integrating the Activity Graph."

The Activity Graph provider is built on two REST services for Activity Graph running on the WebCenter Portal server (`WC_Spaces`), and consequently requires that WebCenter Portal be installed in your environment. For more information about integrating the Activity Graph provider in your scenario, see Section 66.2.2.6.3, "Using the Activity Graph Provider." For information about creating and editing connection configuration for the Activity Graph provider, see "Configuring the Activity Graph Provider" in the *Administering Oracle WebCenter Portal*.

66.1.3.1.4 People Connections Locator

The People Connections locator is an IPropertyLocator used by the Property Provider to interface with People Connections. One of the benefits of People Connections is that it can access user profile information stored on WebCenter Portal. For more information about People Connections, see Section VI, "Working with People Connections." For more information about the People Connections locator, see Section 66.2.2.6.1, "Using the Property Service Provider." For information about creating and editing connection configuration for the People Connections locator, see "Configuring the Oracle People Connections Locator" in the *Administering Oracle WebCenter Portal*.

66.1.3.2 Writing Custom Data Providers

A *data provider* is a component that plugs into the Conductor architecture and acts as a delegate for some service. Data returned from a data provider can be used as-is (Java classes), or chained to be used as input to other data providers in the same scenario.

Data providers typically operate on the input context of a given user or an external application data set (or both). Personalization includes a Property Service that can provide typed data storage for user or application data, and is accessible as input to providers. For more information about creating your own data provider, see Chapter 67, "Implementing Custom Data Providers: Introduction."

66.1.3.3 Writing Custom Function Providers

Function providers also provide an extension point for the Conductor to create utility methods (for example, for data manipulation or transformation, or business rule calculation) that can be invoked using Expression Language (EL) expressions. A simple example might be: `${strings:concat('string1','string2')}`). For information on writing your own function providers, see Chapter 68, "Implementing Custom Function Providers: Introduction."

The CMIS and Activity Graph providers each have their own function provider to facilitate data transformations, among other utilities. For more information about Personalization ELs, see Appendix G.11, "ELs Related to Personalization."

66.2 Integrating Personalization in Your Application

This section describes how to integrate Personalization in your Portal Framework application.

This section contains the following subsections:

- Section 66.2.1, "Personalization Requirements"
- Section 66.2.2, "Authoring Personalized Scenarios in JDeveloper"
- Section 66.2.3, "Creating File-Based Scenarios"
- Section 66.2.4, "Displaying Targeted Content at Runtime"

66.2.1 Personalization Requirements

This section describes the design-time system requirements and dependencies for developing WebCenter Portal applications with JDeveloper that integrate Personalization services. For a complete list of requirements, dependencies, and options for Personalization, see "Personalization Prerequisites and Limitations" in the *Administering Oracle WebCenter Portal*.

- WebCenter Portal must be installed if the CMIS provider, Activity Graph provider, or People Connections locator are being used in a scenario. Note that for basic iterative development WebCenter Portal is not required to be installed on your domain.
- Before you can use REST APIs, you must take the steps outlined in "Before You Begin: Performing Required Configurations" in the *Administering Oracle WebCenter Portal*.
- Personalization relies on WebCenter Trust Services to provide single sign-on (SSO) between different managed servers within the WebCenter domain, including the Oracle WebCenter Content: Content Server that is accessed through the CMIS provider. For JDeveloper's integrated domain, the Trust Services must be configured using a WLST script (`configureWCPS.py`) located in the `DefaultDomain/scrpts-wcps` directory. For more information about configuring the WebCenter Trust Services and single sign-on using this script see "Configuring Single Sign-On" in the *Administering Oracle WebCenter Portal*.
- The REST service must be configured. For information about how to configure the REST service, see the chapter "Managing REST Services" in the *Administering Oracle WebCenter Portal*.

Note: Although you can optionally include the out-of-the-box providers for Activity Graph and People Connections in your application, you will not be able to test results in JDeveloper. Note also that these providers are only partially configured, and you must complete their configuration as described in the *Administering Oracle WebCenter Portal* in the sections on "Configuring the Oracle People Connections Service" and "Configuring the Activity Graph Service."

66.2.2 Authoring Personalized Scenarios in JDeveloper

This section describes how to author personalized scenarios using the Personalization tools in JDeveloper, and includes the following subsections:

- Section 66.2.2.1, "Creating a Properties Namespace File"
- Section 66.2.2.2, "Creating Property Sets and Property Definitions"
- Section 66.2.2.3, "Creating a New Scenario in the Scenario Editor"
- Section 66.2.2.4, "Specifying Scenario Flow Using Node Types"
- Section 66.2.2.5, "Defining Property Sets and Property Locators"
- Section 66.2.2.6, "Using the Out-of-the-Box Providers"

66.2.2.1 Creating a Properties Namespace File

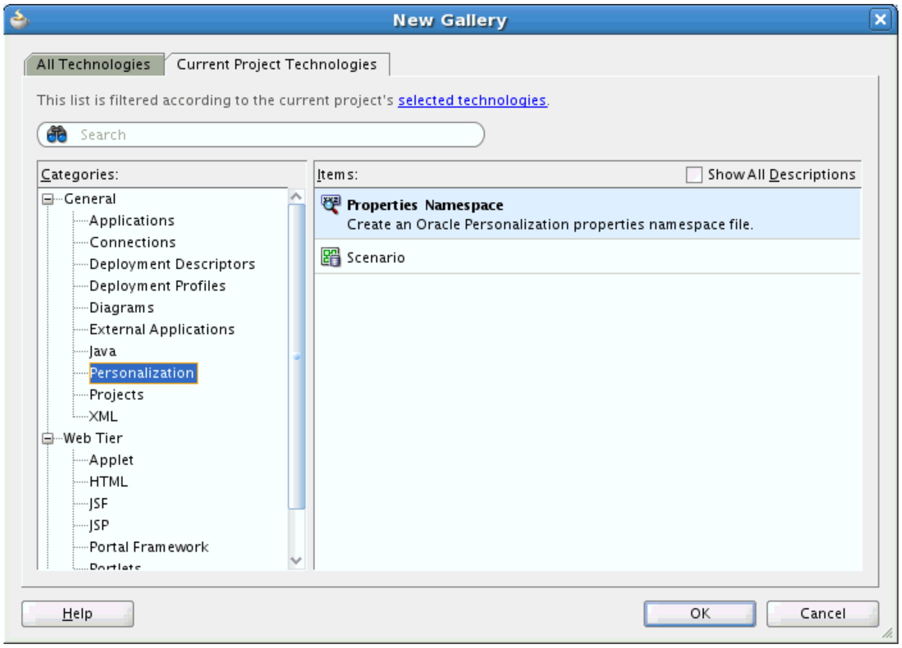
The first step in setting up a scenario is to create a Properties Namespace file. This file will store the settings for the namespace(s) in which your scenario will run, and typically a set of default property definitions. This file will also contain the property definitions and property set definitions you define later on in Section 66.2.2.2, "Creating Property Sets and Property Definitions."

To create a Properties Namespace file in JDeveloper:

1. With the application open in the Application Navigator, select **New** from the File menu.

   The New Gallery dialog displays (see Figure 66–2).

Figure 66–2 New Gallery Dialog



This list is filtered according to the current project's selected technologies.

Properties Namespace
Create an Oracle Personalization properties namespace file.

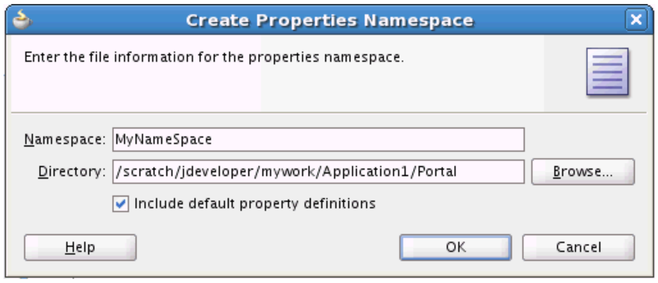
Note: If the Personalization category doesn't display, open the All Technologies tab and select it, or click **selected technologies** and add WebCenter Personalization to the project.

---

2. Choose **Properties Namespace** and click **OK**.

   The Create Namespace dialog displays (see Figure 66–3).

Figure 66–3 Create Namespace Dialog



Enter the file information for the properties namespace.

Namespace: MyNameSpace

Directory: /scratch/jdeveloper/mywork/Application1/Portal

☑ Include default property definitions

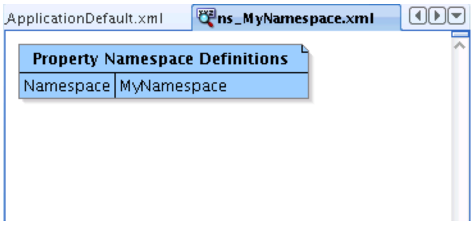
3. Enter a name for the namespace, select the **Include default property definitions** check box to add initial default property definitions to the namespace, and click **OK**.

   The **Include default property definitions** check box controls whether initial default property definitions are added to the namespace file. These are: `IntDef`, `NumberDef`, `StringDef`, `BooleanDef`, `DateTimeDef`, `ClobDef`, `IntArrayDef`, `NumberArrayDef`, `StringArrayDef`, `BooleanArrayDef`, `DateTimeArrayDef`, `ClobArrayDef`.

   The property definitions can be removed afterwards if they're not required. Or, you can leave the check box unselected to start with no initial property definitions and create them as needed in the Properties Editor.

A graphic representation of the namespace file displays in the Design pane (see Figure 66–4).

Figure 66–4 Design Pane - Namespace Definition



Property Namespace Definitions

Namespace	MyNamespace

4. Continue by defining the property sets and properties that you will need in your scenario as described in Section 66.2.2.2, "Creating Property Sets and Property Definitions."

66.2.2.2 Creating Property Sets and Property Definitions

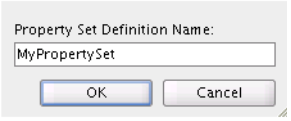
Properties are the bits of data about someone or something on which, for example, you can base evaluations of conditionals in your scenario's flow. A property, for example, could contain a person's age or gender. A property set is simply a collection or container of related properties.

To define a property set and associated properties:

1. From within your application in JDeveloper, right-click the namespace in the Design pane, select **Create New Property Set Definition**, and click **OK**.

   The Create New Property Set dialog displays (see Figure 66–5).

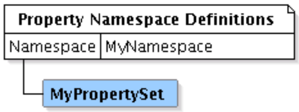
Figure 66–5 Create New Property Set Dialog


Property Set Definition Name: MyPropertySet

2. Enter a name for the property set and click **OK**.

   A node for the new property set displays in the Design pane (see Figure 66–6).

Figure 66–6 Design Pane - New Property Set Definition

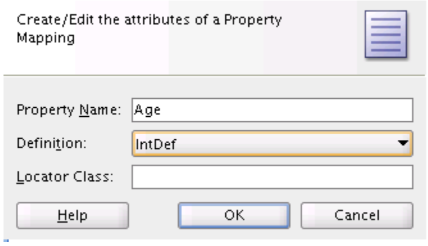

Property Namespace Definitions

Namespace	MyNamespace

3. To add properties to the new property set, right-click the property set, and select **Create New Property Definition Mapping**.

   The Create Property Mapping dialog displays (see Figure 66–7).

Figure 66–7 Create Property Mapping Dialog



Create/Edit the attributes of a Property Mapping

Property Name: Age

Definition: IntDef

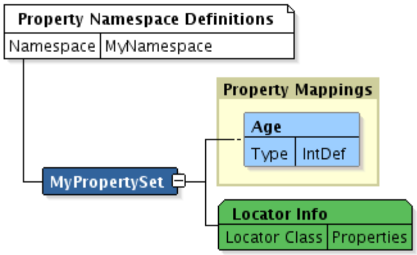
Locator Class:

4. Enter a **Property Name** and select a **Definition** (the value type), and click **OK**.

   To create a new property definition, select `New Definition` in the **Definition** drop down list.

   The new property appears as part of the property set's graphic representation (see Figure 66–8).

Figure 66–8 Design Pane - Property Definition



5. Add any additional properties required to the property set definition (or create new property sets) and then continue by creating the scenario as described in Section 66.2.2.3, "Creating a New Scenario in the Scenario Editor."

66.2.2.3 Creating a New Scenario in the Scenario Editor

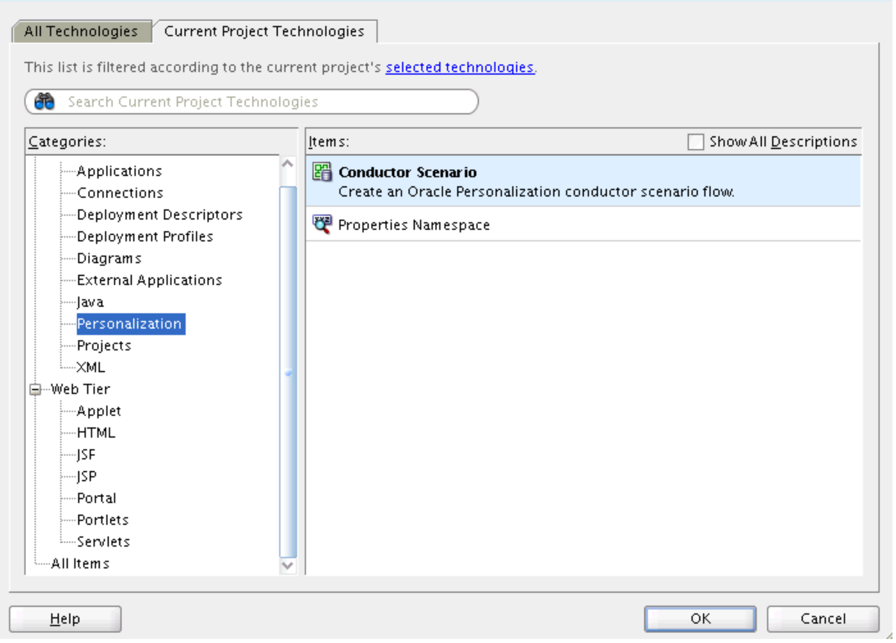
The Conductor's Scenario Editor provides a visual tool for viewing and editing scenario definitions managed by the Conductor. The Scenario Editor stores scenarios in both file and visual formats and is available from within JDeveloper. Before creating a scenario, you should have created a namespace and at least some of the property sets and properties you need for the scenario.

To create a new scenario using the Scenario Editor in JDeveloper:

1. From within your application in JDeveloper, right-click the application in the navigation bar and select **New**.

   The New Gallery dialog displays (see Figure 66–9).

Figure 66–9 New Gallery Dialog



All Technologies | Current Project Technologies

This list is filtered according to the current project's selected technologies.

Search Current Project Technologies

Categories:

- Applications
- Connections
- Deployment Descriptors
- Deployment Profiles
- Diagrams
- External Applications
- Java
- Personalization
- Projects
- XML
- Web Tier
  - Applet
  - HTML
  - JSF
  - JSP
  - Portal
  - Portlets
  - Servlets
- All Items

Items: □ Show All Descriptions

Conductor Scenario
Create an Oracle Personalization conductor scenario flow.

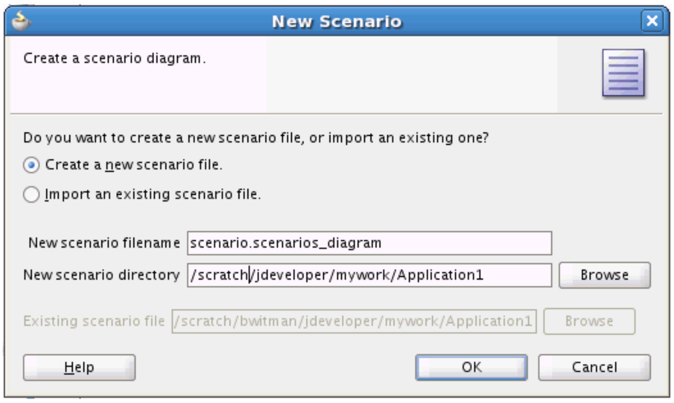
Properties Namespace

> **Note:** If the Personalization category doesn't display, open the All Technologies tab and select it, or click **selected technologies** and add the Personalization technology to the project.

2. Select **Scenario** and click **OK**.

   The New Scenario Wizard dialog displays (see Figure 66–10).

Figure 66–10 New Scenario Wizard Dialog



New Scenario

Create a scenario diagram.

Do you want to create a new scenario file, or import an existing one?

● Create a new scenario file.

○ Import an existing scenario file.

New scenario filename: scenario.scenarios_diagram

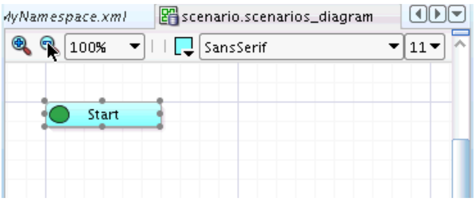
New scenario directory: /scratch/jdeveloper/mywork/Application1

Existing scenario file: /scratch/bwitman/jdeveloper/mywork/Application1

3. Select **Create a new scenario file** and modify the file name and where the file is stored if necessary. Note that the scenario name's extension (`.scenarios_diagram`) cannot be changed.

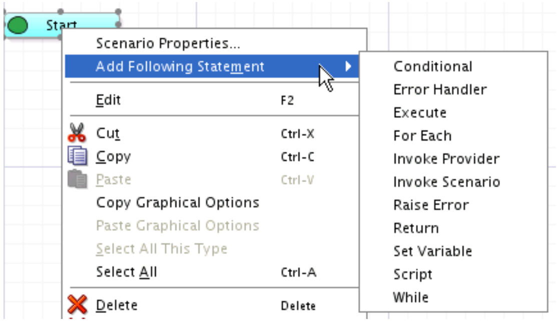
   The Scenario Editor displays with a new Start node (see Figure 66–11).

Figure 66–11 Scenario Editor - Start Node



4. To add nodes to the scenario, right-click the node to which you want to add a new node, select **Add Following Statement**, and chose the node type from the list as shown in Figure 66–12.

Figure 66–12 Adding a Node in the Scenario Editor



Right-click the new node to expose options for setting node properties and extending the flow. For a description of available node types, see Section 66.2.2.4, "Specifying Scenario Flow Using Node Types."

66.2.2.4 Specifying Scenario Flow Using Node Types

The Scenario Editor uses a tree-structured fixed layout where the flow is represented by a combination of subtrees (for decisions) and internal label references to represent flow for loops and complex nested if/else decisions.

Node Types

- **Start:** The Start node is a root level node that defines where a scenario begins.
- **Return:** The Return node halts execution of the scenario, and returns the specified results of evaluation of an EL expression to the caller.
- Set **Variable:** The Set Variable node lets you define a variable that is scoped within the context of the currently running scenario and initialize it with an expression.
- **Script:** Use the Script node to add a script, including ones that use embedded EL expressions, to your scenario. A script engine can be specified by either the mime type or engine name.
- **Execute:** The Execute node invokes a specified EL expression with no expected return value. Similar to Variable Assignment, only the results of the expression are not stored within the Scenario context.
- **Error Handler:** The Error Handler node provides a Java-like Catch/Try construct where you can use the Try node to test a condition and execute a response depending on the results.

- **Conditional:** The Conditional node evaluates an EL expression and executes the contained statements if the EL expression evaluate to true. Statements within the Otherwise block will only execute if all condition statements evaluate to false.
- **For Each:** The For Each node provides looping/iterative functionality over a collection of things.
- **While:** Provides looping/iterating functionality as long as a specified EL expression evaluates to true.
- **Raise Error:** Raise and throw an error with the specified error message
- **Invoke Provider:** Invokes a named implementation of IDataProvider. Results are stored within the context of the currently running Scenario.
- **Invoke Scenario:** Invokes another named Scenario within the same namespace. Results are stored within the context of the currently running Scenario

66.2.2.5 Defining Property Sets and Property Locators

The Property Editor lets you view and edit the property set definitions and their associated property definitions managed by the Property Service. The Property Editor communicates and persists data through the Property Service.

Property sets and properties within a property set can be stored in many different locations and formats, so a locator facility is needed to retrieve them. A default property set locator is provided that retrieves and stores property set data to a pre-configured database. This default locator is used when no other is specified for the property set.

A custom locator for the People Connections service is also provided out-of-the-box (for more information, see Section 66.1.3.1.4, "People Connections Locator"), but you may want to define additional locators for other data sources. You can define multiple locators for properties and property sets, and they can also be defined in order of precedence. For step-by-step instructions for how to implement a locator see Chapter 70.7, "Implementing a Custom Locator." Note that although multiple locators can be associated with a property set definition, only a single property in that property set definition can be assigned to one of the locators.

66.2.2.6 Using the Out-of-the-Box Providers

Personalization provides three providers out-of-the-box providers for use within scenarios: the Property Service Provider, the Content Server Provider (CMIS), and Activity Graph. This section describes how you can integrate these providers in your application in the following subsections:

- Section 66.2.2.6.1, "Using the Property Service Provider"
- Section 66.2.2.6.2, "Using the CMIS Provider"
- Section 66.2.2.6.3, "Using the Activity Graph Provider"

66.2.2.6.1 Using the Property Service Provider

The Property Service Provider (`oracle.PropertiesServiceProvider`) allows integration with the Personalization Server Property Service. This provider lets you to retrieve property sets for a particular property set definition, retrieve a property set by name, or return a specific property from a property set. If you are using the People Connections locator to integrate profile data into your scenario, then you must configure the Property Service before using it. For more information about the People Connections locator, see Section 66.1.3.1.4, "People Connections Locator." For information about configuring the Property Service provider, see "Configuring the Oracle People Connections Locator" in the *Administering Oracle WebCenter Portal*.

66.2.2.6.2 Using the CMIS Provider

The CMIS provider (`CMISProvider`) provides services to search for and retrieve content from standards-based CMIS (Content Management Interoperability Services) content servers. For WebCenter, this is specifically provided by the Oracle WebCenter Content: Content Server. The CMIS provider also has a utility function provider (`CMISFunctionProvider`) to convert results to simplified form. Before trying the examples below, be sure to configure your CMIS provider connection as shown in the section on "Configuring the CMIS Provider" in the Administering Oracle WebCenter Portal.

Example CMIS Provider Scenario

Create a scenario using the following (remember to set the `content-type` of `application/xml`):

Request URI:

```
POST http://localhost:8891/wcps/api/conductor/namespaces/myNameSpace/scenarios
```

Request Body:

```
<scenarioMetadata>
<scenario xmlns:common="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"
xmlns:scenario="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <body>
    <call-provider>
      <provider-name>CMISProvider</provider-name>
      <connection-name>CmisConfigConnection</connection-name>
      <variable>exprString</variable>
      <input>
        <parameter>
            <common:name>search</common:name>
            <common:value>SELECT * FROM cmis:document WHERE cmis:name LIKE
'flowers'</common:value>
        </parameter>
      </input>
    </call-provider>
    <return>
      <expression>${exprString}</expression>
    </return>
  </body>
  <name>CMIS Scenario</name>
  <comments>CMIS Scenario comments</comments>
  <tags>
    <tag>CMIS Scenario tag</tag>
  </tags>
</scenario>
</scenarioMetadata>
```

Executing the Scenario

Request URI:

```
POST
http://localhost:8891/wcps/api/conductor/namespaces/myNameSpace/scenarios/CMIS%20S
cenario
```

Request Body:

```
<parameters/>
```

Using the CMISFunctionProvider

A function provider is a utility class that can be invoked from within a scenario. The `CMISFunctionProvider` supports several methods (see the JavaDoc for the class for more information). Here are two example methods:

```
/**
     * Convert the array of input IDs to a CMIS query in the form of 'IN'
     * @param ids Array of document IDs, in the form of dDocName only
     * @return CMIS query String
     */
public static String getCMISQueryForDocIDs(

@PublicParameter(parameterName="repository",descriptionBundleKey="getCMISQueryForD
ocIDs.parameter.description.inputList") String repository,

@PublicParameter(parameterName="ids",descriptionBundleKey="getCMISQueryForDocIDs.p
arameter.description.inputList") List<String> ids))
...


/**
     * Convert the array of input IDs to a CMIS query in the form of 'IN'
     * @param ids, in the form of a WebCenter document ObjectURN.  For example:
stanl18-ucm11g#dDocName:MOUNTAINS
     * @return CMIS query String
     */
 public static String
    getCMISQueryForDocIDsFromFullID(@PublicParameter(parameterName="ids",

descriptionBundleKey="getCMISQueryForDocIDs.parameter.description.inputList")
List<String> ids)
```

Using the CMISFunctionProvider in a Scenario

The following scenario snippet shows how data might be fed into the `CMISFunctionProvider` to create a CMIS query for multiple nodes, where the query is then sent to the CMIS provider. (In a more realistic case, rather than generate the data, we could have passed the results from an Activity Graph provider call, for example.)

```
<scenario:scenario
xmlns:common="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"

xmlns:scenario="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <comments>testFunctionProviderScenario4 comments</comments>
  <body>
   <assign-variable>
      <variable>ids</variable>
      <expression>${collections:new()}</expression>
    </assign-variable>
    <execute>

<expression>${collections:append(ids,'StellentRepository#dDocName:MOUNTAINS')}</ex
pression>
    </execute>
    <execute>

<expression>${collections:append(ids,'StellentRepository#dDocName:PARKS')}</expres
sion>
```

```
    </execute>
    <execute>

<expression>${collections:append(ids,'StellentRepository#dDocName:PATAGONIAPARKS')
}</expression>
    </execute>

    <!-- Assign those as IDs to send to CMIS -->
    <assign-variable>
        <variable>cmisQuery</variable>

<expression>${cmisfunction:getCMISQueryForDocIDsFromFullID(ids)}</expression>
    </assign-variable>

    <!-- Make the call to CMIS -->
    <call-provider>
      <provider-name>CMISProvider</provider-name>
      <connection-name>NonProxyConnection</connection-name>
      <variable>cmisResults</variable>
      <input>
        <parameter>
            <common:name>search</common:name>
            <common:value>${cmisQuery}</common:value>
        </parameter>
      </input>
    </call-provider>
    <return>
      <expression>${cmisResults}</expression>
    </return>
  </body>
  <name>testFunctionProviderScenario4</name>

</scenario:scenario>
```

66.2.2.6.3 Using the Activity Graph Provider

The Activity Graph Provider (`ActivityGraphProvider`) provides integration with the Activity Graph service, which provides recommendations based on analytics within WebCenter. Before attempting the examples below, be sure to configure the connection for the Activity Graph service as shown in the section on "Configuring the Activity Graph Provider" in the *Administering Oracle WebCenter Portal*.

Example Activity Graph Provider Scenario

Create a scenario using the following (remember to set the `content-type` of `application/xml`):

Request URI:

```
POST http://localhost:8891/wcps/api/conductor/namespaces/default/scenarios
```

Request Body:

```
<scenarioMetadata>
<scenario xmlns:common="http://xmlns.oracle.com/wcps/conductor/common/1.0.0">
    <body>
        <call-provider>
            <provider-name>ActivityGraphProvider</provider-name>
            <connection-name>ActivityGraphConfigConnection</connection-name>
            <resource-name>QueryCommonItems</resource-name>
            <method-name>queryCommonItems</method-name>
            <variable>providerResults</variable>
```

```
                <input>
                    <parameter>
                        <common:name>sourceClassURN</common:name>
                        <common:value>WC.user</common:value>
                    </parameter>
                    <parameter>
                        <common:name>sourceObjectURN</common:name>
                        <common:value>carl</common:value>
                    </parameter>
                    <parameter>
                        <common:name>targetClassURN</common:name>
                        <common:value>WC.user</common:value>
                    </parameter>
                    <parameter>
                        <common:name>targetObjectURN</common:name>
                        <common:value>monty</common:value>
                    </parameter>
                    <parameter>
                        <common:name>similarityURN</common:name>
                        <common:value>user-edit</common:value>
                    </parameter>
                </input>
            </call-provider>
            <return>
                <expression>${providerResults}</expression>
            </return>
        </body>
        <name>QueryCommonItemsScenario</name>
        <comments>QueryCommonItemsScenario comments</comments>
        <tags>
            <tag>invoke</tag>
            <tag>sample</tag>
            <tag>provider</tag>
            <tag>resource</tag>
            <tag>input</tag>
            <tag>parameters</tag>
            <tag>overloaded</tag>
        </tags>
    </scenario>
    </scenarioMetadata>
```

Executing the Scenario

Before continuing, you must set the header values: `Accept=application/xml` and `content-type=application/xml`.

Request URI:

```
POST
http://localhost:8891/wcps/api/conductor/namespaces/default/scenarios/QueryCommonI
temsScenario
```

Request Body:

```
<parameters/>
```

Using the AGFunctionProvider

A function provider is a utility class that can be invoked from within a scenario. An example using the `AGFunctionProvider` is shown below:

```
/**
```

```
     * Return the value of 'ObjectURN', only for WC.document, from the input
Object.
     * @param agResults From call to 'QueryRecommendations' or QueryItems.  Can be
one of the following Classes:
     *
     * From AG REST 'recommendations'
     * <ul>
     *   <li> Recommendations
     *   <li> RecommendedItems
     *   <li> List<Recommendation>
     * </ul>
     *
     * From AG REST 'items'   (common items)
     * <ul>
     *   <li> Results
     *   <li> Items
     *   <li> List<Item>
     * </ul>
     *
     * @param dDocNameOnly  If true, just the last part of the ObjectURN for
     * document will be returned; otherwise, the entire ObjectURN will be.
     * For example, if ObjectURN is example-ucm11g#dDocName:EXAMPLEACL000116,
     * if this value is 'true', then only EXAMPLEACL000116 will be returned.
     * Otherwise, all of stanl18-ucm11g#dDocName:EXAMPLEACL000116 is returned.
     *
     * @return a List of ObjectURN representing the document ID
     */
    @PublicFunction

    public static List<String> getDocumentIDs(
@PublicParameter(parameterName="agResults",descriptionBundleKey="getContentIDs.par
ameter.description.inputList")Object agResults,
 @PublicParameter(parameterName="dDocNameOnly",
descriptionBundleKey="getContentIDs.parameter.description.inputList")boolean
dDocNameOnly)
    {
...

/**
     * Return the value of 'ObjectURN' for the 'ClassURN' from the input Object.
     * @param agResults From call to 'QueryRecommendations' or QueryItems.  Can be
one of the following Classes:
     *
     * From AG REST 'recommendations'
     * <ul>
     *   <li> Recommendations
     *   <li> RecommendedItems
     *   <li> List<Recommendation>
     * </ul>
     *
     * From AG REST 'items'   (common items)
     * <ul>
     *   <li> Results
     *   <li> Items
     *   <li> List<Item>
     * </ul>
     *
     * param filterClassURN return content only of this type.  Examples are:
WC.wiki-page, WC.group-space, WC.user, WC.blog,
     * WC.topic, WC.document.  If this is null, return all types.
     *
     * @return a List of ObjectURN representing the item identifier.
     */
    @PublicFunction
            (
                    functionName="getContentIDs",
                    descriptionBundleKey="getContentIDs.method.description"
            )
    public static List<String>
getContentIDs(@PublicParameter(parameterName="agResults",

descriptionBundleKey="getContentIDs.parameter.description.inputList")Object
agResults,

@PublicParameter(parameterName="filterClassURN",

descriptionBundleKey="getContentIDs.parameter.description.filterClassURN") String
filterClassURN)
    ...

/**
     * Filter recommendations by score.  Only those recommendations with a score
>= the cutoff will be preserved.
     */
    @PublicFunction
            (
                    functionName="filterRecsByScore",
                    descriptionBundleKey="filterRecsByScore.method.description"
            )
    public static Recommendations filterRecsByScore(
            @PublicParameter(parameterName="recommendations",
            descriptionBundleKey="filterRecsByScore.parameter.description.agRecs")
Recommendations recs,
            @PublicParameter(parameterName="cutoffScore",

descriptionBundleKey="filterRecsByScore.parameter.description.cutoffScore") float
cutoffScore
            )
    {
```

Using the AGFunctionProvider in a Scenario

In the following scenario, a call is first made to the Activity Graph REST service. The results of that call are in the `agRecommendations` variable. The next call in the scenario is to the `AGFunctionProvider.getContentIDs()` method, passing in the results of the `agRecommendations` (an Activity Graph object), and returning a `List<String>` of document IDs, held in the evaluation of the `expressions` call.

```
<expression>${agfunction:getContentIDs(agRecommendations,'WC.user')}</expression>

 <scenario:scenario
xmlns:common="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"

xmlns:scenario="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
    <comments>CallProviderScenario comments</comments>
    <body>
        <call-provider>
            <provider-name>ActivityGraphProvider</provider-name>
            <connection-name>AgTestServerConnection</connection-name>
            <resource-name>QueryRecommendations</resource-name>
            <method-name>getRecommendationsUsingDefaultRecipe</method-name>
```

```
                <variable>agRecommendations</variable>
                <input>
                    <parameter>
                        <common:name>classURN</common:name>
                        <common:value>WC.user</common:value>
                    </parameter>
                    <parameter>
                        <common:name>objectURN</common:name>
                        <common:value>carl</common:value>
                    </parameter>
                </input>
            </call-provider>

              <!-- Now call function provider to translate into user IDs.  A more
specific call is available for WC.document; this just tests
        the ability of the function provider to handle different types of content
-->
            <return>

<expression>${agfunction:getContentIDs(agRecommendations,'WC.user')}</expression>
            </return>
        </body>
        <name>CallProviderScenario</name>
</scenario:scenario>
```

66.2.3 Creating File-Based Scenarios

As well as using the Scenario Editor, you can also create file-based scenarios in XML format. Note that file-based scenarios are only supported through the Conductor's import/export function and JDeveloper MDS integration. To import a file-based scenario into the Scenario Editor, select the **Import an existing scenario file** option when you create the scenario.

Table 66–1 shows the statements that make up the contents of a scenario file. For more detailed information about the statements, refer to the node descriptions in Section 66.2.2.4, "Specifying Scenario Flow Using Node Types."

Table 66–1 Scenario Statements

Statement	Description	Example

Set Variable	Creates a variable that is scoped within the context of the currently running scenario.	`<assign-variable>`
		`     <variable>index</variable>`
		`    <expression>3</expression>`
		`</assign-variable>`

Execute	Invokes a specified EL Expression with no expected return value. Similar to Variable Assignment, only results of the expression are not stored within the Scenario Context.	`<execute>`
		`   <comments>Adds to an existing collection.</comments>`
		
		`<expression>${collections:append(responses, 'The outlook is not so good.')}</expression>`
		`</execute>`

Table 66–1 (Cont.) Scenario Statements

Statement	Description	Example

Conditional	Evaluates an EL expression and executes the contained statements should the EL expression evaluate to true. Statements within the otherwise block will only execute if all condition statements evaluate to false.	<conditions>
		      <body>
		        <condition>
		          <body>
		            <assign-variable>
		
		<variable>customerType</variable>
		              <expression>Great
		Customer</expression>
		            </assign-variable>
		          </body>
		
		<expression>${customer.totalMoneySpent >=
		100000}</expression>
		        </condition>
		        <otherwise>
		          <body>
		            <assign-variable>
		
		<variable>customerType</variable>
		              <expression>Good
		Customer</expression>
		            </assign-variable>
		          </body>
		        </otherwise>
		      </body>
		</conditions>

Error Handler	Allows you to add a try/catch block to a scenario.	<body>
		        <error-handler id="_1">
		            <try id="_2">
		                <body/>
		            </try>
		            <catch id="_3">
		                <body/>
		
		<variable>exception</variable>
		            </catch>
		        </error-handler>
		    </body>

For Each	Provides looping/iterating functionality over a collection of things.	<for-each>
		      <body>
		         <execute>
		           <comments>
		               Let's send each great customer
		an email, thanking them for their loyalty.
		           </comments>
		           <expression>
		
		${emailService:sendMail(customer,'Subject:Tha
		nks for being a great customer')}
		           </expression>
		         </execute>
		      </body>
		      <variable>customer</variable>
		      <max-iterations>10</max-iterations>
		      <items>${greatCustomers}</items>
		</for-each>

Table 66–1 (Cont.) Scenario Statements

Statement	Description	Example

Script	Allows you to run a script in the scenario. The script can be written in JavaScript, Groovy, JRuby, or Python.	`<body>`
		`        <script type="text/javascript"`
		`resolveAsExpression="true" id="_5">`
		`            <variable>hello</variable>`
		`            <source>y=5;`
		`                    z=2;`
		`                    x=y+z;`
		`                    hello=x;`
		`            </source>`
		`        </script>`
		`        <return id="_6">`
		`            <expression>${hello}</expression>`
		`        </return>`
		`    </body>`

While	Provides looping/iterating functionality as long as the specified EL expression evaluates to true.	`<while>`
		`      <body>`
		`        <assign-variable>`
		`          <comments>Sum up customer invoices`
		`to arrive at customer total`
		`expenditure.</comments>`
		
		`<variable>customerTotalSpent</variable>`
		
		`<expression>${customerTotalSpent+order.invoic`
		`eTotal}</expression>`
		`        </assign-variable>`
		`      </body>`
		`      <expression>${customer.id =`
		`currentCustomerId }</expression>`
		`      <max-iterations>-1</max-iterations>`
		`</while>`

Invoke Scenario	Invokes another named scenario within the same namespace. Results are stored within the context of the currently running scenario.	`<call-scenario >`
		`    <variable>greeting</variable>`
		
		`<scenario>randomGreetingGenerator</scenario>`
		`    <input>`
		`        <parameter>`
		`          <ns2:name>greetingsList</ns2:name>`
		`          <ns2:value>hello, Bonjour, Buenos`
		`días</ns2:value>`
		`        </parameter>`
		`    </input>`
		`</call-scenario>`

Invoke Provider	Invokes a named implementation of IDataProvider. Results are stored within the context of the currently running scenario	`<call-provider>`
		`      <provider-name>CRM_`
		`Provider</provider-name>`
		`      <connection-name>crm_`
		`db</connection-name>`
		
		`<resource-name>getGreatCustomers</resource-na`
		`me>`
		`      <variable>greatCustomers</variable>`
		`      <input>`
		`          <parameter>`
		
		`<ns2:name>minMoneySpent</ns2:name>`
		`              <ns2:value>100000</ns2:value>`
		`          </parameter>`
		`      </input>`
		`</call-provider>`

Table 66–1 (Cont.) Scenario Statements

Statement	Description	Example

Return	Returns the specified results of evaluation of an EL Expression.	`<return>`
		`    <comments>Return the sales rep who`
		` sold the most widgets this month.</comments>`
		
		`<expression>${bestSalesRep.id}</expression>`
		`</return>`

Raise Error	Raise and throw an error with the specified error message	`<raise-error>`
		`      <comments>User is unathorized,`
		` so let's return a 401.</comments>`
		`      <statusCode>401</statusCode>`
		`      <message>User`
		`${ScenarioContext.scenarioRequest.user`
		`Principal.name} is unauthorized to`
		` execute this scenario.</message>`
		`</raise-error>`

Script	Add a script, including ones that use embedded EL expressions	

Example 66–1 Example File-based Scenario

```
<scenario:scenario
xmlns:common="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"

xmlns:scenario="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <comments>sampleScenarioWithIf comments</comments>
  <body>
    <assign-variable>
      <variable>index</variable>
      <expression>3</expression>
    </assign-variable>
    <conditions>
      <body>
        <condition>
          <body>
            <assign-variable>
              <variable>ResultVar</variable>
              <expression>conditionSatisfied</expression>
            </assign-variable>
          </body>
          <expression>${index == 3}</expression>
        </condition>
        <otherwise>
          <body>
            <assign-variable>
              <variable>ResultVar</variable>
              <expression>otherwiseInvoked</expression>
            </assign-variable>
          </body>
        </otherwise>
      </body>
    </conditions>
    <return>
      <expression>${ResultVar}</expression>
    </return>
  </body>
  <name>sampleScenarioWithIf</name>
  <tags>
    <tag>if</tag>
    <tag>condition</tag>
    <tag>otherwise</tag>
  </tags>
</scenario:scenario>
```

66.2.4 Displaying Targeted Content at Runtime

Targeted content can be displayed to the user at runtime using Content Presenter. Content Presenter is tightly integrated with the Conductor's dynamic content query generation and enables simple surfacing of dynamic content. For more information about using Content Presenter in your application, see Chapter 27, "Creating Content Presenter Display Templates."

66.3 Deploying Personalization Files

This section explains how to build and deploy Oracle WebCenter Portal Personalization (WCPS) files.

> **Note:** For information on integrating and configuring Personalization, see "Personalization Prerequisites and Limitations" in the *Administering Oracle WebCenter Portal*.

- Section 66.3.1, "Deploying Personalization Files to a Server"
- Section 66.3.2, "Deploying Personalization Files to an Archive File"
- Section 66.3.3, "Importing and Exporting MAR Files"
- Section 66.3.4, "Propagating Personalization Files"

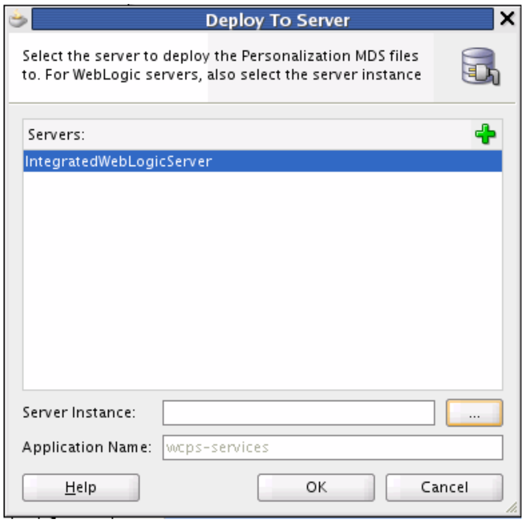
66.3.1 Deploying Personalization Files to a Server

To deploy Personalization files to a server:

> **Note:** The deployment feature described in this section requires the WebCenter Personalization technology scope. If this scope is not added, the related menu items will be disabled. See Section 66.2, "Integrating Personalization in Your Application."

1. In JDeveloper, open your portal project. If you want to use WLST commands to perform this deployment, see Section 66.3.3, "Importing and Exporting MAR Files."
2. From the Application menu, select **Deploy Personalization Files** and then select **To Server.**
3. In the Deploy to Server dialog, select the server to which you want to deploy the service. See Figure 66–13.

Figure 66–13 The Deploy To Server Dialog



Deploy To Server

Select the server to deploy the Personalization MDS files to. For WebLogic servers, also select the server instance

Servers: IntegratedWebLogicServer

Server Instance:

Application Name: wcps-services

Note: Optionally, click the **Add** button to add a server to the list.

4. Click the ellipsis ("**...**") button to select a specific server instance. For example, the running DefaultServer.
5. Click **OK** when you are finished.
6. Check the Message - Log window for details on the deployment. The log will indicate if the deployment of the metadata files was completed successfully.

66.3.2 Deploying Personalization Files to an Archive File

You can deploy your Personalization files to a metadata archive (MAR) file on the file system. To deploy to a MAR file:

1. In JDeveloper, open your portal project.
2. From the Application menu, select **Deploy Personalization Files** and then select **To Filesystem.**
3. In the Deploy to Filesystem dialog, select **Create Metadata Archive** and specify a location and name for the MAR file.

The MAR file can then be updated to the server using command line utilities described in Section 66.3.3, "Importing and Exporting MAR Files."

66.3.3 Importing and Exporting MAR Files

To update a Personalization server with new files from a Metadata Archive (MAR) file, use the following WLST commands to connect to the server and import the metadata.

```
wlst:> connect('<username>', '<password>', 't3://admin-server-hostname:7001')
wlst:> importMetadata(application='wcps-services', server='WC_Utilities',
fromLocation='<mar file>', remote='true')
```

To export the Personalization files from the server into a MAR file on the filesystem, use these WLST commands to connect to the server and export the metadata:

```
wlst:> connect('<username>', '<password>', 't3://admin-server-hostname:7001')
```

```
wlst:> exportMetadata(application='wcps-services', server='WC_Utilities',
toLocation='<mar file>', remote='true')
```

For more information on MDS WLST commands, refer to the *WebLogic Scripting Tool Command Reference* on the Oracle Technology Network.

If you're running on the IntegratedWebLogicServer in a development environment, the connect URL is `t3://localhost:7101` and the server is `DefaultServer`.

66.3.4 Propagating Personalization Files

The WebCenter Portal Administration Console includes a propagation tool for moving portal metadata from a staging to a production server without incurring any downtime. The propagation tool supports moving Oracle WebCenter Portal Personalization files from staging to production. The propagation tool automatically exports metadata from the application's MDS repository on the source server, then imports the metadata to the application's MDS repository on the target server. For more information about the propagation tool, see Section 8.13, "Using the Propagation Tool to Propagate From Staging to Production."

The ability for the propagation tool to move Personalization files depends on the following conditions:

- The Portal Framework application's MDS repository must point to the same database as the `mds-wcpsDS` data source. This is the default configuration. In general, propagation will work correctly if you do not change the default database configuration.
- On both the source and destination servers, the application's MDS store must use the same partition name as the MDS store for `wcps-services`. In a standard portal configuration, this partition is `webcenter-portal`.

> **Note:** Typically, there is a one to two minute delay between when the propagation tool is initialized and when the Personalization REST services are notified of the MDS changes. This delay does not occur when you use the WLST commands to propagate Personalization files, as explained in Section 66.3.3, "Importing and Exporting MAR Files."

66.4 Tutorial: Creating, Testing and Deploying a Simple Application

This section describes how to create a simple application in JDeveloper containing a scenario that returns a simple string (`"Hello World"`). You'll then test the results of that scenario by adding it to a JSP page and running the application in the integrated WebLogic server to display the results in a browser.

This section also covers the steps to configure and start the integrated WebLogic server, define a connection to the Personalization Server Conductor, and how to deploy the scenario and JSP artifacts to the server domain for testing.

> **Note:** as a prerequisite to this tutorial, you should already have installed WebCenter Portal's extension for Oracle JDeveloper (`oracle.webcenter.framework_bundle.zip`). If you have not already added this extension, use the Update Wizard in JDeveloper to check for updates by clicking **Check for Updates** from the **Help** menu.

1. Create a simple WebCenter Portal application (`Hello_Applicaton`) using the default options and technologies.

   a. From the File menu select **New...**

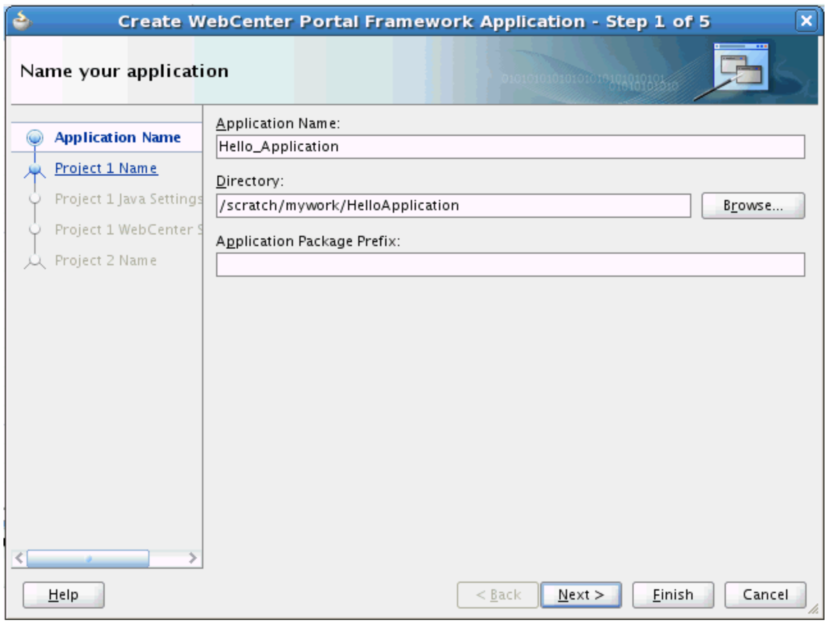
      The New Gallery appears.

   b. Select the **Applications** category.

   c. Select **WebCenter Portal Framework Application** from the Items list and click **OK**. The Create WebCenter Portal Framework Application wizard appears.

   d. Enter the **Application Name** as `Hello_Application`, as shown in Figure 66–14.

Figure 66–14 Creating the Hello_Application - Step 1



Create WebCenter Portal Framework Application - Step 1 of 5

Name your application

Application Name: Hello_Application

Directory: /scratch/mywork/HelloApplication

Application Package Prefix:

   e. In the Project 1 Name page of the wizard (Step 2), select **WebCenter Personalization** in the Available list and move it to the Selected list.

   f. Click **Next** until you reach Step 5 and click **Finish**.

2. Configure JDeveloper's integrated server's (integrated WLS) default domain.

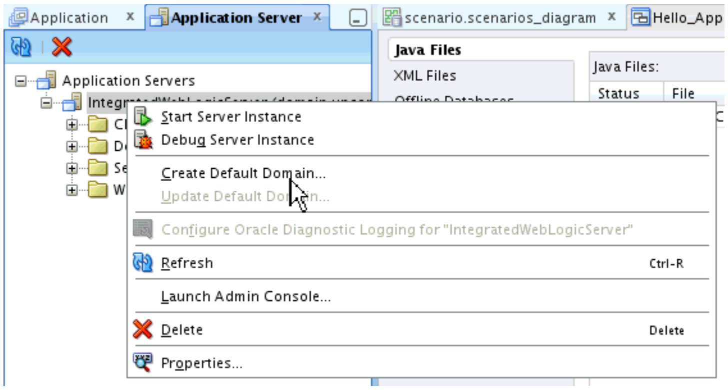
   The domain will automatically be extended to include necessary server artifacts required for running the Personalization components (i.e., the Personalization Conductor and the Property Service).

   a. From the View menu, select `Application Server Navigator` and expand the `Application Servers` tree node to display the `IntegratedWeblogicServer`.

      The current status should be `(domain unconfigured)`.

   b. Right-click `IntegratedWeblogicServer` to display the context menu and select `Create Default Domain...`

Figure 66–15 Application Server Navigator - Creating the Default Domain



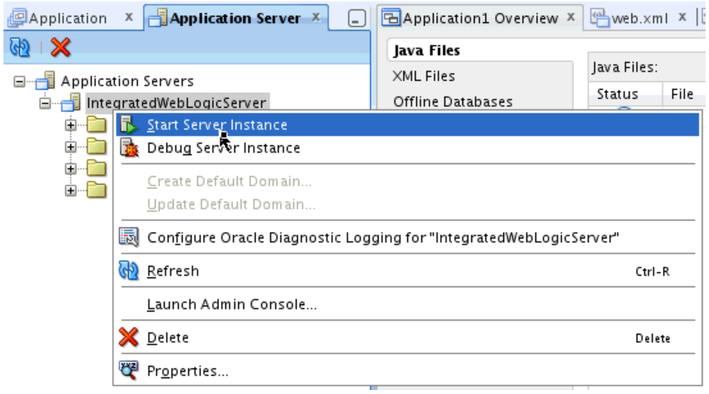
c. When prompted, enter `welcome1` as the Administrator password and click **OK**.

   The status displays `(domain building)` and the Message Log window displays the output as the domain is being built. Wait for the domain to finish building. This may take some time to complete. When complete, the message log should display `"Integrated Weblogic domain processing completed successfully."`

d. Start the server by right-clicking `IntegratedWeblogicServer` to display the context menu, and selecting **Start Server Instance**. See Figure 66–16.

   The `Running: IntegratedWeblogicServer - Log` view should appear and display output as the server is starting. Wait for the server to finish starting. This may take some time to complete. When complete, the IntegratedWeblogicServer Message Log should display `IntegratedWebLogicServer started`.

Figure 66–16 Application Server Navigator - Starting the Server



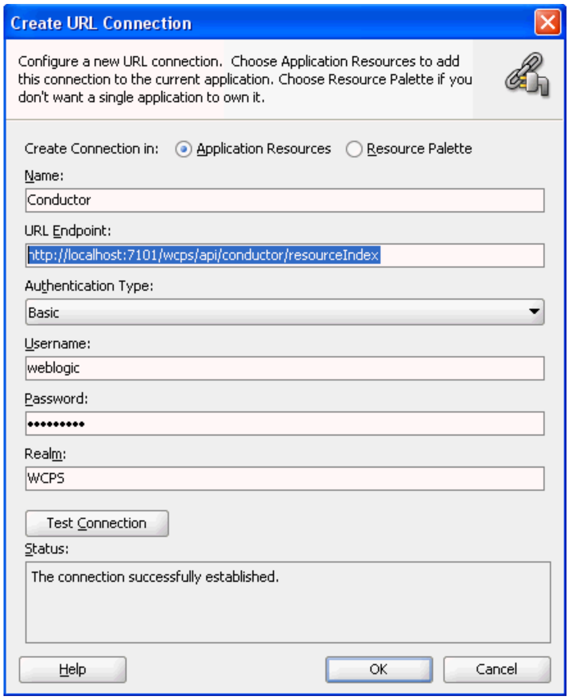
3. Configure an application URL connection to the Personalization Conductor component of the application server.

   a. From the Application menu select **Application Properties**. The Application Properties dialog displays.

   b. Select the **Personalization Server** category, and from the URL Connection: drop-down list and select **< New URL Connection... >**.

      The Create URL Connection dialog displays (see Figure 66–17).

Figure 66–17 Create URL Connection Dialog - Conductor URL Connection



Configure a new URL connection. Choose Application Resources to add this connection to the current application. Choose Resource Palette if you don't want a single application to own it.

Create Connection in: ● Application Resources ○ Resource Palette

Name: Conductor

URL Endpoint: http://localhost:7101/wcps/api/conductor/resourceIndex

Authentication Type: Basic

Username: weblogic

Password: •••••••••

Realm: WCPS

Status: The connection successfully established.

c. Enter the (default) data entry fields as shown below to create the connection.

Field Name	Value
Name	Conductor
URL Endpoint	http://localhost:7101/wcps/api/conductor/resourceIndex
Authentication Type	Basic
Username	weblogic
Password	welcome1 (the Administrator password you provided when you created the domain)
Realm	WCPS

d. Click **Test Connection**.

The Status should display as `"The connection successfully established."`

e. Click **OK** to create the Conductor URL connection.

f. On the Personalization Server page, click **OK**.

4. Create a simple `hello_world` scenario that returns the string `"Hello World"` when invoked by the Personalization server.

a. Right-click the `Portal` project in the Application Navigator and select **New**.

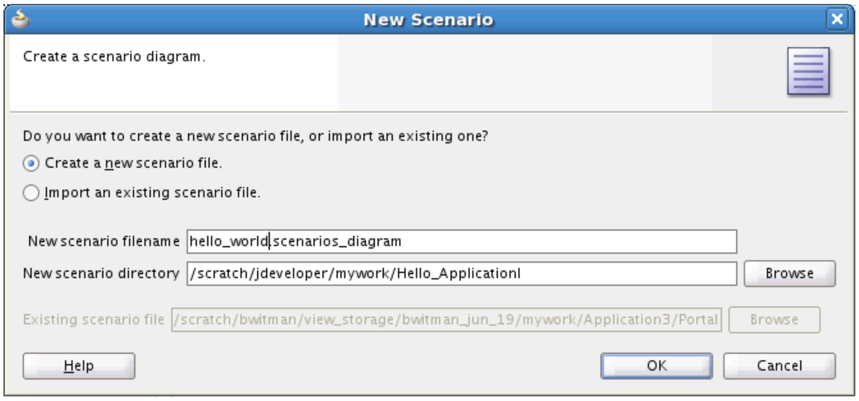
The New Gallery appears.

b. From the Current Project Technologies tab, select the **Personalization** category.

c. Select **Scenario** and click **OK**.

The New Scenario dialog displays.

Figure 66–18 New Scenario Dialog



New Scenario

Create a scenario diagram.

Do you want to create a new scenario file, or import an existing one?

● Create a new scenario file.

○ Import an existing scenario file.

New scenario filename: hello_world.scenarios_diagram

New scenario directory: /scratch/jdeveloper/mywork/Hello_Applicationl

Existing scenario file: /scratch/bwitman/view_storage/bwitman_jun_19/mywork/Application3/Portal

d. Leave the option `Create a new scenario file` selected, enter a **New scenario filename** called `hello_world.scenarios_diagram`, and click **OK** to create the scenario.

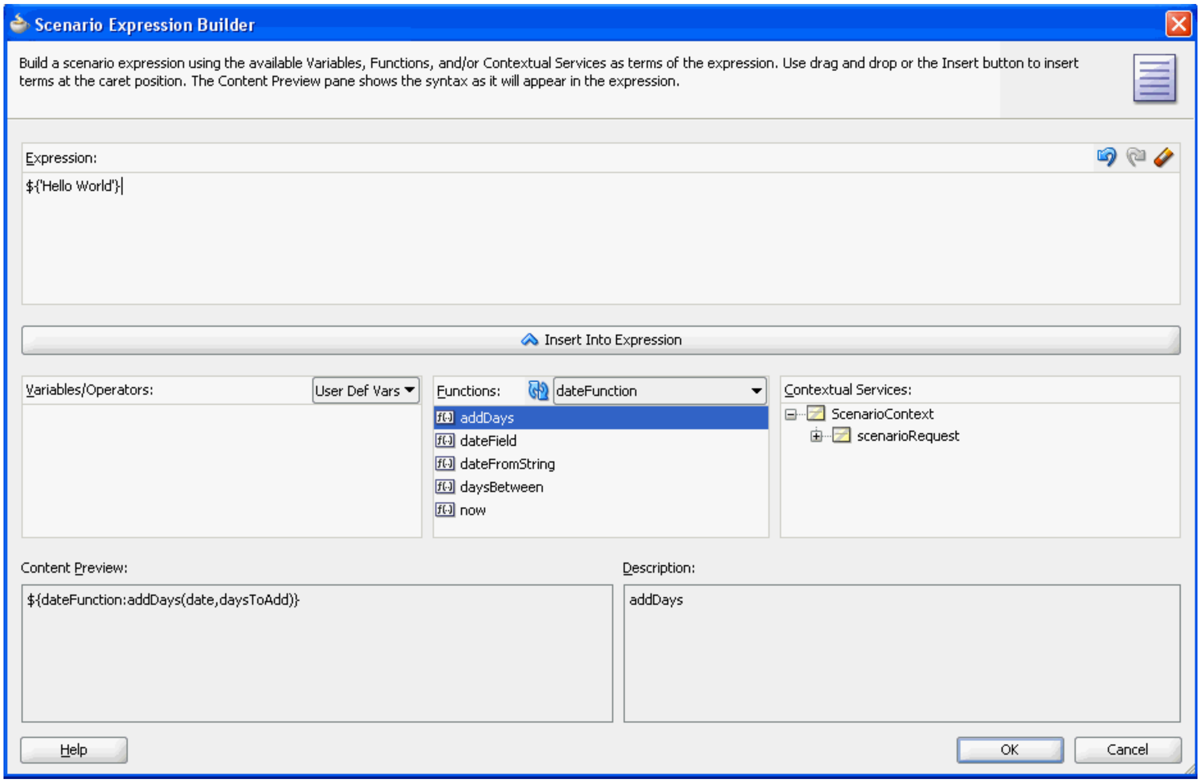
e. In the Scenario Editor's Diagram view, right-click the Start node and select `Add Following Statement->Return`.

   A Return node is added and connected.

f. Right-click the Return node and select **Set Expression**.

   The Scenario Expression builder displays (see Figure 66–19).

Figure 66–19 Scenario Expression Builder



Scenario Expression Builder

Build a scenario expression using the available Variables, Functions, and/or Contextual Services as terms of the expression. Use drag and drop or the Insert button to insert terms at the caret position. The Content Preview pane shows the syntax as it will appear in the expression.

Expression:

${'Hello World'}

Content Preview:

${dateFunction:addDays(date,daysToAdd)}

Description:

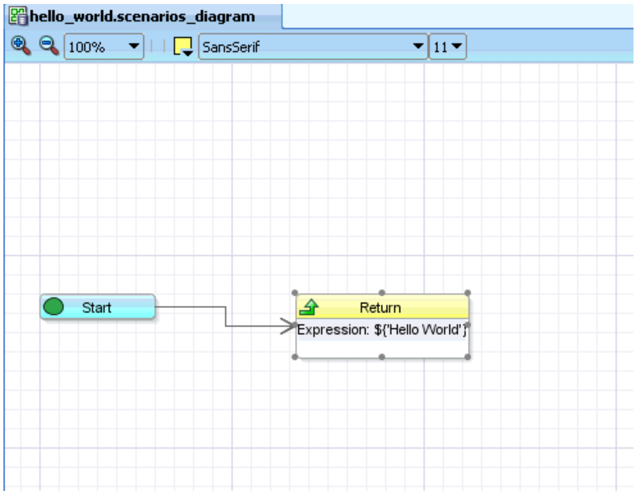
addDays

g. In the Expression text area, enter the following EL expression and click OK.

```
${'Hello World'}
```

Your scenario diagram should look like the one shown in Figure 66–20.

Figure 66–20 Scenario Editor - hello_world Scenario



h. From the File menu, select `Save` to save the `hello_world.scenarios_diagram`.

5. Try running the Scenario directly. Right-click the Start node and select **Run**.

6. In the Scenario Input dialog, click **OK**. This dialog allows you to enter any required parameters for the scenario. In this case, there are none.

7. The result "Hello World" appears in a log window.

8. Next, create a JSP page that invokes the `hello_world` scenario and displays the results.

a. Right-click the `Portal` project in the Application Navigator and select **New...**

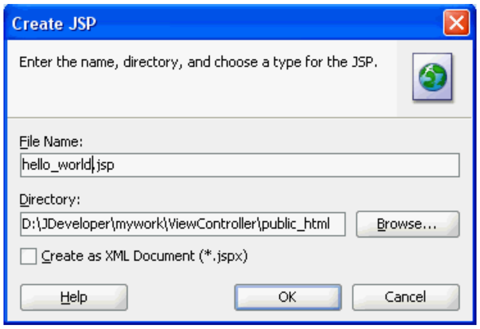
The New Gallery displays.

b. From the Current Project Technologies tab, select the JSP category.

c. From the item list select JSP and click OK.

The Create JSP dialog displays (see Figure 66–21).

Figure 66–21 Create JSP Dialog



Create JSP

Enter the name, directory, and choose a type for the JSP.

File Name:
hello_world.jsp

Directory:
D:\JDeveloper\mywork\ViewController\public_html

□ Create as XML Document (*.jspx)

d. Enter the File Name as `hello_world.jsp` and click **OK** to create the JSP page.

e. When the JSP Editor launches, select the Source view and replace the template text with the following JSP code:

Notice in the `c:out` command how the Personalization Context Bean `p13nContext` is being used to invoke the Conductor connection (`Conductor`) you created earlier using the scenario namespace `Hello_Application` specified earlier in the Application Properties dialog, invoking the scenario called `hello_world`, and finally displaying the results.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<%@ page contentType="text/html;charset=UTF-8"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8"/>
    <title>hello_world</title>
  </head>
  <body>
    <jsp:useBean id="p13nContext"
class="oracle.wcps.client.PersonalizationContext" scope="session"/>

<%((oracle.wcps.client.PersonalizationContext)session.getAttribute("p13nCon
text")).reset(); %>
    <c:out value="${p13nContext.conductor['Conductor'].namespaces['Hello_
application'].scenario['hello_world'].results}"/>
  </body>
</html>
```

Note: If you haven't configured single sign-on and the trust service as outlined in step 3, then the `Conductor` URL connection specified here will generate a 401 "Unauthorized" return code when the page is run. As a shortcut (for testing purposes only) you can substitute an inline connection:

```
http://weblogic:weblogic1@localhost:7101/wcps/api/conductor/
resourceIndex
```

in place of the `Conductor` URL to get around the single sign-on constraint. For more information about configuring the WebCenter Trust Services and single sign-on using this script see "Configuring Single Sign-On" in the *Administering Oracle WebCenter Portal*.

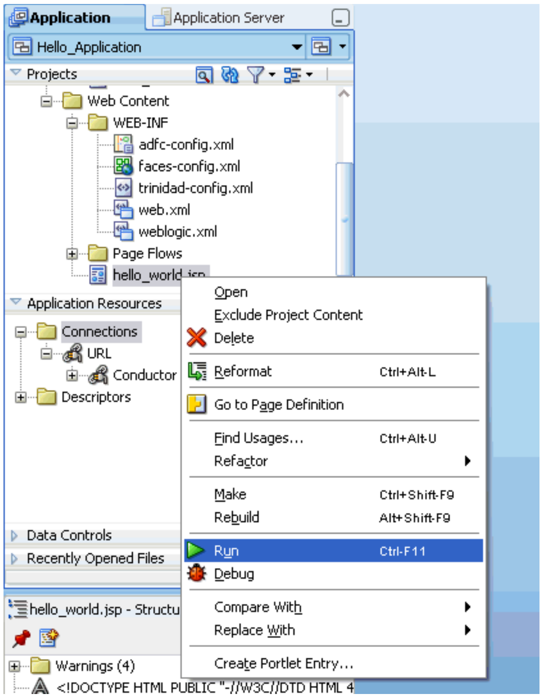
f. From the File menu, select Save to save the `hello_world.jsp`.

9. Finally, to build and deploy the `Hello_Application`, right-click the runnable artifact (the `hello_world.jsp` page) in the Application Navigator and select Run.

JDeveloper starts several background processes in sequence, including:

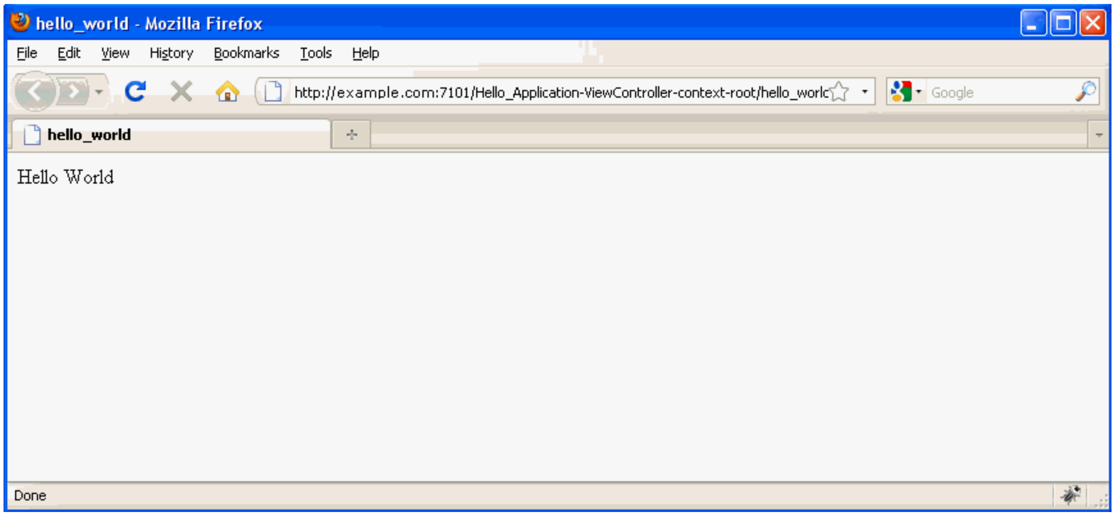
- Building the application,
- Starting the integrated server (if not already started),
- Deploying the application artifacts (including any Personalization artifacts) to the default domain, and
- Launching an external web browser to display the artifact `hello_world.jsp`.

Figure 66–22 Application Navigator - Building and Deploying the Application



The resulting `hello_world.jsp` JSP page appears in the browser.

Figure 66–23 Hello_Application's hello_world.jsp Page Displayed in Browser


hello_world - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://example.com:7101/Hello_Application-ViewController-context-root/hello_worlc
Google
hello_world
Hello World
Done

66.5 Using Personalization in WebCenter Portal

Oracle WebCenter Portal Personalization provides a dynamically derived user experience that can be applied to any WebCenter Portal object that can be used in conjunction with Expression Language (EL) expressions. This section provides an overview of how the Personalization engine can be used to determine which WebCenter Portal objects are presented to the user, and how these objects are presented based on the outcome of a Personalization scenario.

This chapter includes the following sections:

- Section 66.5.1, "Introduction to Personalization in WebCenter Portal"
- Section 66.5.2, "Calling Personalization ELs in WebCenter Portal"

66.5.1 Introduction to Personalization in WebCenter Portal

WebCenter Portal's Personalization provides a mechanism with which to vary the user experience based on dynamically evaluated criteria defined in a Personalization scenario. The scenario evaluates defined sources of input data, and generates a decision. The results of that decision or outcome can be applied in WebCenter Portal using Expression Language (EL) expressions.

To use Personalization in WebCenter Portal, you first need to create a scenario in a Framework application. The scenario does all the work of supplying the logic and calling one or more data providers to retrieve data. You then use ELs to execute and return the results of the scenario, and modify the user experience accordingly in WebCenter Portal. For information about how to create Personalization scenarios, see Section 66.2.2, "Authoring Personalized Scenarios in JDeveloper." The Personalization ELs used to run a scenario are cataloged in Section G.11, "ELs Related to Personalization."

Once you've set up your scenario, you can use ELs in WebCenter Portal to present targeted content or shape the way content is presented based on information about the user. For example, you can use a Personalization scenario to determine a user's role within an enterprise, and based on that selectively show content for that role. You can also tailor the presentation (such as page templates, page styles, skins, resource catalogs, and so on) for the user.

66.5.2 Calling Personalization ELs in WebCenter Portal

Personalization can deliver targeted content or change application flow based on both user and application context. Personalization, for example, can return content based on information about a user in a Human Resources database, or targeting the WebCenter Portal experience for that specific user by selecting the page templates, page styles, skins, and navigation flow within which the content is presented.

You can define the content sources, or data providers, that are used to evaluate or provide data for a scenario. The default data provider for Personalization is the CMIS data provider, which can retrieve data from WebCenter Portal's default content repository (Oracle WebCenter Content Server), and a data provider for Activity Graph and a locator for People Connections are also available out of the box. You can also define your own data providers for other data sources. For more information about data providers, see Section 66.1.3, "Using Data Providers."

In general, you call a scenario from a portal using the following EL expression:

```
#{p13nContext.conductor['CONDUCTORCONNECTION'].namespaces['NAMESPACE'].scenario['S
CENARIO'].results}
```

Where:

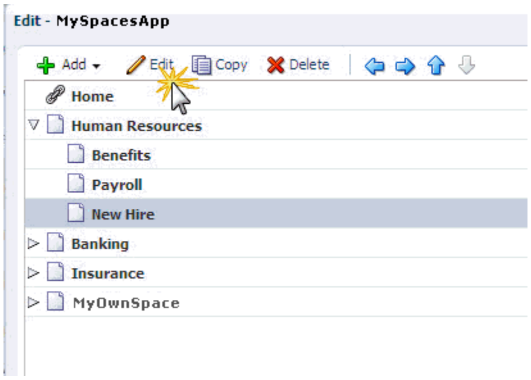
- `CONDUCTORCONNECTION` - is the name of the ADF Connection configured against the WebCenter application
- `NAMESPACE` - is the name of the namespace within which the scenario will run
- `SCENARIO` - is the name of the scenario to be invoked

For example, you can create a simple example of using Personalization to drive content based on information about the user by creating a scenario that returns "true" if the employee hire date is within the last two months (see Section 66.2.2, "Authoring

Personalized Scenarios in JDeveloper" to learn how to create a Personalization scenario). After creating the scenario:

1. Log in as an administrator in WebCenter Portal.
2. Create a page for new hires, naming it `New Hire`.
3. Edit the navigation model for the site, and add a new navigation link to the New Hire page. For more information about editing the navigation model in a portal, see Section 10.3, "Editing a Navigation Model."
4. Select New Hire and click the **Edit** (Pencil) icon.

Figure 66–24 Navigation Model

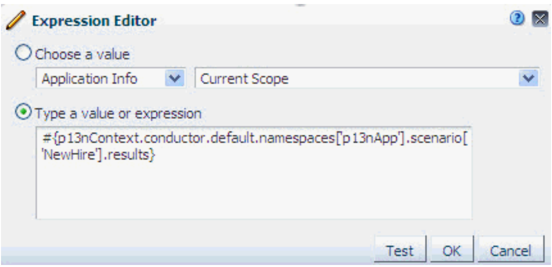


5. For the **Visible** attribute, open the Expression Editor, select **Type a value or expression** and enter:

```
#{p13nContext.conductor.default.namespaces['p13nApp'].scenario['NewHire'].resul
ts}
```

Where `p13nApp` is the name of the Framework application containing the scenario, and `NewHire` is the name of the scenario. This will execute the scenario and return the results (`True` or `False` in this case). If the user is a new hire (`True`) based on the results of the scenario, then the menu item will display when the user logs in.

Figure 66–25 Expression Editor



○ Choose a value

● Type a value or expression

#{p13nContext.conductor.default.namespaces['p13nApp'].scenario[
'NewHire'].results}

67

Implementing Custom Data Providers: Introduction

This chapter introduces data providers, discusses their important role in the Personalization architecture, and presents a basic example that you can build and run in JDeveloper. After reading this chapter, you will have a basic understanding of how to implement a custom data provider.

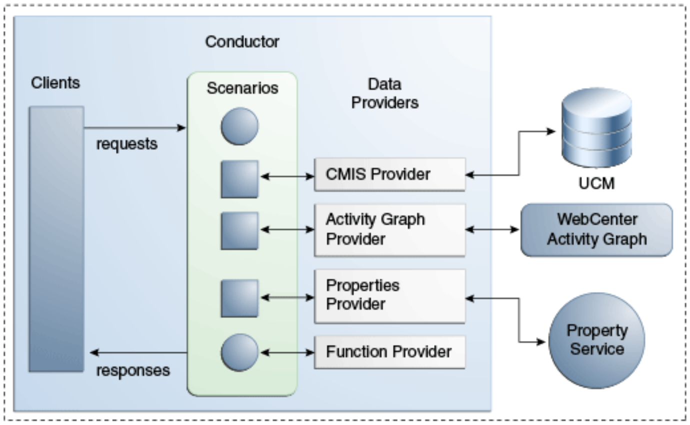
This chapter includes the following topics:

67.1 Introduction to Data Providers

Data providers are *connecting points* between services provided by external systems, like business management or inventory systems, and the Conductor. The Conductor is a container for running and managing scripted components called scenarios. Scenarios consume and process the data that one or more data providers retrieve, and thereby make that data available for use in a client application, like a portal or mobile application. See Figure 67–1.

Note: Another type of provider used with Personalization is a function provider. While data providers fetch data from external sources and return the data to a scenario, function providers filter and transform data within a scenario. See Chapter 68, "Implementing Custom Function Providers: Introduction."

Figure 67–1 Personalization Architecture Overview



Data providers are essential components within the Personalization architecture. Data providers offer the flexibility to connect to and retrieve data from almost any kind of service. WebCenter Portal includes several out-of-the-box providers. You can begin using these out-of-the-box providers immediately, or you can write your own custom data providers to satisfy specific use cases.

For example, you might want to write an inventory provider to retrieve parts and inventory information, a purchasing provider to retrieve purchasing information from a business management system, a sales provider to retrieve sales information from a CRM system, and so on.

67.2 Do I Need to Write a Custom Data Provider?

The first thing you need to do is determine if one of the out-of-the-box data providers is sufficient for your Personalization use case. The out-of-the-box data providers include:

- **Property Service Provider** – Allows you to integrate property service data into a scenario. See Section 70.5, "Using the Property Service Data Provider."
- **CMIS Data Provider** – Provides services to retrieve and search for content from standards-based CMIS (Content Management Interoperability Services) content servers, specifically provided by the Oracle WebCenter Content Server.
- **Activity Graph Data Provider** – Provides integration with the Activity Graph engine (the basis for Activity Graph), which provides recommendations about what a user may be interested in connecting with based on analytics within WebCenter.

These data providers might not be suitable for all use cases. For example, you may need to retrieve data from a legacy application with a non-standard set of APIs. In these cases, you need to implement a custom data provider. See Section 67.4, "Implementing a Simple Custom Data Provider."

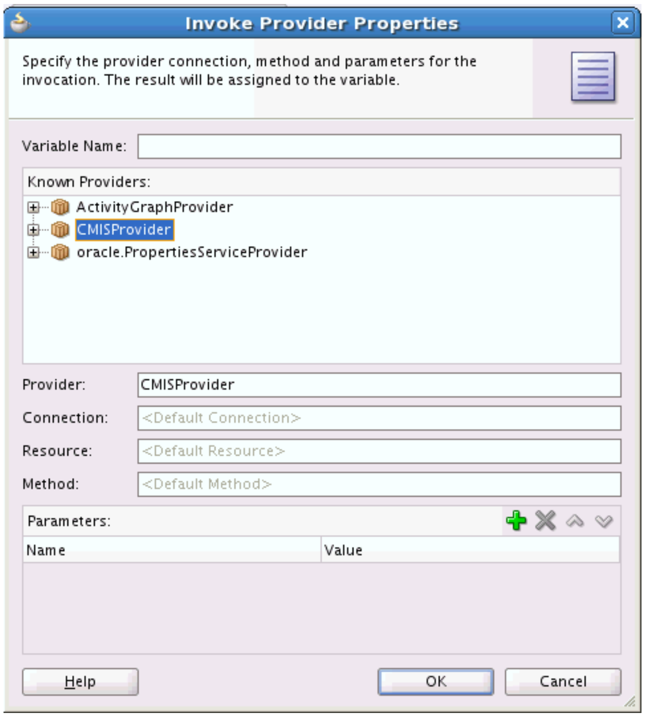
67.3 Discovering Data Providers

Data providers (both out-of-the-box and custom providers) are listed in the Invoke Provider Properties dialog as shown in Figure 67–2.

To access this dialog, create a scenario and add an Invoke Provider node to it. Right-click the node and select **Invoke Provider Properties**. For more information on creating scenarios and accessing this dialog, see Section 66.2.2, "Authoring Personalized Scenarios in JDeveloper."

For an example that demonstrates how to invoke a data provider, see Section 67.6, "Invoking the Data Provider in a Scenario from JDeveloper."

Figure 67–2 List of Known Providers



Invoke Provider Properties

Specify the provider connection, method and parameters for the invocation. The result will be assigned to the variable.

Variable Name:

Known Providers:

- ActivityGraphProvider
- CMISProvider
- oracle.PropertiesServiceProvider

Provider: CMISProvider

Connection: <Default Connection>

Resource: <Default Resource>

Method: <Default Method>

Parameters:

Name	Value

67.4 Implementing a Simple Custom Data Provider

This section describes how to implement a simple custom data provider, configure it, and invoke it inside a scenario. Even though this is a very basic example, it illustrates many important aspects of custom provider development and configuration.

- Section 67.4.1, "Overview of the Example and Prerequisites"
- Section 67.4.2, "Data Provider Architecture"
- Section 67.4.3, "Extending the DefaultDataProvider Class"
- Section 67.4.4, "Creating a Resource Properties File"
- Section 67.4.5, "Extending BaseConnectionConfig and DefaultProviderConnection"
- Section 67.4.6, "Extending DefaultExecutableResource"

67.4.1 Overview of the Example and Prerequisites

This example demonstrates how to implement a data provider that accepts one parameter and returns a message to the server console when it is called in a scenario. In the following sections, we discuss the required provider code and explain how to integrate the provider into the Conductor, use it in a scenario, and run the scenario.

The prerequisites for developing custom Personalization components, including data providers, are described in Section 2.5, "Setting Up JDeveloper for Personalization."

The prerequisites include making certain required components available to your project.

Note: This example is presented in the context of a Portal Framework application in JDeveloper.

For custom data provider development, JDeveloper is not required. You can use any Java IDE, however, you need to include the required WebCenter Personalization JAR files and Java components to your project. See Section 2.5, "Setting Up JDeveloper for Personalization." for more information.

67.4.2 Data Provider Architecture

To create a custom data provider, you must extend a set of Java base classes to provide the appropriate functionality. Table 67–1 gives a quick summary of the data provider classes used in this example section. If you intend to write a custom provider, you'll become familiar with these classes. If you're using an out-of-the-box provider, it's helpful to understand this basic architecture.

Table 67–1 Required Data Provider Base Classes

Interface	Primary Purpose
DefaultDataProvider	Instantiates a connection configuration object used by the provider. Each data provider has one connection (1-1 relationship).
BaseConnectionConfig	Specifies a name for the connection. A connection name is required and must be added to a configuration file called `wcps-connections.xml`, as explained later in this chapter.
DefaultProviderConnection	Instantiates one or more ExecutableResource objects. A data provider can reference multiple executable resource objects (1-many relationship).
DefaultExecutableResource	ExecutableResource methods do whatever work is required for your data provider to perform. Typically, this work involves interacting with external services. For example, if your provider is written to interact with Mail, you might retrieve certain Mail connection information and then implement getMail() and sendMail() methods. These methods can then be invoked within the context of a scenario. These concepts will become more clear when you review the simple data provider example presented in this chapter.

67.4.3 Extending the DefaultDataProvider Class

The first step in creating our example custom data provider is to extend DefaultDataProvider. This approach is best used for a quick implementation of a custom provider that does not rely on external resources, like databases or applications. For cases where you do need external resources, extend the ExternalDataProvider class instead.

Example 67–1 lists the code for the extended DefaultDataProvider class. In JDeveloper, refer to online help for detailed information on creating and compiling Java classes.

Tip: The general instructions for creating a class are to select **New** from the File menu and choose to create a new Java class. Copy the example code into the file and save it. If you explicitly enter the package `providers.data` in the Create Java Class dialog, the package directory will be created for you and your class file will be placed in that package directory. Follow the same approach to create all of the classes presented in this example.

Example 67–1 Extending DefaultDataProvider

```
package providers.data;
```

```
import oracle.wcps.conductor.annotation.ContextualProvider;
import oracle.wcps.dataprovider.base.DefaultDataProvider;
import oracle.wcps.conductor.provider.IConnection;
import oracle.wcps.dataprovider.base.IConnectionConfig;

@ContextualProvider
        (
                contextName="SayHelloProvider",
                resourceBundle="resources.SayHelloProperties",
                descriptionBundleKey="hello.provider.description",
                nameBundleKey="hello.provider.name"
        )

public class SayHelloProvider extends DefaultDataProvider {

    public Class<?> getConnectionConfigClass()
    {
       return SayHelloConnectionConfig.class;
    }

    @Override
    protected IConnection createConnection(IConnectionConfig config)
    {
        return new SayHelloConnection((SayHelloConnectionConfig)config);
    }


}
```

The first thing to notice about SayHelloProvider is that it is *annotated*. Every data provider class requires the following `@ContextualProvider` annotation stanza immediately before the class definition:

```
@ContextualProvider
        (
                contextName="SayHelloProvider",
                resourceBundle="resources.SayHelloProperties",
                descriptionBundleKey="hello.provider.description",
                nameBundleKey="hello.provider.name"
        )
```

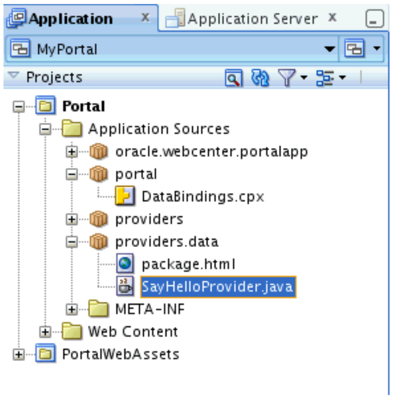
The `contextName` element specifies the name that will appear in the scenario editor dialog that lets you select the data provider. The `resourceBundle` element refers to a resource file that exists in the class path of the data provider. You can have multiple resource files in a project. Just remember that the `resourceBundle` value must correspond to one of them. The other annotations are resource bundle keys used to identify strings in the resource file, which primarily support localization. We'll discuss creating the resource file in the next section, Section 67.4.4, "Creating a Resource Properties File."

Note that to use these class-level annotations, you must import the following class:

```
import oracle.wcps.conductor.annotation.ContextualProvider;
```

Figure 67–3 shows the new `SayHelloProvider.java` source file in the Application Navigator in JDeveloper. Note that the source file is in a package called `providers.data`. You are responsible for creating the package, according to your own conventions.

Figure 67–3 Data Provider Source File



67.4.4 Creating a Resource Properties File

The class-level Java annotations placed in the data provider source file specify a resource properties file. This file must exist and must include the keys used in the class annotations and provide their values.

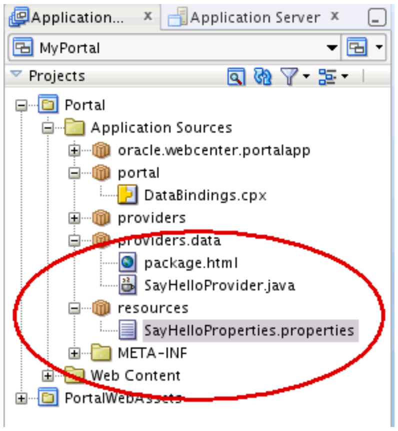
Note: The resource properties file's package must be located within the same parent directory as your source code or source code package. You can create multiple resource files, as long as they are referenced properly in the provider class.

For example, the following resource keys were listed in the SayHelloProvider class annotations (see the listing in Example 67–1). The first annotation, `hello.provider.name`, specifies the name of the provider as it will appear in the scenario editor's Invoke Provider dialog. The second annotation provides a brief description and also appears in the Invoke Provider dialog when you hover the mouse over a provider's name.

```
hello.provider.name=SayHelloProvider
hello.provider.description=Simple data provider that greets a user by name.
```

Figure 67–4 shows a properties file in the Application Navigator called `SayHelloProperties.properties` and it is in a package called `resources`. Recall from Example 67–1 that the class annotations specified the resource file to be `resources.DataProviderResources`, which is what is reflected in Figure 67–4.

Figure 67–4 The Resource Properties File



67.4.5 Extending BaseConnectionConfig and DefaultProviderConnection

If you created the SayHelloProvider class as presented previously, you noticed that two classes are unresolved. We'll create those classes next. The first class, SayHelloConnectionConfig, extends the base class BaseConnectionConfig. The second, SayHelloConnection extends DefaultProviderConnection.

Note: Each DataProvider class has a single Connection class, whose attributes are described in the ConnectionConfig class.

Example 67–2 lists SayHelloConnectionConfig. It's empty because for this example, there are no connections to configure. In this example, you could just use BaseConnectionConfig directly, rather than extending it. If you are writing a provider that needs to connect to external resources, then this class is more important.

Example 67–2 Extending BaseConnectionConfig

```
package providers.data;

import oracle.wcps.dataprovider.base.BaseConnectionConfig;
import oracle.wcps.connection.annotation.ConnectionConfiguration;

 @ConnectionConfiguration
        (
                connectionType="client.simple.connection"
        )
public class SayHelloConnectionConfig extends BaseConnectionConfig {
    public SayHelloConnectionConfig() {
        super();
    }
}
```

The class-level annotation, `@ConnectionConfiguration`, is important. It specifies the connection type for the provider. The connection type specified in this annotation must match the `<connection-type>` element in the `wcps-connections.xml` configuration file, which we'll discuss shortly in Section 67.5.6, "Updating the WCPS Connections Configuration File."

The next class, SayHelloConnection, extends DefaultProviderConnection. This class is primarily responsible for instantiating ExecutableResource objects, which do the work of the data provider, like retrieving data by calling external APIs. A provider can have multiple ExecutableResource objects; however, for this example, we only need one.

Example 67–3 Extending DefaultProviderConnection

```
package providers.data;

import oracle.wcps.conductor.provider.IExecutableResource;
import oracle.wcps.dataprovider.base.DefaultProviderConnection;

public class SayHelloConnection extends DefaultProviderConnection {

    public SayHelloConnection(SayHelloConnectionConfig config) {
        super(config);
    }
    @Override
       protected void createExecutableResources()
       {
           IExecutableResource resource = new SayHelloExecutableResource();
           executableResources.put("SimpleDataProvider", resource);

       }
}
```

Note that the Map key "SimpleDataProvider" is an arbitrary name. It does not have to match the class name.

67.4.6 Extending DefaultExecutableResource

The last class you need to extend is DefaultExecutableResource. ExecutableResource objects are the data provider work horses. These classes let you implement the custom code that runs in a scenario. If you write a provider that fetches data from an external source, the code for performing that task goes in an ExecutableResource class.

> **Note:** A Connection may have several implementations of an ExecutableResource. For example, the ActivityGraphProvider's ActivityGraphConnection has three different ExecutableResources related to common items, common users, and recommendations.

The ExecutableResource class for this simple example doesn't do very much: it just returns a message. Review the code in Example 67–4 and we'll discuss the details immediately after the example.

Example 67–4 Extending DefaultExecutableResource

```
package providers.data;

import oracle.wcps.conductor.annotation.PublicFunction;
import oracle.wcps.conductor.annotation.PublicParameter;
import oracle.wcps.dataprovider.base.DefaultExecutableResource;

public class SayHelloExecutableResource extends DefaultExecutableResource {

    @PublicFunction
               (
                       functionName = "sayHello",
                       descriptionBundleKey = "provider.method.sayHello.description"
```

```
            )
    public String sayHello(@PublicParameter(parameterName = "user",
                     descriptionBundleKey = "provider.parameter.sayHello.user.description")
                     String user)

    {
        String msg = "Hello, " + user +
            ".  How are you today!";
        System.err.println(msg);
        return msg;
    }
}
```

The most important thing to notice about this code is that the sayHello() method and its parameter are *annotated*. The annotation is required and allows the scenario editor to pick up and display metadata about the method. As with other annotations, these represent a name/value pair, where the *value* part is a resource bundle key. This key is then referenced in the same resource properties file that was specified in the SayHelloProvider class.

> **Tip:** Use of the resource bundle to isolate the string values is a best practice and assists with localization. You must be sure to include the properties file in your final, deployed JAR file. We'll discuss creating the JAR file in Section 67.5, "Deploying the Custom Data Provider." See also Section 67.4.4, "Creating a Resource Properties File."

That's it for coding our simple SayHelloExecutableResource class. As you can see, this class allows you to implement custom methods that can be executed in a scenario. Don't forget that annotation is required for both methods and parameters.

Next, we need to deploy the data provider to the server, where it can be used in a scenario. See Section 67.5, "Deploying the Custom Data Provider."

67.5 Deploying the Custom Data Provider

After you create a new data provider class, you need to compile it and deploy it properly. After you accomplish these tasks successfully, the provider will show up in the scenario editor in the Invoke Data Provider Properties dialog, as explained in Section 67.6, "Invoking the Data Provider in a Scenario from JDeveloper."

> **Note:** Data provider deployment can be tricky, because it's largely a manual procedure. You must follow these instructions carefully–even a simple typo at any point will prevent the provider from being deployed successfully.

To summarize the steps, you must deploy a JAR file containing:

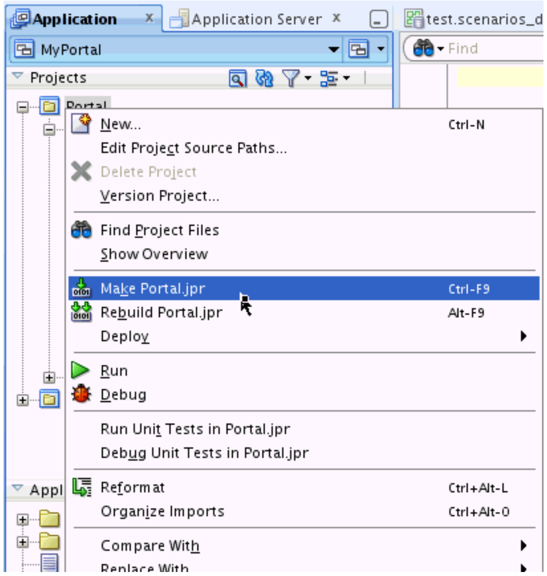
- your compiled data provider classes
- a resource properties file (which must be in the same parent directory as the classes)
- a configuration file listing the classname(s) of your data provider(s)

67.5.1 Compile Your Data Provider Classes

Data providers are written in Java, and must be compiled before they are deployed.

1. In Application Navigator, right-click the project containing your source code and select either the **Make** or **Rebuild** options, as shown in Figure 67–5.

Figure 67–5 Compiling a Project



67.5.2 Create a Configuration File in META-INF/services

The next step in preparing your data provider for deployment is to create a simple configuration file that lists the full class name(s) of your provider(s).

1. In the Application Navigator, create a new folder called `META-INF` in the **Application Sources** folder.
2. In the `META-INF` folder, create a folder called `services`.
3. In the `services` folder, create a text file called `oracle.wcps.conductor.provider.IDataProvider`. You must use this exact name.
4. Open the `oracle.wcps.conductor.provider.IDataProvider` file and enter the full class name for each data provider you wish to deploy. If you have more than one provider, place each one on a separate line in the file.

   For example:

   ```
   providers.data.SayHelloProvider
   ```

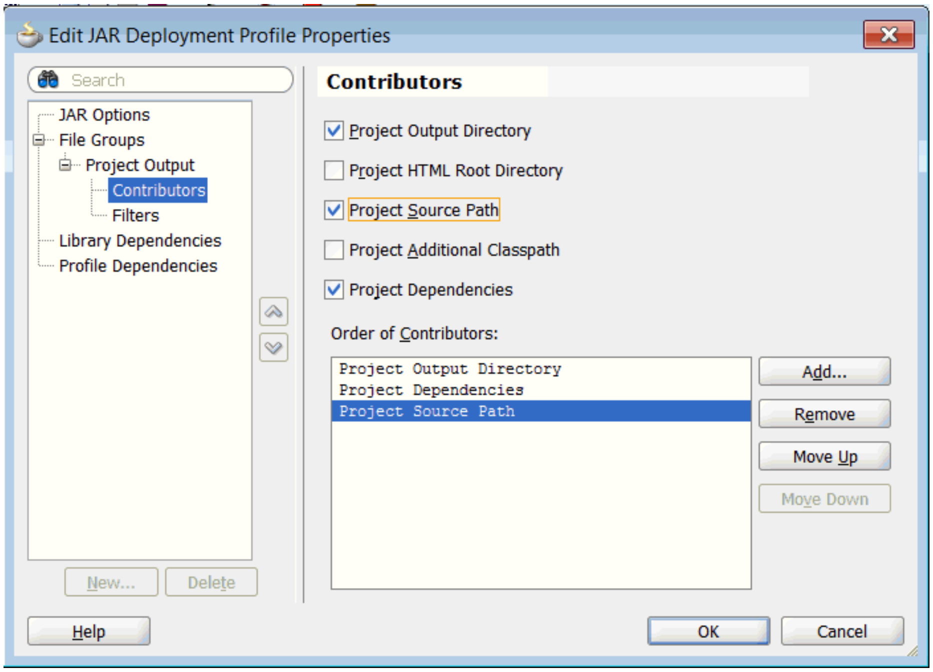
67.5.3 Setting Up the JAR File Structure

If you are unfamiliar with JAR file creation in JDeveloper, this section explains how to set up your JAR file structure (a deployment profile) to ensure that all the required elements are included.

1. Right-click the project containing your data provider source code in the Application Navigator and select **Project Properties**.
2. In the Project Properties dialog, select **Deployment**.
3. Click **New**.
4. Select **JAR File** as the Archive Type and give the JAR a name.

5. Click **OK**.
6. In the JAR Options dialog, select **Contributors**.
7. Be sure that **Project Output Directory**, **Project Source Path**, and **Project Dependencies** are selected, as shown in Figure 67–6.

Figure 67–6 Selecting Project Output Contributors



Contributors

☑ Project Output Directory

□ Project HTML Root Directory

☑ Project Source Path

□ Project Additional Classpath

☑ Project Dependencies

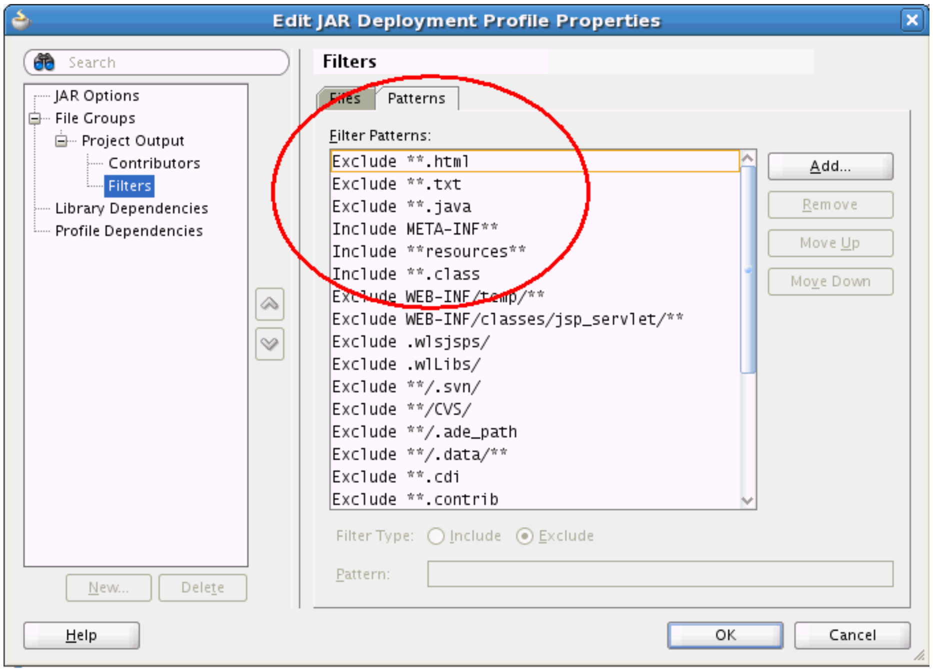
Order of Contributors:

```
Project Output Directory
Project Dependencies
Project Source Path
```

8. Select **Filters**.
9. Select the **Patterns** tab.
10. In the Patterns tab, add the following file patterns to include and exclude specific types of files from the JAR.
    - Include: `**.class`
    - Include: `**resources**`
    - Include: `META-INF**`
    - Exclude: `**.java`
    - `Exclude: **.txt`
    - Exclude: `**.html`

    Figure 67–7 shows these patterns after they have been added to the list.

Figure 67–7 Selecting JAR File Contents



```
Exclude **.html
Exclude **.txt
Exclude **.java
Include META-INF**
Include **resources**
Include **.class
Exclude WEB-INF/temp/**
Exclude WEB-INF/classes/jsp_servlet/**
Exclude .wlsjsps/
Exclude .wlLibs/
Exclude **/.svn/
Exclude **/CVS/
Exclude **/.ade_path
Exclude **/.data/**
Exclude **.cdi
Exclude **.contrib
```

11. Click **OK**, and then **OK** in the Project Properties dialog.

12. Save your project.

67.5.4 Create a JAR File

After the JAR deployment profile is set, you are ready to generate a JAR file from your project.

1. Right-click the project (in this case, the Portal project) in the Application Navigator and select **Deploy**.

2. Select the JAR file you want to deploy. This is the name you gave the file in Section 67.5.3, "Setting Up the JAR File Structure."

3. In the Deployment Action dialog, select **Deploy to JAR** file and click **Finish**.

The JAR file is placed in your project directory. You can view it on the file system in: `<Workspace_Directory>/Portal/deploy`. For example, if your Workspace is called MyProviders, you might find the JAR here: `C:\JDeveloper\mywork\MyProviders\Portal\deploy`.

67.5.5 Copy the JAR File to the Server

You must copy the JAR file to the server.

1. Copy the JAR file that you created in the previous step. As noted previously, the file is located in `<Workspace_Directory\Portal\deploy`.

2. Paste the JAR file the following location on the server:

   ```
   DOMAIN_HOME/conductor-extensions-library/WEB-INF/lib
   ```

   For example, for an Integrated WebLogic Server environment:

   ```
   C:\JDeveloper\system11.1.7.40.63.82\DefaultDomain\conductor-extensions-
   library\WEB-INF\lib
   ```

Or, in a managed server environment:

```
ORACLE_HOME/oracle/user_projects/applications/wc_
domain/conductor-extensions-library/WEB-INF/lib
```

3. Restart the server.

67.5.6 Updating the WCPS Connections Configuration File

Finally, you need to update `wcps-connections.xml`. This file exists on the server, in a configuration directory in the default domain directory. In your own development environment, the simplest way to update this file is to edit it manually. The file is located in your default domain, here:

DOMIAIN_HOME/config/fmwconfig/wcps-connections.xml

> **Note:** After editing and saving this file, redeploy the wcps-services application using the WebLogic Server Console. To do this, go to the Deployments section of the console and locate wcps-services in the Deployments table. Select **wcps-services** and click **Update** to redeploy it.

Add the `<connection>` element shown in Example 67–5 to the `wcps-connections.xml` file.

Example 67–5 Sample wcps-connection.xml Entry

```
<connection>
    <connection-name>SayHelloConnection</connection-name>
    <connection-type>client.simple.connection</connection-type>
    <namespace>*</namespace>
    <properties>
        <property>
            <name>isDefault</name>
            <value>true</value>
        </property>
    </properties>
</connection>
```

The `namespace` attribute specifies the namespace in which the scenario exists. By default, the namespace is the name of your portal application. Or, `namespace` can be an asterisk (*), which specifies all namespaces.

> **Tip:** You can discover the namespace through REST commands. From the resourceIndex, follow the namespaces link. For example:
>
> `http://localhost:7101/wcps/api/conductor/resourceIndex`
>
> For more on the resourceIndex, see Section 66.4, "Tutorial: Creating, Testing and Deploying a Simple Application."

The connection name is an arbitrary name that will appear in the scenario editor user interface. The connection type must match the `connectionType` annotation in your extension of BaseConnectionConfig (see Example 67–2). The connection types for the out-of-the-box data providers are:

- properties.provider.connection – Property Service Data Provider
- activity.provider.connection – Activity Graph Data Provider

- cmis.provider.connection – CMIS Data Provider

> **Tip:** If you deploy your provider and find that it does not show up in the user interface, it's possible you specified an incorrect namespace in `wcps-connections.xml`. Try using the asterisk (*) if you are in doubt about which namespace to use.

If you do not have direct access to the server file system, you can update the connection information using Fusion Middleware Control. For more details using Fusion Middleware Control, see the "Configuring Connections Using Fusion Middleware Control" section in *Administering Oracle WebCenter Portal*.

67.5.7 Testing the Deployment

To test the deployment, simply verify that the custom data provider shows up in the Scenario editor user interface. For details, see Section 67.3, "Discovering Data Providers."

If you're unable to discover the deployed provider, then go back over your steps and carefully check that there are no obvious errors, like configuration or resource file misspellings. Be sure that you created your JAR file properly as described in Section 67.5.3, "Setting Up the JAR File Structure." Also, be sure you copied the JAR file to the correct domain.

These are common mistakes to double-check for:

- The `META-INF/services` contents must be included in the JAR file at the top level. For example, this folder is packaged in the JAR file as `META-INF/services/oracle.wcps.conductor.provider.IDataProvider`, not in any other location.
- The properties file describing the annotations must be included in the JAR file at the top level. See also Section 67.4.4, "Creating a Resource Properties File."
- The JAR file must be copied to the folder:

  ```
  DOMAIN_HOME/conductor-extensions/WEB-INF/lib
  ```

  You must restart the server after copying the file.
- The data provider connection entry must be added to `wcps-connections.xml`. See Section 67.5.6, "Updating the WCPS Connections Configuration File."

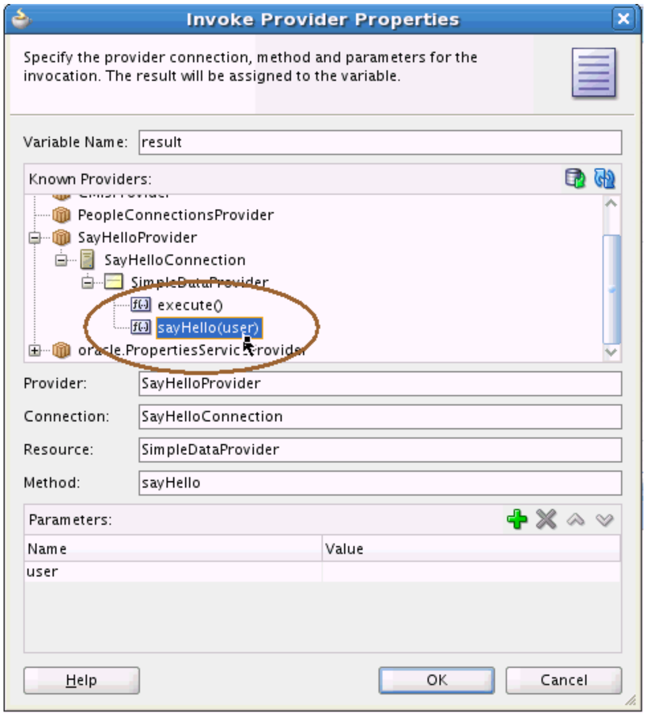
67.6 Invoking the Data Provider in a Scenario from JDeveloper

After your custom data provider is deployed successfully, you can use it in a scenario. Let's see how this works for our example provider.

1. Right-click your project in the Application Navigator and select **New**.
2. In the New Gallery dialog, select the General category, then click **Personalization**.
3. In the Items list, select **Conductor Scenario** and click **OK**.
4. In the New Conductor Scenario dialog, give the scenario a name and click **OK**.
5. In the scenario editor, right-click the Start node and select **Add Following Statement** and then **Invoke Provider**.
6. Right-click the provider node and select **Invoke Provider Properties**.

7. Drill into the SayHelloProvider node and select the **sayHello(user)** method, as shown in Figure 67–8.

Figure 67–8 Selecting the Data Provider Method



Specify the provider connection, method and parameters for the invocation. The result will be assigned to the variable.

Variable Name: result

Provider: SayHelloProvider

Connection: SayHelloConnection

Resource: SimpleDataProvider

Method: sayHello

Name	Value
user	

8. Enter a variable name in the Variable Name field. You'll reference this variable in the next step, when you create a return statement. For example, simply enter `result`.

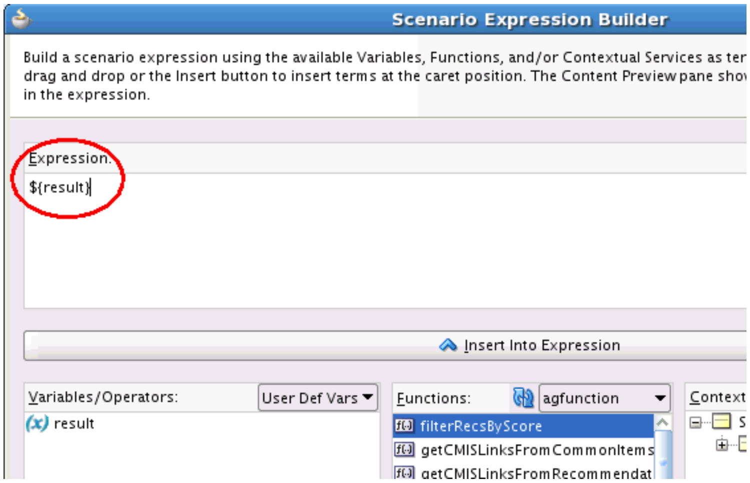
> **Note:** It's easy to forget to enter the variable name. The variable becomes available within the scenario context, and therefore, can be reused by other scenario components and operations, as we will see.

9. In the Parameters section of the dialog, enter a value for the **user** parameter. This value will be a static variable that will print out when the scenario is run.

> **Tip:** Another approach is to add an EL expression that gets the name of the logged in user and uses it in the scenario. For example: `${ScenarioContext.scenarioRequest.userPrincipal.name}`.

10. Click **OK**.
11. Right-click the Invoke Provider node and select **Add Following Statement**, and then select **Return**.
12. Right-click the Return node and select **Set Expression**.
13. In the Scenario Expression Builder dialog, simply enter the variable name you created in the Invoke Expression Provider dialog. You must use proper Expression Language syntax. For example, if you called the variable `result`, enter: `${result}`.

Figure 67–9 Entering a Result Expression

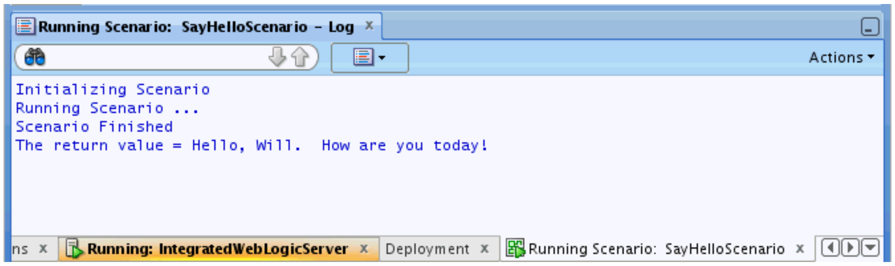


Build a scenario expression using the available Variables, Functions, and/or Contextual Services as ter
drag and drop or the Insert button to insert terms at the caret position. The Content Preview pane sho
in the expression.

Expression:
${result}

14. Click **OK**.
15. Right-click the Start node and select **Run**.
16. In the Scenario Input dialog, click **OK**.
17. After the server starts and the scenario is deployed, check the results in the JDeveloper log window, as shown in Figure 67–10.

Figure 67–10 Result of the Scenario



```
Initializing Scenario
Running Scenario ...
Scenario Finished
The return value = Hello, Will.  How are you today!
```

Running Scenario: SayHelloScenario - Log
Actions
ns
Running: IntegratedWebLogicServer
Deployment
Running Scenario: SayHelloScenario

For more information on using the scenario editor and the Expression Builder, see Chapter 66.2.2, "Authoring Personalized Scenarios in JDeveloper."

67.7 Designing Custom Data Providers: Best Practices

This section discusses best practices to consider in the design of a custom data provider.

- Section 67.7.1, "Create Domain-Specific Providers"
- Section 67.7.2, "Extend the Existing Data Provider Infrastructure"
- Section 67.7.3, "Reuse Scenarios and Data Providers"

67.7.1 Create Domain-Specific Providers

Create individual data providers that are specific to your use cases or problem domains. For example, if you want to access data from a business services, like PeopleSoft and Siebel, the best practice is to create separate data providers to clearly delineate the two.

Also keep in mind that a single data provider could have multiple executable resources, each representing a specific service. For example, a PeopleSoftProvider could extend the base ExternalDataProvider, and have several executable resources: one for retrieving a person's basic information, another for retrieving the job description, and so on.

67.7.2 Extend the Existing Data Provider Infrastructure

It's a best practice to extend existing data provider classes rather than implementing your own from scratch.

- Section 67.7.2.1, "Extend Base Classes"
- Section 67.7.2.2, "Use Connection Configuration"
- Section 67.7.2.3, "Reuse Connections"
- Section 67.7.2.4, "Use Caching"

67.7.2.1 Extend Base Classes

The Conductor provides a base infrastructure for data providers, and it is strongly recommended that you extend one of these providers instead of starting from scratch. As an example, an AbstractSOAPProvider could extend the ExternalDataProvider. More specific providers, such as a PeopleSoftProvider, could extend the SoapProvider.

67.7.2.2 Use Connection Configuration

For external systems, make use of the Conductor connection configuration files. Information that is rather static, such as host, port, and WSDL, are good attributes to associate with the data provider connection. You can manage conductor connections using Fusion Middleware Control, meaning you can add or change the values of connection attributes at runtime. "Configuring Connections Using Fusion Middleware Control" in *Administering Oracle WebCenter Portal*.

67.7.2.3 Reuse Connections

Because the Conductor's use of data providers is REST-ful, the data provider is instantiated every time a scenario is invoked. Sometimes, connections to external resources can be expensive to create. The base infrastructure for data providers has the ability to cache these connections.

67.7.2.4 Use Caching

Personalization will provide APIs to leverage Coherence caching.

For details, see Chapter 73, "Cache Management for Personalization."

67.7.3 Reuse Scenarios and Data Providers

One of the most powerful aspects of Personalization is that you can reuse both data providers and scenarios in multiple contexts and with multiple clients. For instance, a single scenario can be reused to deliver data to a mobile application, a transactional web site, a portal, and a tablet.

Scenarios may invoke multiple data (and function) providers and encapsulate a particular business process. Scenarios may also be chained together: the output of one scenario can be used as input to another.

68 Implementing Custom Function Providers: Introduction

This chapter introduces function providers, discusses their important role in data integration and the Data Integration architecture, and presents a basic example that you can build and run in JDeveloper. After reading this chapter, you will have a basic understanding of how to implement a function provider.

This chapter includes the following chapters:

68.1 Introduction to Function Providers

Where a data provider connects to and retrieves data from a data source, a function provider *operates* on data within the context of a scenario. WebCenter Portal provides a number of function providers out-of-the-box, like providers for working with List objects, Date objects, SQL data, and more. Or, you can implement custom function providers to address specific use cases.

68.2 Do I Need to Write a Function Provider?

WebCenter Portal includes a set of out-of-the-box function providers that perform certain commonly needed tasks. WebCenter Portal provides function providers that address general operations, like List and Date creation and manipulation. In addition, out-of-the-box function providers are included that address the data returned by specific data providers, like the SQL and REST data providers.

> **Note:** The out-of-the-box function providers are described in Chapter 69, "Function Provider Reference."

For some use cases, the set of standard function providers may be insufficient, and you then have the option of writing and deploying your own custom function providers. For example, if you need to work with a specific data set returned from a custom data provider, you may need to write custom function providers to handle that data. See Section 68.4, "Implementing a Simple Custom Function Provider."

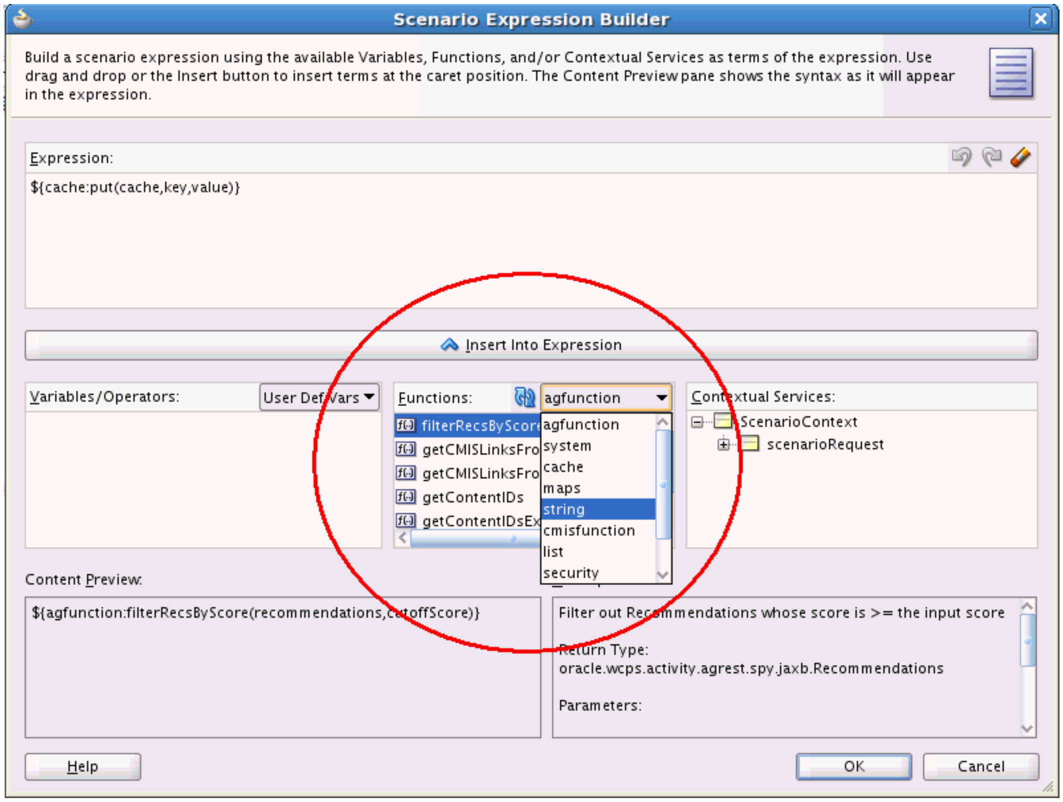
68.3 Discovering Function Providers

One way to discover the list of out-of-the-box and custom function providers is to bring up a the Scenario Expression Builder dialog, as shown in Figure 68–1.

1. Create an Execute scenario node.
2. Right-click the Execute node and select Set Expression.

For an example, see Section 68.6, "Calling a Function Provider in a Scenario."

Figure 68–1 List of Function Providers



Scenario Expression Builder

Build a scenario expression using the available Variables, Functions, and/or Contextual Services as terms of the expression. Use drag and drop or the Insert button to insert terms at the caret position. The Content Preview pane shows the syntax as it will appear in the expression.

Expression:

```
${cache:put(cache,key,value)}
```

Content Preview:

```
${agfunction:filterRecsByScore(recommendations,cutoffScore)}
```

Filter out Recommendations whose score is >= the input score

Return Type:
oracle.wcps.activity.agrest.spy.jaxb.Recommendations

Parameters:

The function providers allow you to perform operations on data. For example, Figure 68–1 shows the Scenario Expression Builder dialog. The "collections" function provider is selected. The drop-down list lets you select a function provider method for handling a collection of data. The collections function provider is one of several out-of-the-box function providers.

After you select a function provider, you need to fill in values for its parameters, if there are any. You supply parameter values to function providers by editing an Expression Language statement within the Expression Builder dialog. The dialog also provides a list of any variables that are available in the current scenario context as well as the Contextual Services, which are variables that exist within the scope of the current application.

> **Note:** Function providers appear in other statement contexts within the scenario editor that use the Expression Builder, such as Conditional and Return statements; however, the Expression Builder user interface associated with each statement is the same.

Another way to "discover" the function providers available to you is to view REST responses in a tool that lets you make REST requests and view the responses.

1. In a browser, enter this URL, where host and port are the host and port name where the WCPS server is running. For example:

   ```
   http://example.com:8891/wcps/api/conductor/resourceIndex
   ```

2. Locate the namespace URI and enter its URL in the browser. For example:

   ```
   http://example.com:8891/wcps/api/conductor/namespaces
   ```

3. Locate the `functionProviders` URI for your application and enter its URL in the browser. Set the value of `projection` to `summary`. For example:

   ```
   http://mexample.com:8891/wcps/api/conductor/namespaces/MyApplication/functionPr
   oviders?projection=summary
   ```

This URL returns a REST response containing all of the function providers that are deployed to the server. This is also a handy test to run to test the configuration for a new function provider.

68.4 Implementing a Simple Custom Function Provider

This section describes how to implement a simple custom function provider, configure it, and invoke it inside a scenario. Even though this is a very basic example, it illustrates many important aspects of custom provider development and configuration.

68.4.1 Overview of the Example and Prerequisites

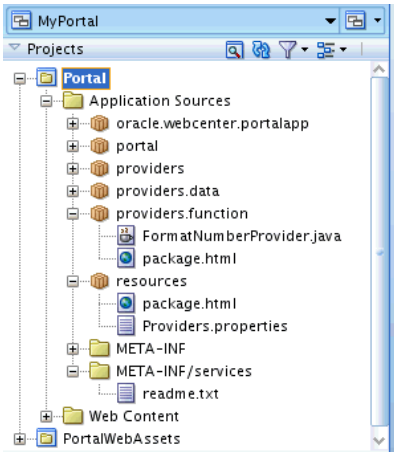
Before you begin developing a function provider in JDeveloper, be sure you have things set up properly. There are a few configurations that you need to make or verify for your environment. For details, see Section 2.5, "Setting Up JDeveloper for Personalization."

As general guidance, Figure 68–2 shows a sample project structure for a custom function provider implementation. You can develop function providers an any type of JDeveloper project that supports Java development. For details on creating Java classes in JDeveloper, refer to JDeveloper Online Help.

> **Note:** In this example, the provider is created in an Fusion Web Application in JDeveloper. You can also create function providers in WebCenter Portal applications or any other type of JDeveloper application that includes Java capabilities.

Note: Your project structure will not be identical to the sample shown in Figure 68–2; however, the basic organization of components (source files, resource properties, and META-INF/services configuration file) must follow this pattern for successful deployment. For example, it is required that your resources directory be in the same directory as your class files. Again, by following the general pattern shown in Figure 68–2, your deployment will succeed. The individual parts of the project structure are discussed in the following sections.

Figure 68–2 Sample Function Provider Project Structure



```
MyPortal
Projects
Portal
  Application Sources
    oracle.webcenter.portalapp
    portal
    providers
    providers.data
    providers.function
      FormatNumberProvider.java
      package.html
    resources
      package.html
      Providers.properties
    META-INF
    META-INF/services
      readme.txt
  Web Content
PortalWebAssets
```

68.4.2 Example Function Provider

All function providers are implementations of the IFunctionProvider interface. As with data providers, Java annotations allow function provider methods and parameters to appear in the scenario editor user interface.

Example 68–1 shows an example function provider. It provides a method for formatting numbers. In the following sections, we'll examine the parts of the class in detail, including the required Java annotations that appear at the top of the class and around methods and parameters.

Tip: The general instructions for creating a class are to select **New** from the File menu and choose to create a new Java class. Copy the example code into the file and save it. If you explicitly enter the package `model` (for this example) in the Create Java Class dialog, the package directory will be created for you and your class file will be placed in that package directory.

Note: Because function providers are simply Java components, you can follow best practices for exception handling as you would for any server-side Java components.

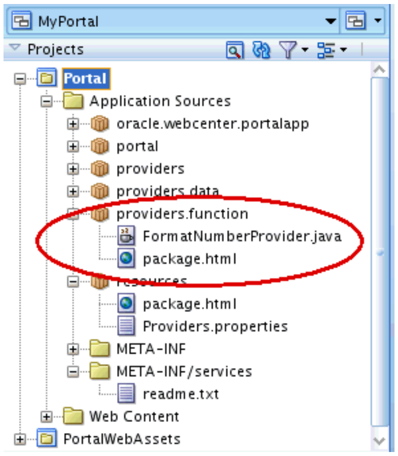
Example 68–1 Example Function Provider

```
package model;

import oracle.wcps.conductor.annotation.FunctionProvider;
import oracle.wcps.conductor.provider.IFunctionProvider;
import oracle.wcps.conductor.annotation.PublicFunction;
import oracle.wcps.conductor.annotation.PublicParameter;
import java.text.DecimalFormat;
import java.lang.NumberFormatException;

import oracle.wcps.conductor.exception.ConductorRuntimeException;

@FunctionProvider
(
prefix="number",
resourceBundle="resources.Providers",
nameBundleKey="function.provider.name",
descriptionBundleKey="function.provider.description"
)
public class FormatNumberProvider implements IFunctionProvider {
   @PublicFunction
    (
        functionName="format",
        descriptionBundleKey="format.description"
    )
    public static String getNumber(@PublicParameter(parameterName="pattern",
        descriptionBundleKey="pattern.description") String pattern,
        @PublicParameter(parameterName="number", descriptionBundleKey="number.description") String
number) {
        Double dd;
        dd = new Double("1.0");
        try {
            dd = new Double(number);
       } catch (NumberFormatException e){
           return ("You must enter a valid number.");
       }
       DecimalFormat df = new DecimalFormat(pattern);
       return number = df.format(dd);
    }
}
```

Figure 68–3 shows our example Java source file, `FormatNumProvider.java`, as it appears in the Application Navigator in JDeveloper. The file is in a package called `model`.

Tip: Your source files may be organized differently, but Figure 68–3 at least shows a complete project structure for a function provider. This general pattern of project organization is the best practice.

Figure 68–3 The Provider Class Source File



Any object can be returned from a function provider. As a best practice, be sure that your return objects are marshalable, adhering to JAXB standards. Return objects that adhere to this criteria can be used anywhere within a scenario, like as input to a data provider.

68.4.3 Adding Java Class Annotations

Every function provider class requires the following Java annotation stanza immediately before the class definition:

```
@FunctionProvider
(
prefix="number",
resourceBundle="resources.Providers",
nameBundleKey="function.provider.name",
descriptionBundleKey="function.provider.description"
)
```

The prefix element specifies the name that will appear in the scenario editor user interface and lets you select the function provider. For example, when this function provider is referenced in a scenario, the method is called with an Expression Language expression like this: `${number:getNumber(format, number)"}`.

Note: Prefix names and variables must not contain hyphens or spaces. If hyphens or spaces appear in the prefix names or variables, they cannot be referenced by Expression Language expressions.

The `resourceBundle` element refers to a resource file that exists in the class path of the function provider. The other annotations are resource bundle keys used to identify strings in the resource file, which primarily support localization.

Annotations are also required around your function provider's methods and method parameters, as explained in the next section. Note that to use annotations, you must import the following classes:

```
import oracle.wcps.conductor.annotation.PublicFunction;
import oracle.wcps.conductor.annotation.PublicParameter;
```

68.4.4 Writing Function Provider Methods

Methods and their parameters must be annotated, following the pattern shown in Example 68–2. The functionName value appears in the user interface, and the descriptionBundleKey value allows a description to be coded into the resource file specified at the top of the class. The same pattern applies to method parameter annotations.

> **Tip:** If you create methods with a Java Bean style "get" syntax, you can access object attributes in EL using convenient dot notation. For example, if your provider has a "foo" attribute and a "getFoo()" method, the attribute can be accessed through dot notation in EL in a scenario with a statement like this: ${myReturnObject.foo()}.

Example 68–2 Java Annotations for Methods and Parameters

```
  @PublicFunction
    (
        functionName="format",
        descriptionBundleKey="format.description"
    )
    public static String getNumber(@PublicParameter(parameterName="pattern",
        descriptionBundleKey="pattern.description") String pattern,
        @PublicParameter(parameterName="number", descriptionBundleKey="number.description") String
number) {

        Double dd;
        dd = new Double("1.0");
        try {
            dd = new Double(number);
       } catch (NumberFormatException e){
           return ("You must enter a valid number.");
       }
       DecimalFormat df = new DecimalFormat(pattern);
       return number = df.format(dd);
    }
}
```

68.5 Deploying a Custom Function Provider

After you create a new function provider class, you need to compile it and deploy it properly. After you accomplish these tasks successfully, the provider will show up in the scenario editor's Expression Builder user interface. This section explains the required steps.

> **Note:** Function provider deployment can be tricky, because it's largely a manual procedure. You must follow these instructions carefully–even a simple typo at any point will prevent the provider from being deployed.

To summarize the steps, you must deploy a JAR file containing:

- your compiled function provider class(es)
- a resource properties file (which must be in the same directory as the classes)
- a configuration file listing the classname(s) of your function provider(s)

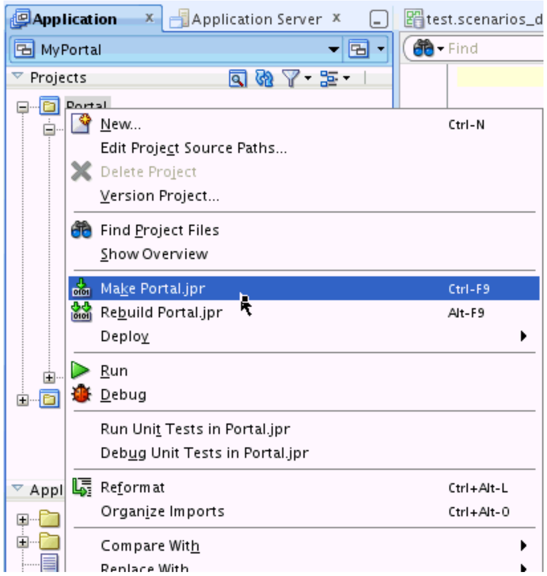
The JAR file must then be manually copied to the server and the server must be restarted.

68.5.1 Compile Your Function Provider Class(es)

Function providers are written in Java, and must be compiled before they are deployed.

1. In Application Navigator, right-click the project containing your source code and select either the Make or Rebuild options, as shown in Figure 68–4.

Figure 68–4 Compiling a Project



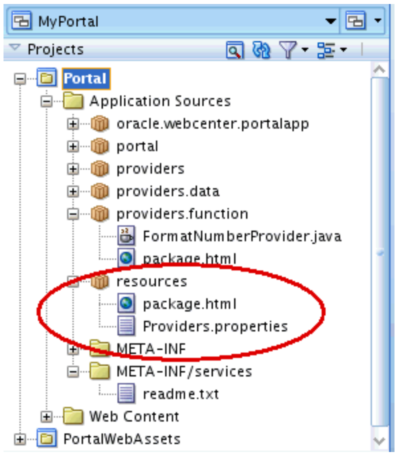
68.5.2 Create a Resource Properties File

The Java annotations placed in the function provider class file point to a resource properties file. This file must exist and must include the required keys and values. The basic steps for creating the file are:

1. Right-click the project containing your Java files and select **New**.
2. In the New Gallery dialog, select **General**.
3. Create a Java package. In this example, the package is called **resources**.
4. Create a property file in the package. In this example, the file is called **Providers.properties**.

Figure 68–5 shows a properties file called `Providers.properties` in the resources package.

Figure 68–5 Resource Properties File



For example, the following resource keys were listed in the NumberFormatProvider class annotations (see the listing in Example 68–1). The first annotation, `format.description`, describes the provider's purpose. The others describe each of the input parameters.

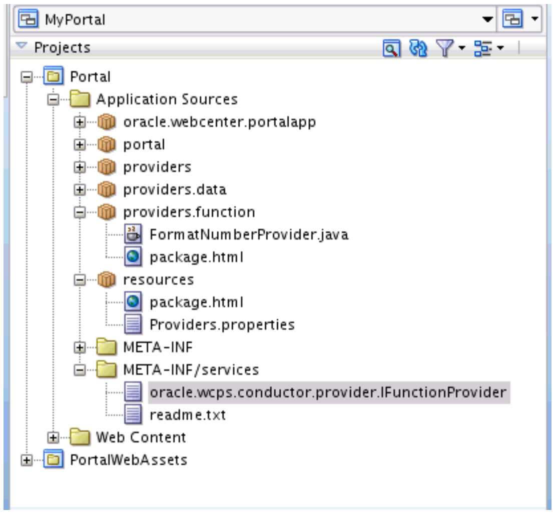
```
format.description=Format a number.
pattern.description=A number format pattern like #.##.
number.description=The number to format.
```

68.5.3 Create a Configuration File in META-INF/services

The last step in preparing your function provider for deployment is to create a simple configuration file that lists the full class name(s) of your provider(s).

1. In the Application Navigator, create a new folder called `META-INF` in the Application Sources folder.
2. In the `META-INF` folder, create a folder called `services`.
3. In the `services` folder, create a file called `oracle.wcps.conductor.provider.IFunctionProvider`. You must use this exact name. See Figure 68–6.

Figure 68–6 Function Provider Configuration File



4. Open the `oracle.wcps.conductor.provider.IFunctionProvider` file and enter the full classname for each function provider you wish to deploy.

   For example:

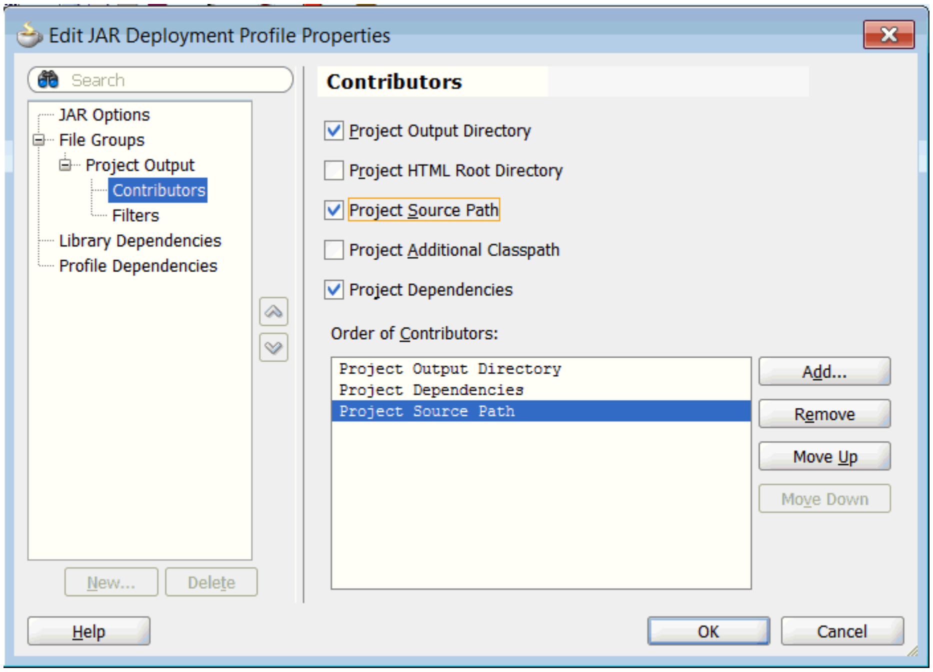
   ```
   model.FormatNumProvider
   ```

68.5.4 Set Up the JAR File Structure

If you are unfamiliar with JAR file creation in JDeveloper, this section explains how to set up your JAR file structure (a deployment profile) to ensure that all the required elements are included.

1. Right-click your project (in this example, the project called Portal) in the Application Navigator and select **Project Properties**.
2. In the Project Properties dialog, select **Deployment**.
3. Click **New**.
4. Select JAR File as the Archive Type and give the JAR a name.
5. Click OK.
6. In the JAR Options dialog, select **Contributors**.
7. Be sure that Project Output Directory, Project Source Path, and Project Dependencies are selected, as shown in Figure 68–7.

Figure 68–7 Selecting Project Output Contributors



Contributors

☑ Project Output Directory

□ Project HTML Root Directory

☑ Project Source Path

□ Project Additional Classpath

☑ Project Dependencies

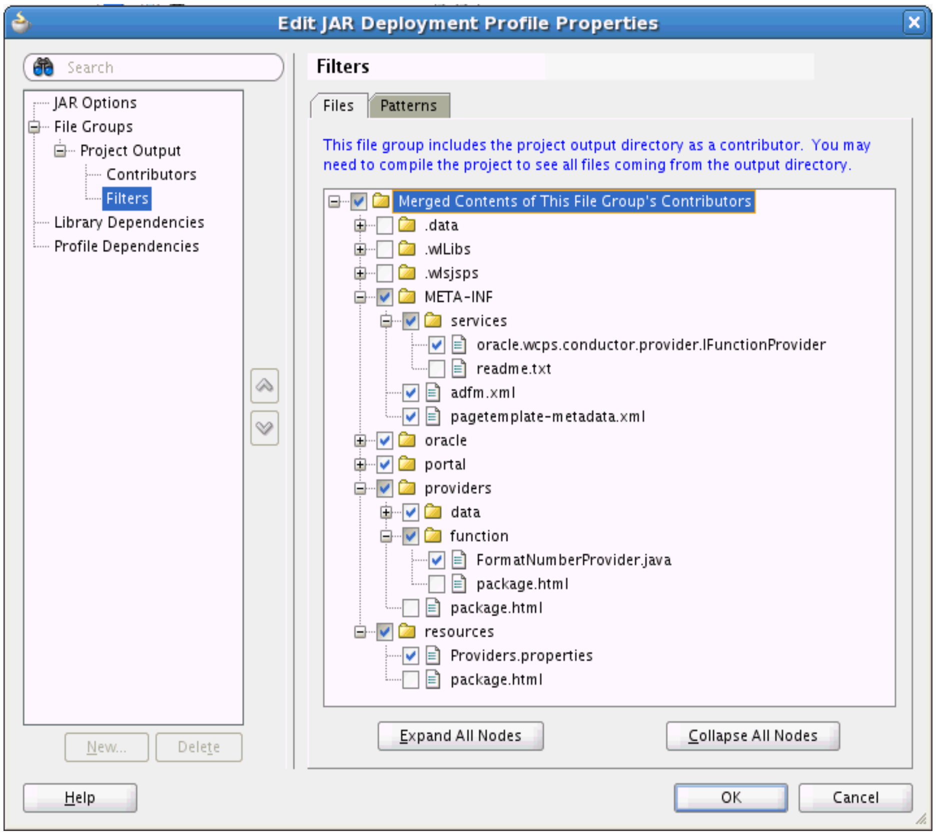
Order of Contributors:

```
Project Output Directory
Project Dependencies
Project Source Path
```

8. Select **Filters**.

9. In the Files tab, select only the files you want to be added to the JAR. The JAR should include the `META-INF/services` directory contents, Java classes, and resources folder, as shown in Figure 68–8.

Figure 68–8 Selecting JAR File Contents



This file group includes the project output directory as a contributor. You may need to compile the project to see all files coming from the output directory.

```
☑ Merged Contents of This File Group's Contributors
    □ .data
    □ .wlLibs
    □ .wlsjsps
    ☑ META-INF
        ☑ services
            ☑ oracle.wcps.conductor.provider.IFunctionProvider
            □ readme.txt
        ☑ adfm.xml
        ☑ pagetemplate-metadata.xml
    ☑ oracle
    ☑ portal
    ☑ providers
        ☑ data
        ☑ function
            ☑ FormatNumberProvider.java
            □ package.html
        □ package.html
    ☑ resources
        ☑ Providers.properties
        □ package.html
```

10. Click **OK**, and then **OK** in the Project Properties dialog.

11. Save your project.

68.5.5 Create a JAR File

After the JAR deployment profile is set, you are ready to generate a JAR file from your project.

1. Right-click the project (in this case, the Portal project) in the Application Navigator and select **Deploy**.
2. Select the JAR file you want to deploy. This is the name you gave the file in Section 68.5.4, "Set Up the JAR File Structure."
3. In the Deployment Action dialog, select **Deploy to JAR** file and click **Finish**.

The JAR file is placed in your project directory. You can view it on the file system in: `<Workspace_Directory>/Portal/deploy`. For example, if your Workspace is called MyProviders, you might find the JAR here: `C:\JDeveloper\mywork\MyProviders\Portal\deploy`.

68.5.6 Copy the JAR File to the Server

You must copy the JAR file to the server.

1. Copy the JAR file that you created in the previous step. As noted previously, the file is located in `<Workspace_Directory\Portal\deploy`.
2. Paste the JAR file into the following location on the server:

```
DOMAIN_HOME/conductor-extensions-library/WEB-INF/lib
```

For example, for an Integrated WebLogic Server environment:

```
C:\JDeveloper\system11.1.7.40.63.82\DefaultDomain\conductor-extensions-
library\WEB-INF\lib
```

Or, in a managed server environment:

```
ORACLE_HOME/oracle/user_projects/applications/wc_
domain/conductor-extensions-library/WEB-INF/lib
```

3. Restart the server.

68.5.7 Test the Deployment

To test the deployment, simply verify that the custom data provider shows up in the UI or that you can discover it through the REST API. For details, see Section 68.3, "Discovering Function Providers."

If you're unable to discover the deployed function provider, then go back over your steps and carefully check that there are no obvious errors, like configuration or resource file misspellings. Be sure that you created your JAR file properly as described in Section 68.5.4, "Set Up the JAR File Structure." Also, be sure you copied the JAR file to the correct domain.

These are common mistakes to double-check for:

- The META-INF/services contents must be included in the JAR file
- The JAR file must be copied to your DOMAIN_HOME/conductor-extensions/WEB-INF/lib folder. You must restart the server after copying the file.

68.6 Calling a Function Provider in a Scenario

The scenario editor allows you to call function providers wherever you can perform an operation on a variable, like when you set a variable, create a return statement, create an input parameter to a data provider, or set up a conditional branch statement.

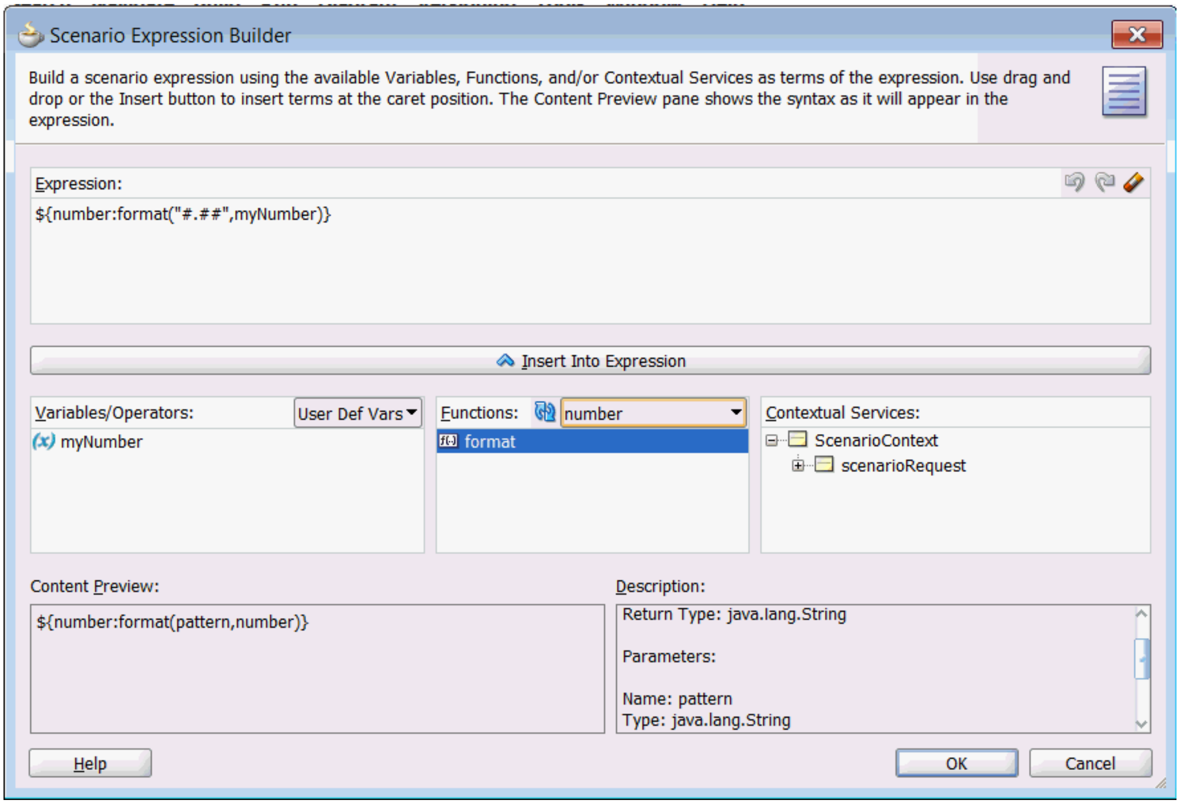
You always call a function provider from within the Expression Builder dialog. This dialog lets you select a function provider and select the specific method you wish to execute. If the provider takes input parameters, you must specify them in an Expression Language (EL) statement. An EL statement is automatically generated for you when you select your method, and all you need to do then is select or type in the appropriate variables.

For example, let's look at our example function provider, NumberFormatProvider (listed in Example 68–1).

The provider class had an annotation called "prefix." In our example, this annotation was set to the value "number." In the Expression Builder dialog, you can see that a provider called "number" appears in the drop down list of function providers. Figure 68–9 shows our example function provider called "number" is selected in the Functions drop down list. Under "number" is a list of methods in the provider. Our example contains just one method, called "format". Recall that "format" was provided in the method's `functionName` annotation.

Note: Prefix names and variables must not contain hyphens or spaces. If hyphens or spaces appear in the prefix names or variables, they cannot be referenced by Expression Language expressions.

Figure 68–9 Scenario Expression Builder Dialog



Build a scenario expression using the available Variables, Functions, and/or Contextual Services as terms of the expression. Use drag and drop or the Insert button to insert terms at the caret position. The Content Preview pane shows the syntax as it will appear in the expression.

Expression:

```
${number:format("#.##",myNumber)}
```

Variables/Operators: User Def Vars

Functions: number

Contextual Services:

Content Preview:

```
${number:format(pattern,number)}
```

Description:

Return Type: java.lang.String

Parameters:

Name: pattern
Type: java.lang.String

The Expression field in the dialog is automatically filled in with the EL statement that allows you to pass variables to the function provider. The expression is:

```
${number:format(format,myNumber)}
```

To parse the expression:

- **numbers** – The name of the function provider as provided in the function provider class annotation.
- **format** – The name of the method, as provided in the method's annotation.
- **pattern** – The name of the first parameter, as provided in the method's annotation. In this case, the parameter is of type String, as indicated in the Description. As you can see in the function parameter's implementation, this string is a pattern that represents how you want the number to be formatted. This parameter comes from the Java class DecimalNumber. For more information, refer to the Javadoc for that class.
- **number** – The name of the second parameter, as provided in the method's annotation. In this case, the parameter is also of type String. It's just a number represented as a string.

For more information on using the scenario editor and the Expression Builder, see Chapter 66.2.2, "Authoring Personalized Scenarios in JDeveloper."

69

Function Provider Reference

This chapter discusses the set of standard, out-of-the-box function providers and their associated methods.

Function provider methods can be invoked from a Scenario to manipulate data returned by a data provider. The set of standard function providers described in this chapter are provided with WebCenter Portal out-of-the-box and perform commonly required operations upon results returned from data providers.

For information on implementing a custom function provider, see Chapter 68, "Implementing Custom Function Providers: Introduction."

Table 69–1 lists the different categories of standard function provider methods.

Table 69–1 Standard Function Provider Categories

Function Provider Category	Description
Cache Methods	Perform operations on a named cache.
Maps Methods	Create and update a Map object.
List Methods	Create and update a List object.
String Methods	Perform common String manipulations.
Date Methods	Create and operate upon Date objects.
System Methods	Perform print operations.
Collections Methods	Create, update, and transform Collections objects.
Security Methods	Determines if a user is in a specified role.
CMIS Methods	Supports the CMIS provider.
Activity Graph Methods	Supports the Activity Graph provider.
Security Methods	Lets you get information about users and roles.

Cache Methods

Perform operations on a named Oracle Coherence cache object.

Table 69–2 Cache Methods

Use this method...	To...
getCache	Return a named cache using the entry in the specified cache configuration file.
get	Return the value for the address key in a named cache.
clear	Clear a named cache.
getCustomCache	Gets the custom cache configured in wcps-dataprovider-cache-config.xml.
getLargeCache	Gets a large cache configured in `wcps-dataprovider-cache-config.xml`.
getMediumCache	Gets a medium cache configured in `wcps-dataprovider-cache-config.xml`.
getSmallCache	Gets a medium cache configured in `wcps-dataprovider-cache-config.xml`.
put	Puts an value into a named cache.

getCache

Returns a named cache using the entry in the specified cache configuration file.

Arguments

cacheConfigFile
(String) The name of a cache configuration XML file. For custom function providers, this configuration file must be in the application classpath. Otherwise, it can be anywhere in the classpath of the caller.

cacheName
(String) The name of the cache returned by this method.

Expression Language Format

```
${cache:getCache(configFile,cacheName)}
```

Returns

```
com.tangosol.net.NamedCache
```

Example

```
${cache:getCache('my-config.xml','mycache')}
```

Usage Notes

None.

get

Returns the value to which the cache maps the specified key.

Arguments

cacheName
(com.tangosol.net.NamedCache) A cache object.

key
(Object) The key to the address value in the named cache.

Expression Language Format

```
${cache:getCache(cache, key)}
```

Returns

(Object) The value to which the cache maps the specified key.

Example

```
${cache:get(mycache, aKey)}
```

Usage Notes

None.

clear

Clears the named cache.

Arguments

cacheName
(com.tangosol.net.NamedCache) A cache object.

Expression Language Format

```
${cache:getCache(cacheName)}
```

Example

```
${cache:clear(aCache)}
```

Usage Notes

None.

getCustomCache

Gets the custom cache configured in wcps-dataprovider-cache-config.xml.

Arguments

cacheName
(String) The name of a cache configured in wcps-dataprovider-cache-config.xml.

Expression Language Format

```
${cache:getCache("cacheName")}
```

(Object) The value to which the cache maps the specified key.

Returns

(com.tangosol.net.NamedCache) A cache object.

Example

```
${cache:clear("aCache")}
```

Usage Notes

None.

getLargeCache

Gets a large cache configured in `wcps-dataprovider-cache-config.xml`. The default cache parameters are:

- 10000 entries
- 1 hour TTL

Arguments

cacheName
(String) The name of a large cache configured in `wcps-dataprovider-cache-config.xml`.

Expression Language Format

```
${cache:getLargeCache("cacheName")}
```

Returns

(com.tangosol.net.NamedCache) A cache object named `wcps-dp-large-<cacheName>`.

Example

```
${cache:getLargeCache("aLargeCache")}
```

Usage Notes

None.

getMediumCache

Gets a medium cache configured in `wcps-dataprovider-cache-config.xml`. The default cache parameters are:

- 1000 entries
- 1 hour TTL

Arguments

cacheName
(String) The name of a medium cache configured in `wcps-dataprovider-cache-config.xml`.

Expression Language Format

```
${cache:getMediumCache("cacheName")}
```

Returns

(com.tangosol.net.NamedCache) A cache object named `wcps-dp-medium-<cacheName>`.

Example

```
${cache:getMediumCache("aMediumCache")}
```

Usage Notes

None.

getSmallCache

Gets a small cache configured in `wcps-dataprovider-cache-config.xml`. The default cache parameters are:

- 100 entries
- 1 hour TTL

Arguments

cacheName
(String) The name of a small cache configured in `wcps-dataprovider-cache-config.xml`.

Expression Language Format

```
${cache:getSmallCache("cacheName")}
```

Returns

(com.tangosol.net.NamedCache) A cache object named `wcps-dp-small-<cacheName>`.

Example

```
${cache:getSmallCache("aSmallCache")}
```

Usage Notes

None.

put

Puts an value into a named cache.

Arguments

cache
(com.tangosol.net.NamedCache) A cache object.

key
(java.lang.Object) A key to identify the saved object.

value
(java.lang.Object) An object to cache.

Expression Language Format

```
${cache:put(aCache, aKey, aValue)}
```

Returns

void

Example

```
${cache:put(myCache, myKey, myValue)}
```

Usage Notes

None.

Maps Methods

Utility methods that operate on Map objects.

Table 69–3 Maps Methods

Use this method...	To...
new	Create and return a new HashMap object.
put	Puts an entry in an existing map of key/value pairs.
size	Returns the number of entries in a Map.
keyset	Returns a collection of the keys in the Map.
values	Returns a collection of the values in a Map object.
get	Return a value from a Map object that is associated with a key.

new

Create and return a new HashMap object.

Arguments

None.

Expression Language Format

```
${maps:new()}
```

Returns

```
java.util.HashMap
```

Example

```
${maps:new()}
```

Usage Notes

None.

put

Puts an entry in an existing map of key/value pairs.

Arguments

map
The name of the HashMap.

key
A key object.

value
A value mapped to the key.

Expression Language Format

```
${maps:put(map,key,value)}
```

Returns

Returns the new Map object (java.util.Map).

Example

```
${maps:put(existingMap, keyObj, aValue)}
```

Usage Notes

None.

size

Returns the number of entries in a Map.

Arguments

map
(java.util.Map) A map object.

Expression Language Format

```
${maps:size(aMap)}
```

Returns

```
int
```

Example

```
${maps:size(aMap)}
```

Usage Notes

None.

keyset

Returns a collection of the keys in the Map.

Arguments

map
(java.util.Map) A Map object.

Expression Language Format

```
${maps:put(map)}
```

Returns

```
java.util.Set
```

Example

```
${maps:keyset(aMap)}
```

Usage Notes

None.

values

Returns a collection of the values in a Map object.

Arguments

map
(java.util.Map) A Map object.

key
(java.lang.Object) A key object.

value
(<V>) A value mapped to the key.

Expression Language Format

```
${maps:values(map)}
```

Returns

```
java.util.Collection
```

Example

```
${maps:values(aMap)}
```

Usage Notes

None.

get

Return a value from a Map object that is associated with a key.

Arguments

map
(java.util.Map) A Map object.

key
(java.lang.Object) A key object.

Expression Language Format

```
${maps:put(map,key)}
```

Returns

A value of type <V>.

Example

```
${maps:put(aMap, aKey)}
```

Usage Notes

None.

withEntries

Creates a HashMap populated with the given key/value pairs.

Arguments

key – (String) A key.

value – (String) A value.

Expression Language Format

```
${maps:withEntries(keyvaluepairs)}
```

Returns

```
java.util.Map
```

Usage Notes

None.

List Methods

Constructs and adds to a List of objects.

Table 69–4 List Methods

Use this method...	To...
new	Create and return a new ArrayList object.
add	Adds an object to a List.
size	Returns the number of elements in a List object.

new

Create and return a new ArrayList object.

Arguments

None.

Expression Language Format

```
${list:new()}
```

Returns

```
java.util.ArrayList
```

Example

```
${list:new()}
```

Usage Notes

None.

add

Adds an object to a List.

Arguments

list
(java.util.List) An object of type List.

value
(java.lang.Object) A value to add to the List.

Expression Language Format

```
${list:add(list,value)}
```

Returns

```
java.lang.Boolean
```

Example

```
${list.add(existingList, aValue)}
```

Usage Notes

None.

size

Returns the number of elements in a List object.

Arguments

list
(java.util.List) A List object.

Expression Language Format

```
${list:size(list)}
```

Returns

```
int
```

Example

```
${list:size(mylist)}
```

Usage Notes

None.

String Methods

Performs basic utility functions on strings.

Table 69–5 String Methods

Use this method...	To...
concat	Concatenates two strings and returns a new String object.
contains	Returns true if this string contains the specified string.
indexOf	Returns the index within this string of the first occurrence of the specified substring.
join	Join together String objects in a given Collection, separating them by a specified delimiter, and returning a new String.
replaceAll	Replaces each substring of this string that matches the given regular expression with the given replacement string.
split	Splits this string around matches of the given regular expression.
startsWith	Tests if this string starts with the specified prefix.
endsWith	Tests if this string ends with the specified prefix.
substring	Returns a new string that is a substring of this string.

concat

Concatenates two strings and returns a new String object.

Arguments

stringA
(java.lang.String) The String to concatenate to.

stringB
(java.lang.String) The String to concatenate onto the end of stringA.

Expression Language Format

```
${string:concat(stringA,stringB)}
```

Returns

```
java.lang.String
```

Example

```
${cache:getCache("Hello, ","world!")}
```

Usage Notes

None.

contains

Returns true if this string contains the specified string.

Arguments

string
(java.lang.String) The String to search.

containsString
(java.lang.String) A string to search for.

Expression Language Format

```
${string:contains(string,containsString)}
```

Returns

```
java.lang.Boolean
```

Example

```
${cache:getCache("the quick brown fox","fox")}
```

Usage Notes

None.

indexOf

Returns the index within this string of the first occurrence of the specified substring.

Arguments

string
(java.lang.String) A string to search for a substring.

substring
(java.lang.String) The substring to search for.

Expression Language Format

```
${string:indexOf(string,substring)}
```

Returns

```
int
```

Example

```
${cache:getCache("the quick brown fox", "quick")}
```

Usage Notes

None.

join

Join together String objects in a given Collection, separating them by a specified delimiter, and returning a new String.

Arguments

collection
A Collection object containing strings.

delimiter
A string token used to split the input string values.

Expression Language Format

```
${string:join(collection,delimiter)}
```

Returns

```
java.lang.String
```

Example

```
${cache:getCache(aCollection,', ')}
```

Usage Notes

None.

replaceAll

Replaces each substring of this string that matches the given regular expression with the given replacement string.

Arguments

string
The original String object.

regex
A regular expression used to identify sub-strings.

replacementString
A String to replace the original String input variable.

Expression Language Format

```
${string:replaceAll(string,regex,replacementString)}
```

Returns

```
java.lang.String
```

Example

```
${cache:getCache("SomeSimpleString, "Simple", "Complex")}
```

Usage Notes

None.

split

Splits this string around matches of the given regular expression.

Arguments

string
A String object to split.

splitToken
A token String used to split the input String parameter.

Expression Language Format

```
${string:split(string,splitToken)}
```

Returns

```
java.lang.String
```

Example

```
${cache:getCache("one, two, three"), ",")}
```

Usage Notes

None.

startsWith

Tests if this string starts with the specified prefix.

Arguments

string
The String to test.

start
The test string.

Expression Language Format

```
${string:startsWith(string,start)}
```

Returns

(java.lang.Boolean) Returns true if the input string starts with the test string.

Example

```
${cache:getCache("BeginString", "Begin")}
```

Usage Notes

None.

endsWith

Tests if this string ends with the specified prefix.

Arguments

string
The String to test.

start
The test string.

Expression Language Format

```
${string:startsWith(string,end)}
```

Returns

(java.lang.Boolean) Returns true if the input string starts with the test string.

Example

```
${cache:getCache("StringEnd", "End")}
```

Usage Notes

None.

substring

Returns a new string that is a substring of this string.

Arguments

inputString
The String subset.

startIndex
The beginning index, inclusive.

endIndex
The ending index, inclusive.

Expression Language Format

```
${string:startsWith(string,end)}
```

Returns

(java.lang.Boolean) Returns true if the input string starts with the test string.

Example

```
${cache:getCache("The quick brown fox", 1, 10)}
```

Usage Notes

None.

Date Methods

Utility methods for handling Date objects.

Table 69–6 Date Methods

Use this method...	To...
after	Tests if this date is after the specified date.
before	Tests if this date is after the specified date.
diffDates	Returns the difference between two dates (date1 – date2) by the specified unit of measure.
diffFromNow	Returns the difference between today's date and the specified date, by the specified unit of measure.
format	Formats the provided date with the specified format string.
new	Returns a new date with the current date/time.

after

Tests if this date is after the specified date.

Arguments

date1
(java.util.Date) The first date to test.

date2
(java.util.Date) The second date to test.

Expression Language Format

```
${date:after(date1,date2)}
```

Returns

(java.lang.Boolean) Returns true if the second date is after the first date.

Example

```
${date:after(aDate, bDate)}
```

Usage Notes

None.

before

Tests if this date is before the specified date.

Arguments

date1
(java.util.Date) The first date to test.

date2
(java.util.Date) The second date to test.

Expression Language Format

```
${date:after(date1,date2)}
```

Returns

(java.lang.Boolean) Returns true if the second date is before the first date.

Example

```
${date:before(aDate, bDate)}
```

Usage Notes

None.

diffDates

Returns the difference between two dates (date1 – date2) by the specified unit of measure.

Arguments

date1
The first Date to test.

date
The second Date to test.

units
(String) Valid units are:

Table 69–7 Valid Values for the units Parameter

Unit	Description
y	Year
M	Month of Year
w	Week of Year
d	Day of Year
m	Minutes
s	Seconds
l	Milliseconds

Expression Language Format

```
${date:diffDates(date1,date2,units)}
```

Returns

(int) The calculated difference between the two dates, as specified by the input units. For example, if the input units is "y", the result will be the number of years separating the two dates.

Example

```
${date:diffDates(aDate, bDate, "M")}
```

Usage Notes

None.

diffFromNow

Returns the difference between today's date and the specified date, by the specified unit of measure.

Arguments

date1
(java.util.Date) The Date to test.

units
(String) Valid units are:

Table 69–8 Valid Values for the units Parameter

Unit	Description
y	Year
M	Month of Year
w	Week of Year
d	Day of Year
m	Minutes
s	Seconds
l	Milliseconds

Expression Language Format

```
${date:diffFromNow(date1,date2,units)}
```

Returns

(int) The calculated difference between the two dates, as specified by the input units. For example, if the input units is "y", the result will be the number of years separating the two dates.

Example

```
${date:diffFromNow(aDate, bDate, "M")}
```

Usage Notes

None.

format

Formats the provided date with the specified format string.

Arguments

date
(java.util.Date) The Date object to format.

pattern
The Date pattern to format the date with.

Expression Language Format

```
${date:format(date,pattern)}
```

Returns

```
java.lang.String
```

Example

```
${date:format(aDate, "yyyy-MM-dd")}
```

Usage Notes

None.

new

Returns a new date with the current date/time.

Arguments

None.

Expression Language Format

```
${date:new()}
```

Returns

```
java.lang.Date
```

Example

```
${date:new()}
```

Usage Notes

None.

System Methods

Provides standard print methods.

Table 69–9 System Methods

Use this method...	To...
print	Print an object to either standard error output or the standard console.
println	Print an object to either standard error output or the standard console with a newline.

print

Prints an object.

Arguments

stream
(String) Specify `err` to print to the standard error output stream or `out` to print to the standard console.

object
(java.lang.Object) The Object to print.

Expression Language Format

```
${system:print(stream,object)}
```

Returns

```
void
```

Example

```
${cache:getCache("err", "Hello, world!")}
```

Usage Notes

Output goes to the WC_Utilities.out file for the "out" option and WC_Utilities.err file for the "err" option. These files are located in the server domain directory.

println

Prints an object with a newline.

Arguments

stream
(String) Specify `err` to print to the standard error output stream or `out` to print to the standard console.

object
(java.lang.Object) The Object to print.

Expression Language Format

```
${system:println(stream,object)}
```

Returns

```
void
```

Example

```
${cache:println("out", "Hello, world!")}
```

Usage Notes

Output goes to the WC_Utilities.out file for the "out" option and WC_Utilities.err file for the "err" option. These files are located in the server domain directory.

Security Methods

Let's you discover information about users and roles.

Table 69–10 Security Methods

Use this method...	To...
getUserRoles	Returns an array of roles/groups that is part of the current subject.
isUserInRole	Determines if the current user is a member of the specified role or group name.

getUserRoles

Returns an array of roles/groups that is part of the current subject.

Arguments

None.

Expression Language Format

```
${security:getUserRoles()}
```

Returns

```
java.util.List
```

Example

```
${security:getUserRoles()}
```

Usage Notes

None.

isUserInRole

Determines if the current user is a member in the specified role or group name.

Arguments

role
(String) The name of a role or group.

Expression Language Format

```
${security:isUserInRole(role)}
```

Returns

```
Boolean
```

Example

```
${security:isUserInRole("Moderator")}
```

Usage Notes

None.

Collections Methods

Perform operations on Collections objects.

Table 69–11 Collections Methods

Use this method...	To...
append	
fromArray	
size	
sort	Appends an object to a collection of objects.
toArray	Returns an array of Objects from a collection.
fromArray	Returns a List object populated with objects from an array of Objects.
size	Determines the size of a collection. If the collection is null, zero is returned.
sort	Sorts the specified list into ascending order, according to the natural ordering of its elements.
new	Returns a new Collection object.

append

Appends an object to a collection of objects.

Arguments

collection
(java.util.Collection) A Collection Object.

item
(java.lang.Object) An Object to append to the Collection.

Expression Language Format

```
${collections:append(collection,item)}
```

Returns

```
java.util.Collection
```

Example

```
${collections:append(aCollection, anObject)}
```

Usage Notes

None.

toArray

Returns an array of Objects from a collection.

Arguments

collection
(java.util.Collection) A Collection object to turn into an array of Objects.

Expression Language Format

```
${collections:toArray(collection)}
```

Returns

```
java.lang.Object
```

Example

```
${cache:getCache(aCollection)}
```

Usage Notes

None.

fromArray

Returns a List object populated with objects from an array of Objects.

Arguments

array
(java.lang.Object[]) An array of Objects.

Expression Language Format

```
${collections:fromArray(array)}
```

Returns

```
java.util.Collection
```

Example

```
${collections:fromArray(anArray)}
```

Usage Notes

None.

size

Determines the size of a collection. If the collection is null, zero is returned.

Arguments

collection
(java.util.Collection) A Collection object.

Expression Language Format

```
${collections:size(collection)}
```

Returns

```
long
```

Example

```
${collections:size(aCollection)}
```

Usage Notes

None.

sort

Sorts the specified list into ascending order, according to the natural ordering of its elements.

Arguments

list
(java.util.List) A List object to sort.

Expression Language Format

```
${collections:sort(list)}
```

Returns

```
void
```

Example

```
${collections:sort(myList)}
```

Usage Notes

None.

new

Returns a new Collection object.

Arguments

None.

Expression Language Format

```
${collections:new()}
```

Returns

```
java.lang.Collection
```

Example

```
${collections:new()}
```

Usage Notes

None.

Activity Graph Methods

Perform operations on Activity Graphs.

Table 69–12 Activity Graph Methods

Use this method...	To...
filterRecsByScore	Filter out Recommendations whose score is >= the input score.
getCMISLinksFromCommonItems	Return a List of URLs representing the common items as CMIS objects.
getCMISLinksFromRecommendations	Return a List of URLs representing the CMIS objects.
getContentIDs	Extract content IDs from input objects. Includes content of all types (WC.document, WC.wiki).
getContentIDsExclude	Extract content IDs from input objects.
getContentIDsFiltered	Extract content IDs from input objects.

filterRecsByScore

Filter out Recommendations whose score is >= the input score.

Return only those Recommendations that are equal to or above the cutoffScore.

Arguments

recommendations
(java.util.Collection) A Collection Object.

cutoffScore
(float) The cutoff score.

Expression Language Format

```
${agfunction:filterRecsByScore(recommendations,cutoffScore)}
```

Returns

```
oracle.wcps.activity.agrest.spy.jaxb.Recommendations
```

Usage Notes

None.

getCMISLinksFromCommonItems

Return a List of clickable URLs representing the actual content item in common items as CMIS objects.

Arguments

results
(oracle.wcps.activity.agrest.spy.jaxb.Results)

Expression Language Format

```
${agfunction:getCMISLinksFromCommonItems(results)}
```

Returns

```
java.util.List
```

Usage Notes

None.

getCMISLinksFromRecommendations

Return a List of clickable URLs representing actual content item in the recommendations.

Arguments

recommendation
(oracle.wcps.activity.agrest.spy.jaxb.Recommendations)

Expression Language Format

```
${agfunction:getCMISLinksFromRecommendations(recommendations)}
```

Returns

```
java.util.List
```

Usage Notes

None.

getContentIDs

Extract content IDs from input objects. Includes content of all types (WC.document, WC.wiki).

Returns the short-version content identifier from the Recommendations results. The parameter 'agResults' can be one of:

- Recommendations
- RecommendedItems
- List<Recommendation>

Arguments

agResults
(java.lang.Object)

Expression Language Format

```
${agfunction:getContentIDs(agResults)}
```

Returns

```
java.util.List
```

Usage Notes

None.

getContentIDsExclude

Returns the short-version content identifier from the Recommendations results. excludes the 'excludeClassURN' from the results The parameter 'agResults' can be one of:

- Recommendations
- RecommendedItems
- List<Recommendations>

Arguments

agResults
(java.lang.Object)

Expression Language Format

```
${agfunction:getContentIDsExclude(agResults,excludeClassURN)}
```

Returns

```
java.util.List
```

Usage Notes

None.

getContentIDsFiltered

Returns the short-version content identifier from the Recommendations results. returns only those IDs corresponding to the classURN. See the nomenclature section in this blog for more details on ClassURN. The parameter 'agResults' can be one of:

- Recommendations
- RecommendedItems
- List<Recommendations>

Arguments

agResults
(java.lang.Object)

filterClassURN
(java.lang.String)

Expression Language Format

```
${agfunction:getContentIDsFiltered(agResults,filterClassURN)}
```

Returns

```
java.util.List
```

Usage Notes

None.

CMIS Methods

Perform operations on CMIS.

Table 69–13 CMIS Methods

Use this method...	To...
getCMISLinksFromCommonItems	Return a List of URLs representing the common items as CMIS objects.
getCMISLinksFromRecommendations	Return a List of URLs representing the CMIS objects.
getContentIDs	Extract content IDs from input objects. Includes content of all types (WC.document, WC.wiki).
getContentIDsExclude	Extract content IDs from input objects.
getContentIDsFiltered	Extract content IDs from input objects.
atomAsCMISObjects	ATOM feed as a List<CMISObject>.
atomAsEntries	ATOM feed as List<org.apache.abdera.model.Entry>
atomAsFeed	ATOM feed as org.apache.abdera.model.Feed
atomAsStreamUrls	ATOM feed as List<String> of URLs
getCMISQueryForDocIDs	Construct a CMIS query in the form of 'IN' query syntax that will retrieve the documents for the array of input doc IDs.
getCMISQueryForDocIDsFromFullID	Construct a CMIS query in the form of 'IN' query syntax that will retrieve the documents for the array of input doc IDs.

atomAsCMISObjects

Because CMISObject is not marshalable, use this method in your Java client code to convert the ATOM query response to List<CMISObject>.

Arguments

atomFeed
(java.lang.String) A Collection Object.

cutoffScore
(float) The cutoff score.

Expression Language Format

```
${cmisfunction:atomAsCMISObjects(atomFeed)}
```

Returns

```
java.util.List
```

Usage Notes

None.

atomAsEntries

Because org.apache.abdera.model.Entry (an attribute on an Abdera feed) is not marshalable, use this method in your Java client code to convert the ATOM query response to List<org.apache.abdera.model.Entry>.

Arguments

atomFeed
(String)

Expression Language Format

```
${cmisfunction:atomAsEntries(atomFeed)}
```

Returns

```
java.util.List
```

Usage Notes

None.

atomAsFeed

Because org.apache.abdera.model.Feed is not marshalable, use this method in your Java client code to convert the ATOM query response to List<org.apache.abdera.model.Feed>.

Arguments

atomFeed
(String)

Expression Language Format

```
${cmisfunction:atomAsFeed(atomFeed)}
```

Returns

```
java.util.List
```

Usage Notes

None.

atomAsStreamUrls

Returns an ATOM feed as List<String> of URLs.

Arguments

atomFeed
(String)

Expression Language Format

```
${agfunction:getContentIDs(agResults)}
```

Returns

```
java.util.List
```

Usage Notes

None.

getCMISQueryForDocIDs

Construct a CMIS query in the form of 'IN' query syntax that will retrieve the documents for the array of input doc IDs.

Arguments

repository
(String)

ids
(java.util.List)

Expression Language Format

```
${agfunction:getContentIDsExclude(agResults,excludeClassURN)}
```

Returns

```
String
```

Usage Notes

None.

getCMISQueryForDocIDsFromFullID

Construct a CMIS query in the form of 'IN' query syntax that will retrieve the documents for the array of input doc IDs.

This method converts a list of IDs (perhaps coming from the Activity Graph Provider) to a CMIS query string to retrieve multiple content items. The ID is in the form of a WebCenter ID, such as 'my-ucm11g#dDocName:MOUNTAINS'.

Arguments

ids
(java.util.List)

Expression Language Format

```
${cmisfunction:getCMISQueryForDocIDsFromFullID(ids)}
```

Returns

```
String
```

Usage Notes

None.

70

Using the Property Service

This chapter describes the Service Access Layer's property service, which provides a simple, scalable way for developers to access data and make it available to client applications.

This chapter includes the following topics:

- Section 70.1, "Introduction to the Property Service"
- Section 70.2, "Creating a Property Set Definition in JDeveloper"
- Section 70.3, "Deploying the Property Set Definition"
- Section 70.4, "Testing the Property Set Definition Deployment"
- Section 70.5, "Using the Property Service Data Provider"
- Section 70.6, "Using the Property Service Caching Service"
- Section 70.7, "Implementing a Custom Locator"

70.1 Introduction to the Property Service

The *property service* is a mechanism for retrieving and updating data through REST or Java APIs. The data can be stored in any data source, such as relational databases, Oracle Metadata Service (MDS) repositories, and LDAP repositories. Unlike a data provider, which fetches data into the context of a scenario (Section 67.1, "Introduction to Data Providers"), the property service can be used to fetch and update data outside the context of a scenario. In addition, the property service lets you create organized representations of data called *property sets*, each uniquely associated with a namespace. To find a property set, you simply look in its namespace using a REST request or Java method call. For information on scenarios, see Section 66.1.1, "Personalization Architecture."

> **Note:** As a convenience, WebCenter Portal provides a property service data provider that allows you to fetch data from a property set into the context of a scenario. For more information, see Section 70.5, "Using the Property Service Data Provider."

This section provides conceptual information about the property service:

- Section 70.1.1, "What Is the Property Service Used For?"
- Section 70.1.2, "What Are Property Sets?"
- Section 70.1.3, "What Is a Locator?"

- Section 70.1.4, "Caching for the Property Service"
- Section 70.1.5, "Using the Property Service with Scenarios"
- Section 70.1.6, "Architectural Overview"

70.1.1 What Is the Property Service Used For?

Many use cases for the property service and its features exist. An important use case is the ability to aggregate data from multiple sources and make the data available to scenarios. As you will see, the property service is integrated with the Conductor and scenarios through a data provider. The data provider provides access to data supplied from the property service inside the context of a scenario. For example, you could create a user profile that consists of data from several sources and then use that profile in multiple scenarios.

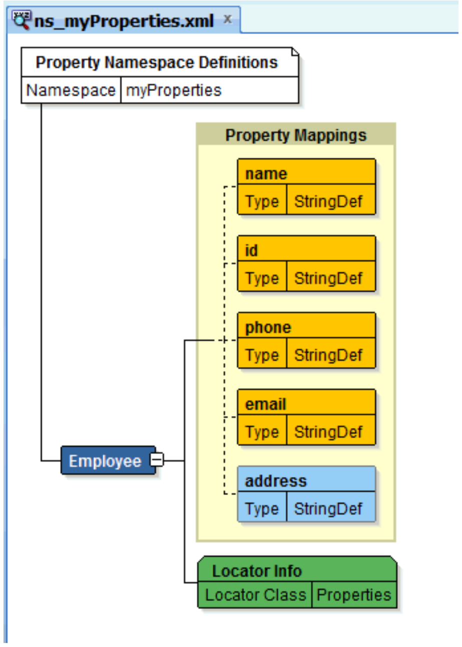
70.1.2 What Are Property Sets?

A property set is simply a collection of related properties. For example, a property set might represent a collection of books and include properties like ISBN number, title, author, number of pages, and so on.

Each property set has a schema, called a *property set definition*. This definition specifies zero or more properties (members of the set), which can have names, descriptions, and data types. Think of a property set as an instantiation of a property set definition.

Figure 70–1 shows a property set definition in the visual editor in JDeveloper. Let's look at the parts of a property set definition one by one.

Figure 70–1 Modeling a Property Set Definition in JDeveloper

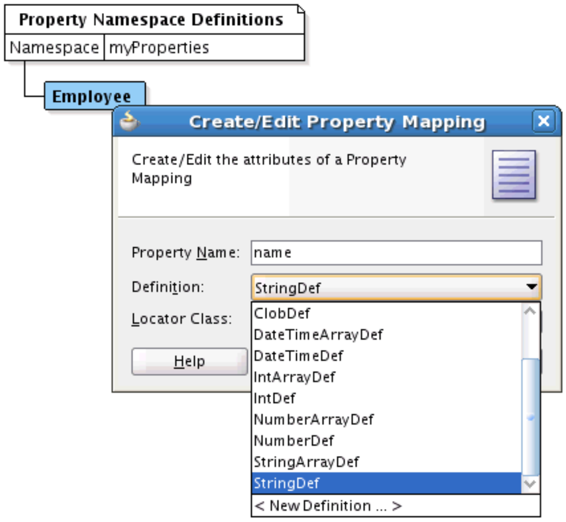


First, the property set definition is modeled as a hierarchy. The visual editor in JDeveloper makes property set definition creation easy. First, at the top of the hierarchy, a namespace element is defined. All property sets exist in the context of a namespace. You can use the namespace name to find your property set definition with REST requests or Java method calls. In Figure 70–1, the namespace is called

myProperties.

Next, the property set definition itself is created and named. In our example, the property set definition is called **Employee**. The next step is to populate the Employee property set definition with property mappings. Each property mapping has a name, a definition (like a data type), and a locator class associated with it. Figure 70–2 shows the dialog used to create a new property mapping, and the dropdown menu that lets you select a definition for the property mapping. Definitions include String, StringArray, Number, Int, DateTime, and several others. For example, a "name" property mapping might have a definition type of String. As you can see, property sets are particularly useful for modeling well-structured data such as user profiles.

Figure 70–2 Creating a Property Mapping



Property Namespace Definitions

Namespace: myProperties

Create/Edit Property Mapping

Create/Edit the attributes of a Property Mapping

Property Name: name

Definition: StringDef

Locator Class:

70.1.3 What Is a Locator?

Each property set is associated with a Java component called a *locator*. A locator is a custom implementation of the ILocator class, and includes methods for retrieving, filtering, and updating property set data. In this sense, a locator is similar to a data provider (Section 67.1, "Introduction to Data Providers").You can use the REST API (or Java API) to retrieve data directly to a client application, like a mobile application or a portal.

> **Note:** You can attach a locator class at the namespace level, the property set definition level, or at the individual property level. Locators are resolved in a specific order of precedence. Locators attached to individual properties take precedence over a property set definition-level locator, and so on. If no custom locator is specified, the default locator is used.

A default property set locator is provided with WebCenter Portal that retrieves and stores property set data to a pre-configured database. This default locator is used when no other is specified for the property set. If the default locator is insufficient for your use case, you can develop a custom locator. See also Section 70.7, "Implementing a Custom Locator."

70.1.4 Caching for the Property Service

The property service also includes an integrated caching service and an interface for writing data validation code. See Section 70.6, "Using the Property Service Caching Service."

70.1.5 Using the Property Service with Scenarios

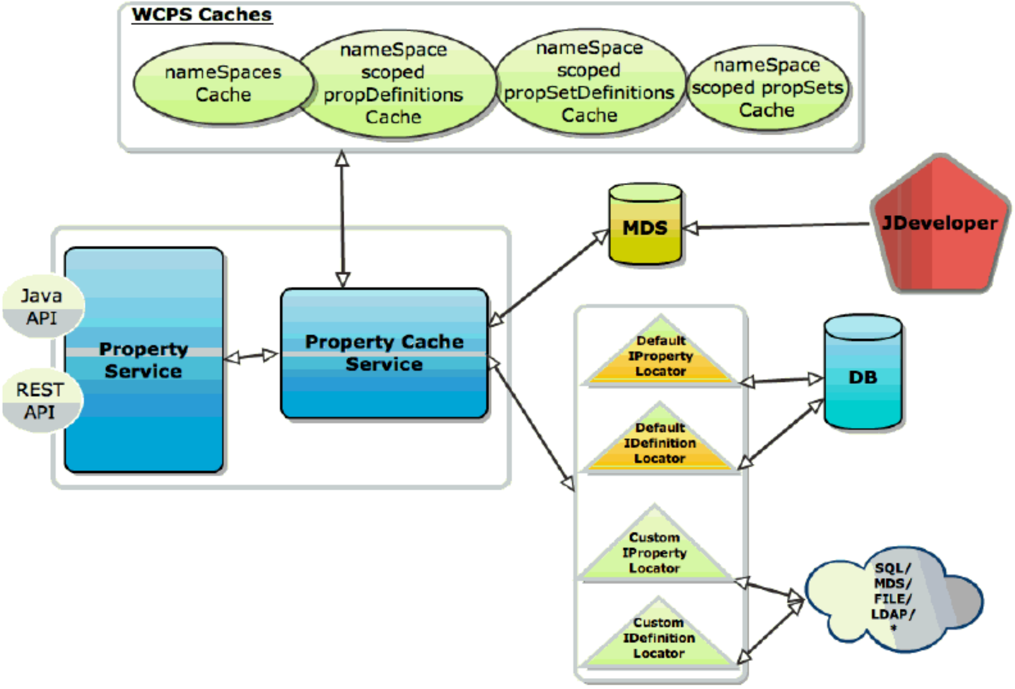
If you are not familiar with concepts like the Conductor and scenarios, refer to Chapter 66, "Personalizing Oracle WebCenter Portal Applications."

It is important to note that the property service is not directly tied to the Conductor. This means you can use the property service to retrieve and update data outside the context of a scenario. However, WebCenter Portal provides a property service data provider that lets you retrieve data from the property service into a scenario, where you can further filter and process the data, batch it with data from other scenarios, and take advantage of other data integration features, like business objects.

70.1.6 Architectural Overview

Figure 70–3 shows the overall architecture of the property service, as described in the previous sections.

Figure 70–3 Property Service Architecture


WCPS Caches
nameSpaces Cache
nameSpace scoped propDefinitions Cache
nameSpace scoped propSetDefinitions Cache
nameSpace scoped propSets Cache
MDS
JDeveloper
Java API
REST API
Property Service
Property Cache Service
Default IProperty Locator
Default IDefinition Locator
DB
Custom IProperty Locator
Custom IDefinition Locator
SQL/ MDS/ FILE/ LDAP/ *

70.2 Creating a Property Set Definition in JDeveloper

This section explains how to create a new property set definition.

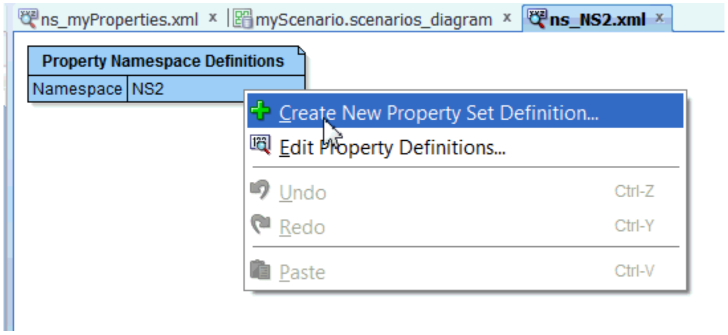
Note: Generally, it's best to create clearly defined property definitions with one or more property mappings. However, a zero-element property set definition permits property sets to be created dynamically, and may be useful in some cases.

Note: Property set definitions created in JDeveloper are imported into MDS during deployment. All property sets created at run-time that are based on those property set definitions are stored in the default database (or other persistence storage as configured through custom locators).

To create a property set definition in JDeveloper, follow these steps:

1. Be sure the data integration components are included in your project classpaths. See Section 2.5, "Setting Up JDeveloper for Personalization."
2. In the Application navigator, right-click your project and select **New**.
3. In the New Gallery dialog, under the General category, select **Personalization**.
4. In the Items part of the dialog, select **Properties Namespace** and click **OK**.
5. In the Create Properties Namespace dialog, give the namespace a name.
6. The property service editor opens in design view. Right-click the Property Namespace Definitions node and select **Create New Property Set Definition**, as shown in Figure 70–4.

Figure 70–4 Creating a New Property Set Definition


ns_myProperties.xml
myScenario.scenarios_diagram
ns_NS2.xml
Property Namespace Definitions
Namespace
NS2
Create New Property Set Definition...
Edit Property Definitions...
Undo Ctrl-Z
Redo Ctrl-Y
Paste Ctrl-V

7. In the Create New Property Set Definition dialog, enter a name and click **OK**.
8. Right-click the new property set definition node and select **Create New Property Set Definition Mapping**.

Note: This dialog lets you define individual property mappings to include in the property set definition. Note that each property mapping can have a Locator Class. The default locator class looks in the default database for property set data. To obtain data from another source, you need to implement a custom locator. For more information, see Section 70.7, "Implementing a Custom Locator."

9. In the Create/Edit Property Mapping dialog, give the property a name. Pick a Definition (like a data type) for the property. For example, a name might be type StringDef and an employee ID might be an IntDef (integer). You can also specify a Locator Class for the property. If you don't specify a Locator Class, the property uses the default Locator. See Section 70.1.3, "What Is a Locator?."
10. To create more properties, right-click the Property Set Definition node and follow these same steps.
11. Save your work.

The property set definition must next be deployed to the server, where it can be used to instantiate new property sets.

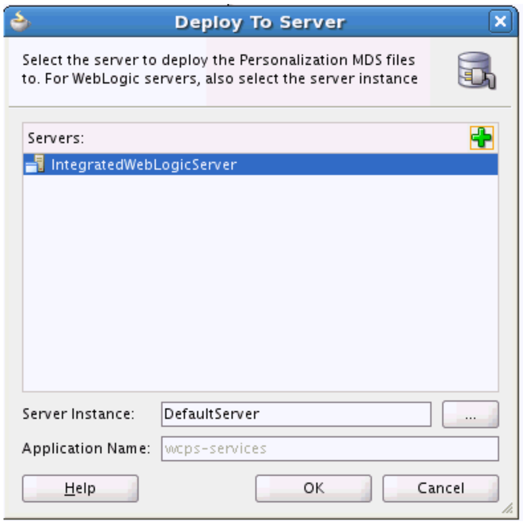
70.3 Deploying the Property Set Definition

After you create a property set definition, you need to deploy it to a server. You can do this from JDeveloper, and deploy to either the Integrated WebLogic Server or to an external managed server. After you deploy the property set definition, you can access it through REST APIs, Java APIs, or in a scenario through the property service data provider.

In this example, we will deploy to the Integrated WebLogic Server instance.

1. Create one or more property set definitions, as explained in Section 70.2, "Creating a Property Set Definition in JDeveloper."
2. Decide where you intend to deploy to. The target server must be running.
3. From the application menu, select **Deploy Personalization Files**.
4. Select the deployment target:
   - **To Last Selected Server** – Deploys to the last selected server.
   - **To Server** – This option lets you select the server to deploy to.
   - **To Filesystem** – Deploys a Metadata Archive (MAR) file to the filesystem. This file can later be deployed to the server at a later time.
5. For this example, select **To Server.**
6. In the Deploy to Server dialog, select **IntegratedWebLogicServer** and **DefaultServer** as the server instance.

Figure 70–5 The Deploy To Server Dialog



Select the server to deploy the Personalization MDS files to. For WebLogic servers, also select the server instance

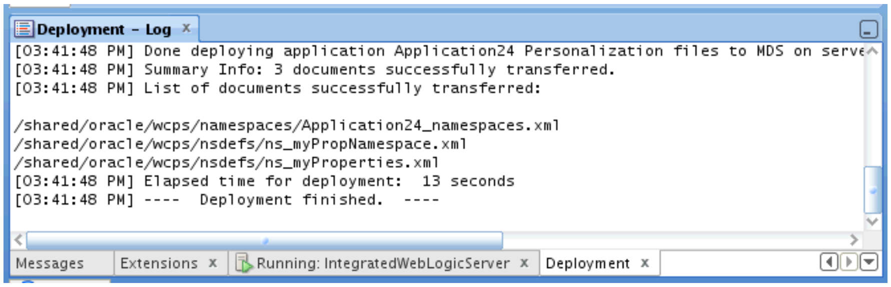
Servers:
IntegratedWebLogicServer

Server Instance: DefaultServer

Application Name: wcps-services

7. Click **OK**. JDeveloper deploys the set definition files to the server. Technically, they are placed in a Metadata Archive (MAR) file, which is then deployed to the server. You can view the results of the deployment in the Deployment Log window, as shown in Figure 70–6.

Figure 70–6 Deployment Log Window



```
[03:41:48 PM] Done deploying application Application24 Personalization files to MDS on serve
[03:41:48 PM] Summary Info: 3 documents successfully transferred.
[03:41:48 PM] List of documents successfully transferred:

/shared/oracle/wcps/namespaces/Application24_namespaces.xml
/shared/oracle/wcps/nsdefs/ns_myPropNamespace.xml
/shared/oracle/wcps/nsdefs/ns_myProperties.xml
[03:41:48 PM] Elapsed time for deployment:  13 seconds
[03:41:48 PM] ----  Deployment finished.  ----
```

Now that the property set definition is deployed, you can quickly test the deployment.

70.4 Testing the Property Set Definition Deployment

This section explores two ways that you can test the deployment of a property set definition:

- Section 70.4.1, "Locating the Property Set Definition Using REST"
- Section 70.4.2, "Locating the Property Set Definition Using the Data Provider"

70.4.1 Locating the Property Set Definition Using REST

One way to locate the property sets available to you is to use a tool that lets you send REST requests and view responses. Many such tools and browser plugins exist. For information about using REST APIs, see Chapter 53, "Using Oracle WebCenter Portal REST APIs."

1. In a REST client tool, enter this URL, where host and port are the host and port name where the WCPS server is running.

```
http://host:port/wcps/api/property/resourceIndex
```

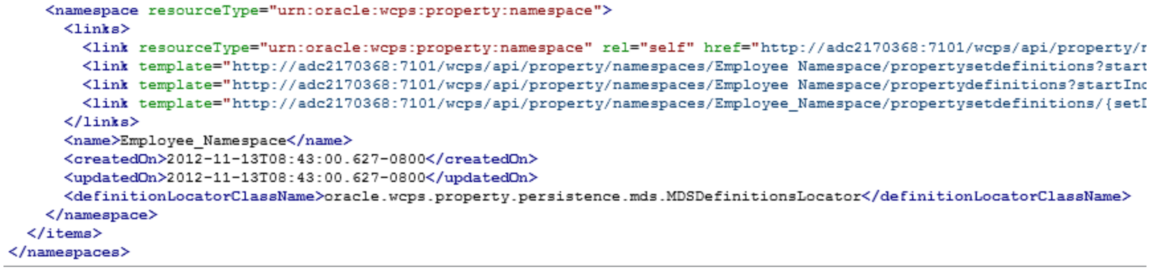
2. Locate the namespace URI and enter its URL in the browser. For example:

   ```
   http://host:port/wcps/api/conductor/namespaces
   ```

   For example: `http://myhost:7101/wcps/api/conductor/namespaces`

3. Look in the response for the property set namespace(s) you created. For example, if you created a property set namespace called `Employee_Namespace` (see Section 70.2, "Creating a Property Set Definition in JDeveloper"), the response will look similar to the response shown in Figure 70–7.

Figure 70–7 REST Response Showing the Deployed Namespace Employee_Namespace



```
    <namespace resourceType="urn:oracle:wcps:property:namespace">
      <links>
        <link resourceType="urn:oracle:wcps:property:namespace" rel="self" href="http://adc2170368:7101/wcps/api/property/r
        <link template="http://adc2170368:7101/wcps/api/property/namespaces/Employee Namespace/propertysetdefinitions?start
        <link template="http://adc2170368:7101/wcps/api/property/namespaces/Employee Namespace/propertydefinitions?startInc
        <link template="http://adc2170368:7101/wcps/api/property/namespaces/Employee_Namespace/propertysetdefinitions/{setI
      </links>
      <name>Employee_Namespace</name>
      <createdOn>2012-11-13T08:43:00.627-0800</createdOn>
      <updatedOn>2012-11-13T08:43:00.627-0800</updatedOn>
      <definitionLocatorClassName>oracle.wcps.property.persistence.mds.MDSDefinitionsLocator</definitionLocatorClassName>
    </namespace>
  </items>
</namespaces>
```

70.4.2 Locating the Property Set Definition Using the Data Provider

You can access deployed property set definitions in a scenario through the property service data provider. For details, see Section 70.5, "Using the Property Service Data Provider."

70.5 Using the Property Service Data Provider

The property service data provider (`oracle.PropertiesServiceProvider`) allows you to integrate property service data into a scenario. This provider lets you:

- retrieve property sets for a specified property set definition
- retrieve a property set by name
- return a specific property from a property set

70.5.1 Accessing the Property Service Data Provider in a Scenario

You use the property service data provider like any other provider, by selecting the Invoke Data Provider function in a scenario:

1. In the scenario editor, create a new scenario. For information on using the scenario editor, see Chapter 66.2.2, "Authoring Personalized Scenarios in JDeveloper."

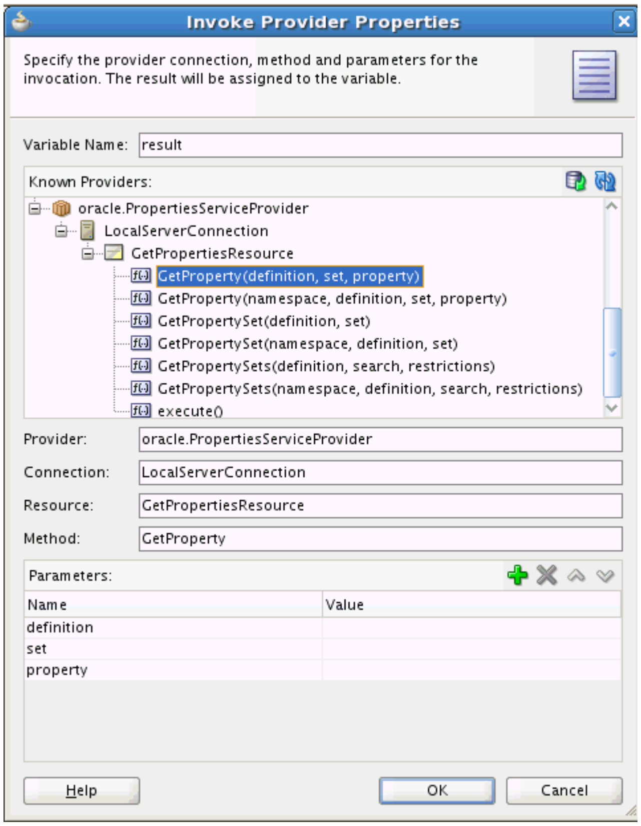
2. If asked, create a URL Connection to the server. Enter the following information in the URL Connection dialog.

Field Name	Value
Name	Conductor
URL Endpoint	http://host:port/wcps/api/conductor/resourceIndex for example: http://example.com:7101/wcps/api/conductor/resourceIndex
Authentication Type	Basic

Field Name	Value
Username	weblogic
Password	weblogic1
Realm	WCPS

3. Click the Start node and select **Add Following Statement** and then **Invoke Data Provider**.
4. Click the Invoke Provider node and select **Invoke Provider Properties**.
5. In the Invoke Provider dialog, open the **oracle.PropertiesServiceProvider** node, then open LocalServerConnection and finally open GetProperiesResource nodes. See Figure 70–8.

Figure 70–8 Exposing the Property Service Data Provider Methods



Specify the provider connection, method and parameters for the invocation. The result will be assigned to the variable.

Variable Name: result

Known Providers:

```
oracle.PropertiesServiceProvider
    LocalServerConnection
        GetPropertiesResource
            GetProperty(definition, set, property)
            GetProperty(namespace, definition, set, property)
            GetPropertySet(definition, set)
            GetPropertySet(namespace, definition, set)
            GetPropertySets(definition, search, restrictions)
            GetPropertySets(namespace, definition, search, restrictions)
            execute()
```

Provider: oracle.PropertiesServiceProvider

Connection: LocalServerConnection

Resource: GetPropertiesResource

Method: GetProperty

Parameters:

Name	Value
definition	
set	
property	

Select a method to execute and enter parameters at the bottom of the dialog. The parameters let you specify with the property set or property to retrieve. For details on the methods, see Section 70.5.2, "Property Service Data Provider Method Reference."

70.5.2 Property Service Data Provider Method Reference

This section describes each of the property service data provider methods. These methods let you gain access to property sets and their properties in a specified namespace:

- Section 70.5.2.1, "getProperty(definition, set, property)"
- Section 70.5.2.2, "getProperty(namespace, definition, set, property)"

- Section 70.5.2.3, "getPropertySet(definition, set)"
- Section 70.5.2.4, "getPropertySet(namespace, definition, set)"
- Section 70.5.2.5, "getPropertySets(definition, search, restrictions)"
- Section 70.5.2.6, "getPropertySets(namespace, definition, search, restrictions)"

70.5.2.1 getProperty(definition, set, property)

Retrieves a property from the current, default namespace.

Parameters:

- **definition** – The name of a property set definition that exists in the default namespace.
- **set** – The name of an instance of the property set definition.
- **property** – The name of the property you wish to retrieve.

Returns:

An object of the property's type. Returns null if no property is found.

Example:

getProperty("EmployeeSetDef", "kjones", "address")

70.5.2.2 getProperty(namespace, definition, set, property)

Retrieves a property from the specified namespace.

Parameters:

- **namespace** – The name of a namespace.
- **definition** – The name of a property set definition that exists in the default namespace.
- **set** – The name of an instance of the property set definition.
- **property** – The name of the property you wish to retrieve.

Returns:

An object of the property's type.

Example:

getProperty("NS1", "EmployeeSetDef", "kjones", "address")

70.5.2.3 getPropertySet(definition, set)

Retrieves a property set in the current or default namespace.

Parameters:

- **definition** – The name of a property set definition that exists in the default namespace.
- **set** – The name of an instance of the property set definition.

Returns:

A Map object containing the property set.

Example:

getPropertySet("EmployeeSetDef", "kjones")

70.5.2.4 getPropertySet(namespace, definition, set)

Retrieves a property set in the specified namespace.

Parameters:

- **namespace** – The name of a namespace.
- **definition** – The name of a property set definition that exists in the default namespace.
- **set** – The name of an instance of the property set definition.

Returns:

A Map object containing the property set.

Example:

getPropertySet("NS1", "EmployeeSetDef", "kjones")

70.5.2.5 getPropertySets(definition, search, restrictions)

Retrieves a list of property sets that are instances of the specified property set definition. The list can be managed with optional search and restrictions parameters. The method looks in the current or default namespace.

Parameters:

- **definition** – The name of a property set definition that exists in the default namespace.
- **search** – (Optional) Apply the provided search expression (a string) to retrieve the specified property sets. If null, all property sets for the provided property sets will be retrieved (within the pagination context).
- **restrictions** – (Optional) A List object specifying a list of properties. The method will only retrieve the provided in this list. If null, all properties are retrieved.

Returns:

An object of the property's type.

Example:

getProperty("EmployeeSetDef", "tmyProp:equals:someValue")

Other search string examples:

myFavoriteHobbies:contains:camping

tps-created-on:gt:1980-01-01T00:00:00.000-070

70.5.2.6 getPropertySets(namespace, definition, search, restrictions)

Retrieves a list of property sets that are instances of the specified property set definition. The list can be managed with optional search and restrictions parameters. The method looks in the specified namespace only.

Parameters:

- **namespace** – The name of a namespace.
- **definition** – The name of a property set definition that exists in the default namespace.

- **search** – (Optional) Apply the provided search expression to retrieve the specified property sets. If null, all property sets for the provided property sets will be retrieved (within the pagination context).
- **restrictions** – (Optional) A List object specifying a list of properties. The method will only retrieve the provided in this list. If null, all properties are retrieved.

Returns:

An object of the property's type.

Example:

getProperty("NS1", "EmployeeSetDef", "tmyProp:equals:someValue")

Other search string examples:

myFavoriteHobbies:contains:camping

tps-created-on:gt:1980-01-01T00:00:00.000-070

70.6 Using the Property Service Caching Service

The property service includes a built-in caching layer that automatically caches property sets when they are returned. The property service uses the Oracle Coherence, an in-memory data grid caching solution that provides fast access to frequently used data. For detailed information on configuring Oracle Coherence, see the Oracle Coherence Documentation.

The property service cache configuration file is located in:

```
$ORACLE_HOME/user_
projects/applications/<domain>/conductor-extensions-library/WEB-INF/classes.
```

You are free to modify the default cache configuration file, or add other cache configuration files if desired. All cache factories instantiated by the property service are specific to the property service classloader. The cache configuration file is located in:

```
$ORACLE_HOME/user_
projects/applications/<domain>/conductor-extensions-library/WEB-INF/classes.
```

The configurations can be changed to suit the end-user needs, but the names of the caches must remain unchanged.

70.7 Implementing a Custom Locator

Each property set is associated with a Java component called a *locator*. A locator is a custom implementation of the ILocator class, and includes methods for retrieving, filtering, and updating property set data. If the default locator is insufficient for your use case, you can develop a custom locator.

This section describes how to implement a simple custom locator, configure it, and invoke it. Even though this is a basic example, it illustrates many important aspects of custom locator development and use.

For a general introduction to locators, see Section 70.1.3, "What Is a Locator?."

- Section 70.7.1, "Overview of the Example and Prerequisites"
- Section 70.7.2, "Creating a Property Set Definition"
- Section 70.7.3, "Making Up Data: Implement a Simple Library Class"

- Section 70.7.4, "Backing the Data with a JavaBean"
- Section 70.7.5, "Implementing a Java Data Access Object"
- Section 70.7.6, "Implementing the ILocator Class"
- Section 70.7.7, "Updating the PropertySetDefinition with the Custom Locator"
- Section 70.7.8, "Compiling and Deploying the Example"
- Section 70.7.9, "Creating a Scenario to Use the Locator"
- Section 70.7.10, "Viewing the Scenario XML Source"

70.7.1 Overview of the Example and Prerequisites

Before you begin developing a custom locator in JDeveloper, be sure you have things set up properly. There are a few configurations that you need to make or verify for your environment. For details, see Section 2.5, "Setting Up JDeveloper for Personalization."

> **Note:** In this example, the locator is created in an Fusion Web Application in JDeveloper. You can also create function providers in WebCenter Portal applications or any other type of JDeveloper application that includes Java capabilities.

Our example describes how to create a locator that accesses book-related data, like author, title, and IBSN number. Here, the raw data is simply hardcoded into a Java class, but a the locator could be written similarly to access data in a database.

We also illustrate using the Data Access Object (DAO) pattern to delegate data access from the locator, a commonly used approach. Whether the data is a library of books, a user database, or an inventory system, the same pattern applies.

The main steps include:

- Define a Book property set definition.
- Let the property service know about the Book property set definition.
- Implement the IPropertyLocator interface to load properties from a Book object.

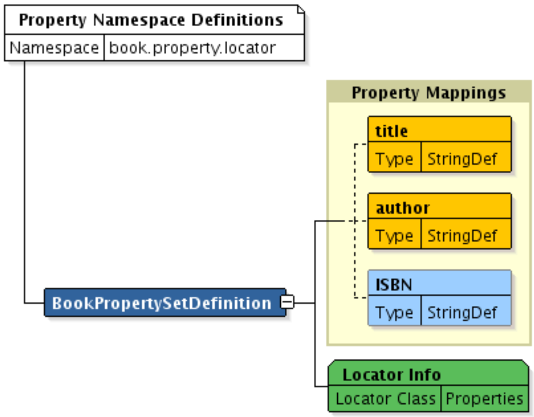
70.7.2 Creating a Property Set Definition

Following the general instructions in Section 70.2, "Creating a Property Set Definition in JDeveloper," create a new property set definition with these parts:

- Call the namespace **book.property.locator**.
- Call the property set definition **BookPropertySetDefinition**
- Add three property mappings of type StringDef called **title**, **author**, and **ISBN**.

Figure 70–9 shows this simple definition in the visual editor in JDeveloper.

Figure 70–9 Example Property Set Definition for a Book



For now, we will use the default locator class. Later, we will change the default to use our new custom locator implementation.

70.7.3 Making Up Data: Implement a Simple Library Class

The class in Example 70–1 simply creates a Map from hardcoded, static book data. The book's titles are used as the Map keys. In a real use case, data would come from an external data source, like a library database.

Example 70–1 A Class to Create Book Data

```
package locator;

import java.util.HashMap;
import java.util.Map;

class Library {
    static String [] titles = {"Into Thin Air", "Climbing Everest", "Rocky Mountains"};
    static String [] ISBNs = {"0-201-69581-2", "0-423-78123-1", "0-321-23425-2"};
    static String [] authors = {"Jon Krakauer", "Fooey Handley", "Rick Bicknell"};

    // Keyed by title
    private static Map<String, Book> library = new HashMap<String,Book>();

    static void generateLibrary() {
        for (int i=0; i<titles.length; i++)
        {
            Book book = new Book(titles[i], authors[i], ISBNs[i]);
            library.put(book.getTitle(), book);
        }
    }

   static Book getBook(String title) {
     return library.get(title);
   }
}
```

70.7.4 Backing the Data with a JavaBean

The JavaBean class in Example 70–2 represents the book attributes hardcoded into our Library class: title, author, and ISBN number. To simplify the example code, we add a getProperty(String name) method. In practice, JavaBean introspection is a better practice.

Example 70–2 A Simple JavaBean Representing Book Data

```
package locator;


public class Book
{
    String title;
    String author;
    String ISBN;

    public Book(String title, String author, String ISBN) {
      setTitle(title);
      setAuthor(author);
      setISBN(ISBN);
    }

    public void setTitle(String title) {
        this.title = title;
    }

    public String getTitle() {
        return title;
    }

    public void setAuthor(String author) {
        this.author = author;
    }

    public String getAuthor() {
        return author;
    }

    public void setISBN(String ISBN) {
        this.ISBN = ISBN;
    }

    public String getISBN() {
        return ISBN;
    }

    String getProperty(String propName) {
         if (propName.equals("ISBN")) {
           return getISBN();
         }
         if (propName.equals("title")) {
           return getTitle();
         }
         if (propName.equals("author")) {
           return getAuthor();
         }
         return null;
    }
}
```

70.7.5 Implementing a Java Data Access Object

The DAO class is more interesting than the previous classes. Here, the DAO does the hard work of fetching data from a source. In this case, the source is our Library object, but it could be a database, REST service, or other source.

Example 70–3 A Data Access Object Implementation

```
package model;

import java.util.ArrayList;
import java.util.List;
import java.util.Map;
import oracle.wcps.property.IContext;
import oracle.wcps.property.IProperty;
import oracle.wcps.property.IPropertyDefinition;
import oracle.wcps.property.IPropertyDefinitionName;
import oracle.wcps.property.IPropertyMapping;
import oracle.wcps.property.IPropertyName;
import oracle.wcps.property.IPropertyService;
import oracle.wcps.property.IPropertySet;
import oracle.wcps.property.IPropertySetDefinition;
import oracle.wcps.property.ServiceFactory;
import oracle.wcps.property.Type;
import oracle.wcps.property.model.Property;

class BookPropertyDAO {
    IPropertyService service;

    // Generate the library that will provide our backing store.
    static
    {
        Library.generateLibrary();
    }

    /**
     * Assume the name of the PropertySet is the title of the book.
     */
    void loadProperties(IPropertySet propertySet,
                        IPropertySetDefinition iPropertySetDefinition,
                        List<IPropertyName> propertyNames, IContext context) throws Exception
    {

        String title = propertySet.getName().getName();
        Book book = Library.getBook(title);
        loadProperties(book, propertySet, iPropertySetDefinition,
                       propertyNames, context);
    }

    private void loadProperties(Book book, IPropertySet propertySet,
                         IPropertySetDefinition iPropertySetDefinition,
                         List<IPropertyName> propertyNames, IContext context) throws Exception
    {
        Map<IPropertyName, IPropertyMapping> mappings =
            iPropertySetDefinition.getPropertyMappings();

        // Null propertyNames is valid, and indicates to get all properties
        if (propertyNames==null)
        {
            propertyNames = new ArrayList<IPropertyName>();
            propertyNames.addAll(mappings.keySet());
        }

        // Loop over all property names, create a Property value, and add it to the Property set
        // for (IPropertyName pname : propertyNames)
        {
            String value = book.getProperty(pname.getName());
            if (value != null)
            {
                IPropertyMapping mapping = mappings.get(pname);
                addProperty(value, pname, propertySet, mapping, context);
            }
        }
    }

    // Add typed properties according to the information in our mappings
    private void addProperty(String value, IPropertyName pname,
                             IPropertySet propertySet, IPropertyMapping mapping, IContext context)
    {
        // The property mappings could be useful if we wanted to get the individual
        //PropertyDefinitions and inspect their type.
        IPropertyDefinitionName pdefName = mapping.getPropertyDefinitionName();

        // We need the namespace to look up our property definitions
        if (service==null)
        {
            String ns = propertySet.getNamespaceName().getName();
            System.err.println("Using namespace: " + ns);
            //service = ServiceFactory.getPropertyService(IContext.NULL, ns);
            service = ServiceFactory.getPropertyService(context, ns);
        }

        IPropertyDefinition pdef =
            service.getPropertyDefinition(context, pdefName);
            //service.getPropertyDefinition(IContext.NULL, pdefName);

        Type type = pdef.getType();

        IProperty ps = Property.builder().withProperty(pname, value, type).build();

        System.err.println("Adding " + ps.getName() + " of type " + ps.getType());
        propertySet.putProperty(pname, ps);
    }
}
```

70.7.6 Implementing the ILocator Class

Finally, Example 70–4 lists the locator class itself. The first thing to notice is that we are implementing ILocator. The interface includes several methods that enable a locator to do full CRUD (create, read, update, delete) operations. However, our example only implement the loadProperties(), which corresponds to the "read" operation. For more information on this interface, you can refer to the WebCenter Portal API Reference (Javadoc).

Another important point is that the loadProperties() method delegates to the DAO. The DAO class has an identical method called loadProperties() that does the work of fetching data from the Library data store.

Example 70–4 Example Locator Class

```
package locator;

import java.util.List;

import java.util.Map;

import oracle.wcps.property.IContext;
import oracle.wcps.property.INamespaceName;
import oracle.wcps.property.IPagedList;
import oracle.wcps.property.IPropertyLocator;
import oracle.wcps.property.IPropertyMapping;
import oracle.wcps.property.IPropertyName;
import oracle.wcps.property.IPropertySet;
import oracle.wcps.property.IPropertySetDefinition;
import oracle.wcps.property.IPropertySetDefinitionName;
import oracle.wcps.property.filter.PropertySetFilterContext;
import oracle.wcps.property.filter.expression.PropertySetExpression;

public class BookPropertyLocator implements IPropertyLocator
{
    private BookPropertyDAO dao;

    // Must have a public default constructor, since the Property Service instantiates
    // this

    public BookPropertyLocator()
    {
        dao = new BookPropertyDAO();
    }

    /**
     * Load property values, optionally returning only a subset of those.
     * @param context the IContext containing parameters passed in from the PropertyService
     * @param iPropertySet The PropertySet into which the retrieved values will be loaded
     * @param iPropertySetDefinition The PropertySetDefinition defining the 'shape' of the
properties
     * @param propertyNames List of PropertyNames to load.  If null, all will be loaded.
     */
    public void loadProperties(IContext context, IPropertySet iPropertySet,
                               IPropertySetDefinition iPropertySetDefinition,
                               List<IPropertyName> propertyNames)
    {
        try

            // Delegate to BookProperDAO
            dao.loadProperties(iPropertySet, iPropertySetDefinition, propertyNames, context);
        }
        catch (Exception e) {
            throw new RuntimeException("Cannot load properties ", e);
        }
    }


    /**
     * Filter properties; load/return those properties that only match the filter criteria.
     * @param context the IContext containing parameters passed in from the PropertyService
     * @param iNamespaceName
     * @param iPropertySetDefinitionName
     * @param propertySetFilterContext
     * @return
     */
    public IPagedList<IPropertySet> filter(IContext context, INamespaceName iNamespaceName,
                                           IPropertySetDefinitionName iPropertySetDefinitionName,
                                           PropertySetFilterContext propertySetFilterContext)
    {
        return null;   //To Be Implemented
    }

    // As a read-only implementation, we don't support this
    public void storeProperties(IContext context, IPropertySet iPropertySet,
                                IPropertySetDefinition iPropertySetDefinition,
                                List<IPropertyName> list)
    {
        throw new UnsupportedOperationException("BookPropertyLocator is read-only");
    }

    // As a read-only implementation, we don't support this
    public void removeProperties(IContext context, IPropertySet iPropertySet,
                                 List<IPropertyName> list)
    {
        throw new UnsupportedOperationException("BookPropertyLocator is read-only");
    }

    // As a read-only implementation, we don't support this
    public void removeProperties(IContext context, INamespaceName iNamespaceName,
                                 IPropertySetDefinitionName iPropertySetDefinitionName)
    {
        throw new UnsupportedOperationException("BookPropertyLocator is read-only");
    }

    public int count(IContext context, INamespaceName p1, IPropertySetDefinitionName p2,
PropertySetExpression p3)
    {
        return 0;
    }
}
;
```

Let's look a the loadProperties() method of the ILocator interface in a little more detail. This method takes these parameter types:

- **IContext –** The IContext object is the vehicle for authentication. An object of this type is passed in from the property service. It includes data like the username and password credentials of the logged in user. For example, you could retrieve the user name and password like this:

  ```
  String u = context.getProperty(IContext.USERNAME_KEY);
  string p = context.getProperty(IContext.PASSWORD_KEY);
  ```

  You can also retrieve the request object and use it to obtain the credentials, or other request information:

  ```
  HttpServletRequest request = context.getProperty(IContext.HTTP_REQUEST_KEY)
  ```

- **IPropertySet –** The retrieved property set values are loaded into this object.
- **IPropertySetDefinition –** The object that defines the "shape" of the data. This shape is based on the PropertySetDefinition you created previously, in Section 70.7.2, "Creating a Property Set Definition."

- **List<IPropertyName>** – This object provides a list of PropertyName objects to load. If null, all PropertyName objects are loaded.

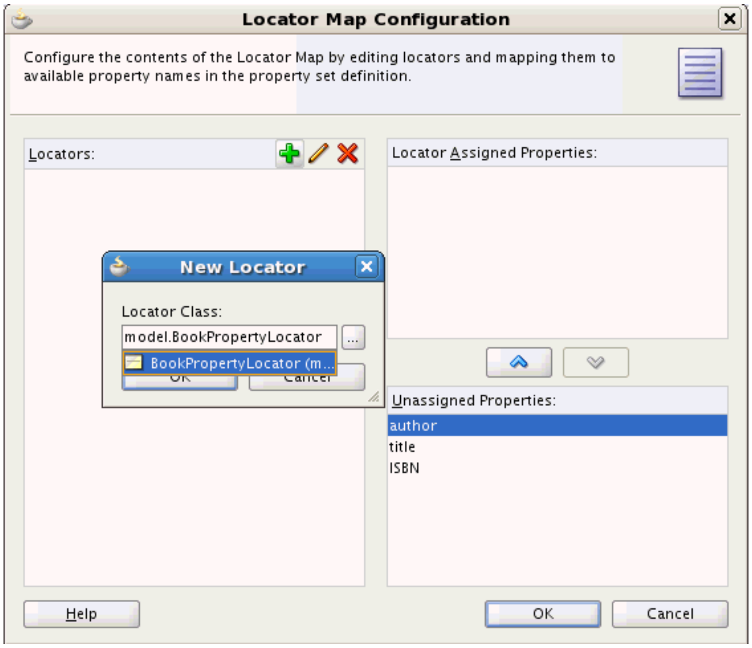
Now that the example classes are finished, we can compile, deploy, and use the locator.

70.7.7 Updating the PropertySetDefinition with the Custom Locator

When we created the property set definition previously, we used the default Locator. Now that we have implemented a custom locator, we need to add it to the definition.

1. Locate the `ns_book.property.locator.xml` file in the Resources folder of your project.
2. Right-click the Locators node in the design view and select **Edit Locator Info**.
3. Click the **Add** icon (a plus symbol) and enter BookPropertyLocator in the New Locator dialog, as shown in Figure 70–10, and click **OK**.

Figure 70–10 Adding the Custom Locator



Locator Map Configuration

Configure the contents of the Locator Map by editing locators and mapping them to available property names in the property set definition.

Locator Class: model.BookPropertyLocator

Unassigned Properties: author, title, ISBN

4. In the Locator Map Configuration dialog, add the Unassigned Properties to the Locator Assigned Properties list. When you are finished, author, title, and ISBN should be listed as assigned properties.
5. Click **OK**.
6. In the design view, you will see the custom locator now appears in the Locator Info node.
7. Save your work.

70.7.8 Compiling and Deploying the Example

Before deploying, compile your project by whatever method is customary to you. For example, in JDeveloper, you can select **Make** from the Build menu.

To deploy your property namespace definition to the server, follow the instruction in Section 70.3, "Deploying the Property Set Definition."

You also need to deploy your custom locator classes to the server, follow the steps in:

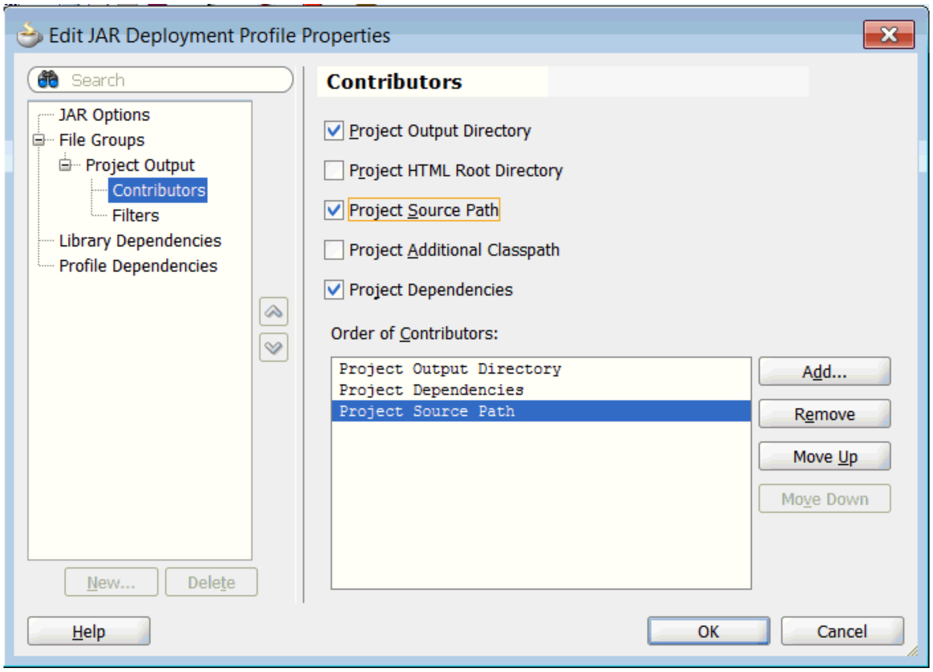
- Section 70.7.8.1, "Setting Up the JAR File Structure"
- Section 70.7.8.2, "Create a JAR File"
- Section 70.7.8.3, "Copy the JAR File to the Server"

70.7.8.1 Setting Up the JAR File Structure

If you are unfamiliar with JAR file creation in JDeveloper, this section explains how to set up your JAR file structure (a deployment profile) to ensure that all the required elements are included.

1. Right-click your project (in this example, the project called Model) in the Application Navigator and select **Project Properties**.
2. In the Project Properties dialog, select **Deployment**.
3. Click **New**.
4. Select JAR File as the Archive Type and give the JAR a name.
5. Click **OK**.
6. In the JAR Options dialog, select **Contributors**.
7. Be sure that Project Output Directory, Project Source Path, and Project Dependencies are selected, as shown in Figure 70–11.

Figure 70–11 Selecting Project Output Contributors



Edit JAR Deployment Profile Properties

Contributors

☑ Project Output Directory

☐ Project HTML Root Directory

☑ Project Source Path

☐ Project Additional Classpath

☑ Project Dependencies

Order of Contributors:

```
Project Output Directory
Project Dependencies
Project Source Path
```

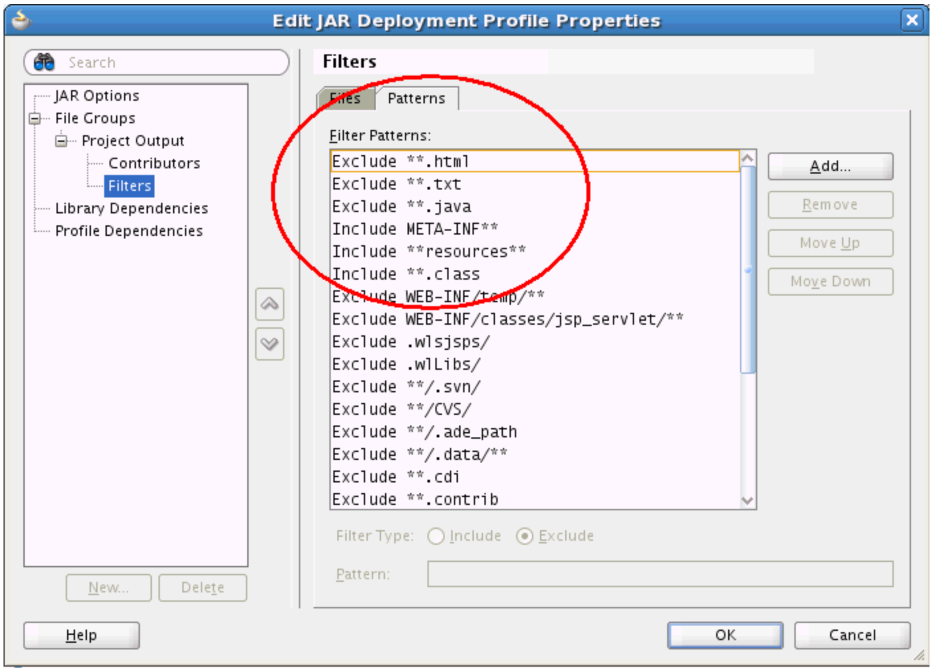
8. Select **Filters**.
9. Select the **Patterns** tab.

10. In the Patterns tab, add the following file patterns to include and exclude specific types of files from the JAR.

    Figure 70–12 shows these patterns after they have been added to the list.

    - Include `**.class`
    - Exclude `**.java`
    - Exclude `**.txt`
    - Exclude `**.html`

Figure 70–12 Selecting JAR File Contents



Filters

Filter Patterns:

```
Exclude **.html
Exclude **.txt
Exclude **.java
Include META-INF**
Include **resources**
Include **.class
Exclude WEB-INF/temp/**
Exclude WEB-INF/classes/jsp_servlet/**
Exclude .wlsjsps/
Exclude .wlLibs/
Exclude **/.svn/
Exclude **/CVS/
Exclude **/.ade_path
Exclude **/.data/**
Exclude **.cdi
Exclude **.contrib
```

Filter Type: ○ Include ● Exclude

Pattern:

11. Click **OK**, and then **OK** in the Project Properties dialog.
12. Save your project.

70.7.8.2 Create a JAR File

After the JAR deployment profile is set, you are ready to generate a JAR file from your project.

1. Right-click the project (in this case, the Model project) in the Application Navigator and select **Deploy**.
2. Select the JAR file you want to deploy. This is the name you gave the file in Section 70.7.8.1, "Setting Up the JAR File Structure."
3. In the Deployment Action dialog, select **Deploy to JAR** file and click **Finish**.

The JAR file is placed in your project directory. You can view it on the file system in: `<Workspace_Directory>/Model/deploy`. For example, if your Workspace is called MyProviders, you might find the JAR here: `C:\JDeveloper\mywork\MyProviders\Model\deploy`.

70.7.8.3 Copy the JAR File to the Server

You must copy the JAR file to the server.

1. Copy the JAR file that you created in the previous step. As noted previously, the file is located in `<Workspace_Directory\Model\deploy`.
2. Paste the JAR file into the DefaultDomain of your server, here:

   ```
   $DOMAIN_HOME/locator-extensions-library/WEB-INF/lib
   ```

   For example:

   ```
   C:\JDeveloper\system11.1.7.40.63.82\DefaultDomain\locator-extensions-li
   brary\WEB-INF\lib
   ```
3. Restart the server.

70.7.9 Creating a Scenario to Use the Locator

Follow these basic steps to create a scenario. For more information on creating scenarios, see Section 66.2.2, "Authoring Personalized Scenarios in JDeveloper."

1. Create a new scenario called BookPropertyScenario.
2. Add an Invoke Provider node to the scenario.
3. Edit the provider properties.
4. In the list of known providers, open the oracle.PropertiesServiceProvider node and drill down to the provider methods.
5. Select the GetProperty(namespace, definition, set, property) method.
6. Add the following parameter values:

Table 70–1 Parameter Values for the Locator

Parameter	Value
namespace	book.property.locator
definition	BookPropertySetDefinition
set	Into Thin Air
property	author

7. Remember to specify a return variable in the Edit Provider Properties dialog. For this example, call the variable `property`.
8. Create a return statement to return the property value. Remember, you must use expression language (EL) format for the return variable: `${property}`.
9. Save the scenario and run it.

70.7.10 Viewing the Scenario XML Source

The XML source code for the scenario created in the previous section looks like this:

```
<scenario:scenario
xmlns:common="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"
xmlns:scenario="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <body>
  <call-provider>
      <provider-name>oracle.PropertiesServiceProvider</provider-name>
      <method-name>GetProperty</method-name>
```

```
      <variable>property</variable>
      <input>
        <parameter>
            <common:name>namespace</common:name>
            <common:value>book.property.locator</common:value>
        </parameter>
        <parameter>
            <common:name>definition</common:name>
            <common:value>BookPropertySetDefinition</common:value>
        </parameter>
        <parameter>
            <common:name>set</common:name>
            <common:value>Into Thin Air</common:value>
        </parameter>
        <parameter>
            <common:name>property</common:name>
            <common:value>ISBN</common:value>
        </parameter>
      </input>
    </call-provider>
    <return>
      <expression>${property}</expression>
    </return>
  </body>
  <name>BookPropertyScenario</name>
</scenario:scenario>
```

71

Property Service REST APIs

This chapter describes the REST APIs for the property service.

This chapter includes the following topics:

- Section 71.1, "Introduction to Property Service REST APIs"
- Section 71.2, "Property Service REST APIs"

71.1 Introduction to Property Service REST APIs

This chapter provides examples of how you can use the property service's REST APIs to perform create, read, update, and delete (CRUD) operations on property sets and properties.

- Creating a namespace
- Viewing and creating property set definitions
- Viewing and creating property definitions
- Viewing, creating, and executing scenarios
- Viewing data provider details

71.2 Property Service REST APIs

This section provides examples of how you can use the property service's REST APIs to perform create, read, update, and delete (CRUD) operations on property sets and properties.

- Creating a namespace
- Viewing and creating property set definitions
- Viewing and creating property definitions
- Viewing, creating, and executing scenarios
- Viewing data provider details

This section includes the following subsections:

- Section 71.2.1, "Property Service Resource Index"
- Section 71.2.2, "Namespace CRUD"
- Section 71.2.3, "Property Definition CRUD"
- Section 71.2.4, "Property Set Definition CRUD"

- Section 71.2.5, "Property Set CRUD"
- Section 71.2.6, "Property CRUD"
- Section 71.2.7, "JSON Payload"
- Section 71.2.8, "Exceptions"
- Section 71.2.9, "Query Parameters"
- Section 71.2.10, "Search Expressions"

71.2.1 Property Service Resource Index

The property service resource index's response contains links and templates to access other resources of the property service.

71.2.1.1 ResourceIndex

This section describes the request and response for accessing the property service's resource index.

`ResourceIndex`

XML

```
Request:
GET http://localhost:8891/wcps/api/property/resourceIndex
Content-Type: application/xml
Accept: application/xml

Response:
Status Code:200
Content-Length: 3595
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=t0FKMnYDSzjRlshhs0sFX20nvnTZLQY8vnxNLkplyfYPcWgfb9y6!-1714998420;
path=/wcps; HttpOnly
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Date: Thu, 07 Oct 2010 23:31:15 GMT

<?xml version="1.0" encoding="UTF-8"?>
<resourceIndex resourceType="urn:oracle:wcps:property:resourceIndex">
  <links>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"
      href="http://localhost:8891/wcps/api/property/namespaces"
      resourceType="urn:oracle:wcps:property:namespaces"
template="http://localhost:8891/wcps/api/property/namespaces?startIndex={startInde
x}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
    <link capabilities="urn:oracle:restframework:read"
      href="http://localhost:8891/wcps/api/property/resourceIndex"
      rel="self" resourceType="urn:oracle:wcps:property:resourceIndex"/>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:namespace"
template="http://localhost:8891/wcps/api/property/namespaces/{namespaceName}"/>
```

```
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/prope
rtydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/
>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:propertydefinition"
template="http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/prope
rtydefinitions/{definitionName}"/>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/prope
rtysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage
}"/>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:propertysetdefinition"
template="http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/prope
rtysetdefinitions/{setDefinitionName}"/>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/prope
rtysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&amp;dat
aFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:propertyset"
template="http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/prope
rtysetdefinitions/{setDefinitionName}/propertysets/{propertySetName}"/>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:properties"
template="http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/prope
rtysetdefinitions/{setDefinitionName}/propertysets/{propertySetName}/properties"/>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:property"
template="http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/prope
rtysetdefinitions/{setDefinitionName}/propertysets/{propertySetName}/properties/{p
ropertyName}"/>
  </links>
</resourceIndex>
```

JSON

Request:

```
GET http://localhost:8891/wcps/api/property/resourceIndex
Content-Type: application/json
Accept: application/json
```

```
Response:
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=WFGvMnyKP7nDBW1RQynhhphbQvWLDjLSbFJj2MQ1g6nFH2VQlgJ4!-609606431;
path=/wcps; HttpOnly
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Date: Fri, 08 Oct 2010 01:24:22 GMT

{
  "resourceType" : "urn:oracle:wcps:property:resourceIndex",
  "links" : [ {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces?startIndex={startIndex}&q={q}&
itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:namespaces",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" : "http://localhost:8891/wcps/api/property/namespaces"
  }, {
    "resourceType" : "urn:oracle:wcps:property:resourceIndex",
    "capabilities" : "urn:oracle:restframework:read",
    "href" : "http://localhost:8891/wcps/api/property/resourceIndex",
    "rel" : "self"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/{namespaceName}",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/propertydefini
tions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/propertydefini
tions/{definitionName}",
    "resourceType" : "urn:oracle:wcps:property:propertydefinition",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/propertysetdef
initions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/propertysetdef
initions/{setDefinitionName}",
    "resourceType" : "urn:oracle:wcps:property:propertysetdefinition",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/propertysetdef
initions/{setDefinitionName}/propertysets?startIndex={startIndex}&dataFields={data
Fields}&q={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertysets",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/propertysetdef
initions/{setDefinitionName}/propertysets/{propertySetName}",
    "resourceType" : "urn:oracle:wcps:property:propertyset",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/propertysetdef
initions/{setDefinitionName}/propertysets/{propertySetName}/properties",
    "resourceType" : "urn:oracle:wcps:property:properties",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:delete"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/{namespaceName}/propertysetdef
initions/{setDefinitionName}/propertysets/{propertySetName}/properties/{propertyNa
me}",
    "resourceType" : "urn:oracle:wcps:property:property",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"
  } ]
}
```

71.2.2 Namespace CRUD

71.2.2.1 Create Namespace

Creating an object using the REST HTTP interface requires setting the request method to `POST` and adding a header `content-type` with the value `application/xml`. This section describes the request and response for creating a namespace using the property service.

CreateNamespace

XML

Request:

```
POST http://localhost:8891/wcps/api/property/namespaces
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=t0FKMnYDSzjRlshhs0sFX20nvnTZLQY8vnxNLkplyfYPcWgfb9y6!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
```

```
<?xml version="1.0" encoding="UTF-8"?>
<namespace resourceType="urn:oracle:wcps:property:namespace">
  <name>Oracle</name>
</namespace>
```

Response:

```
Status Code:201
Content-Length: 1671
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Location: http://localhost:8891/wcps/api/property/namespaces/Oracle
Date: Thu, 07 Oct 2010 23:31:16 GMT
ETag: "1286494276437"

<?xml version="1.0" encoding="UTF-8"?>
<namespace resourceType="urn:oracle:wcps:property:namespace">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"
      href="http://localhost:8891/wcps/api/property/namespaces/Oracle"
      rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions"
      resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdef
initions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s"
      resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefini
tions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
    <link capabilities="urn:oracle:restframework:read"
      resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdef
initions/{setDefinitionName}/propertysets?startIndex={startIndex}&amp;dataFields={
dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
  </links>
  <name>Oracle</name>
  <createdOn>2010-10-07T17:31:16.437-0600</createdOn>
  <updatedOn>2010-10-07T17:31:16.437-0600</updatedOn>
</namespace>
```

JSON

Request:

```
POST http://localhost:8891/wcps/api/property/namespaces
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
```

```
JSESSIONID=WFGvMnyKP7nDBW1RQynhhphbQvWLDjLSbFJj2MQ1g6nFH2VQlgJ4!-609606431;Version
=1
Content-Type: application/json
Accept: application/json

{
  "name" : "Oracle",
  "resourceType" : "urn:oracle:wcps:property:namespace"
}

Response:
Status Code:201
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Location: http://localhost:8891/wcps/api/property/namespaces/Oracle
Date: Fri, 08 Oct 2010 01:24:26 GMT
ETag: "1286501066698"

{
  "name" : "Oracle",
  "createdOn" : "2010-10-07T19:24:26.698-0600",
  "updatedOn" : "2010-10-07T19:24:26.698-0600",
  "resourceType" : "urn:oracle:wcps:property:namespace",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
    "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle",
    "rel" : "self"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions?
startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions?sta
rtIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
{setDefinitionName}/propertysets?startIndex={startIndex}&dataFields={dataFields}&q
={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertysets",
    "capabilities" : "urn:oracle:restframework:read"
  } ]
}
```

71.2.2.2 Retrieve Namespace

`RetrieveNamespace`

XML

```
Request:
GET http://localhost:8891/wcps/api/property/namespaces/Oracle
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=t0FKMnYDSzjRlshhs0sFX20nvnTZLQY8vnxNLkplyfYPcWgfb9y6!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

Response:
Status Code:200
Content-Length: 1759
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Date: Thu, 07 Oct 2010 23:31:16 GMT
ETag: "1286494276833"

<?xml version="1.0" encoding="UTF-8"?>
<namespace resourceType="urn:oracle:wcps:property:namespace">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"
      href="http://localhost:8891/wcps/api/property/namespaces/Oracle"
      rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions"
      resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdef
initions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s"
      resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefini
tions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
    <link capabilities="urn:oracle:restframework:read"
      resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdef
initions/{setDefinitionName}/propertysets?startIndex={startIndex}&amp;dataFields={
```

```
dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
  </links>
  <name>Oracle</name>
  <createdOn>2010-10-07T17:31:16.437-0600</createdOn>
  <updatedOn>2010-10-07T17:31:16.833-0600</updatedOn>

<propertyLocatorClassName>com.oracle.custom.MyPropertyLocator</propertyLocatorClas
sName>
</namespace>
```

JSON

Request:

```
GET http://localhost:8891/wcps/api/property/namespaces/Oracle
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=WFGvMnyKP7nDBW1RQynhhphbQvWLDjLSbFJj2MQ1g6nFH2VQlgJ4!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Date: Fri, 08 Oct 2010 01:24:26 GMT
ETag: "1286501066808"

{
  "name" : "Oracle",
  "createdOn" : "2010-10-07T19:24:26.698-0600",
  "propertyLocatorClassName" : "com.oracle.custom.MyPropertyLocator",
  "updatedOn" : "2010-10-07T19:24:26.808-0600",
  "resourceType" : "urn:oracle:wcps:property:namespace",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
    "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle",
    "rel" : "self"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions?
startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions?sta
rtIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
{setDefinitionName}/propertysets?startIndex={startIndex}&dataFields={dataFields}&q
={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertysets",
    "capabilities" : "urn:oracle:restframework:read"
  } ]
}
```

71.2.2.3 Update Namespace

UpdateNamespace

XML

Request:

```
PUT http://localhost:8891/wcps/api/property/namespaces/Oracle
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=t0FKMnYDSzjRlshhs0sFX20nvnTZLQY8vnxNLkplyfYPcWgfb9y6!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
If-Match: 1286494276437

<?xml version="1.0" encoding="UTF-8"?>
<namespace resourceType="urn:oracle:wcps:property:namespace">
  <name>Oracle</name>
  <createdOn>2010-10-07T17:31:16.437-0600</createdOn>
  <updatedOn>2010-10-07T17:31:16.437-0600</updatedOn>

<propertyLocatorClassName>com.oracle.custom.MyPropertyLocator</propertyLocatorClas
sName>
</namespace>
```

Response:

```
Status Code:200
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:16 GMT
ETag: "1286494276833"
```

JSON

Request:

```
PUT http://localhost:8891/wcps/api/property/namespaces/Oracle
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=WFGvMnyKP7nDBW1RQynhhphbQvWLDjLSbFJj2MQ1g6nFH2VQlgJ4!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
If-Match: 1286501066698
```

```
{
  "name" : "Oracle",
  "propertyLocatorClassName" : "com.oracle.custom.MyPropertyLocator",
  "createdOn" : "2010-10-07T19:24:26.698-0600",
  "updatedOn" : "2010-10-07T19:24:26.698-0600",
  "resourceType" : "urn:oracle:wcps:property:namespace"
}
```

Response:

```
Status Code:200
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:26 GMT
ETag: "1286501066808"
```

71.2.2.4 Delete Namespace

DeleteNamespace

XML

Request:

```
DELETE http://localhost:8891/wcps/api/property/namespaces/Oracle
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=t0FKMnYDSzjRlshhs0sFX20nvnTZLQY8vnxNLkplyfYPcWgfb9y6!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
If-Match: 1286494276833
```

Response:

```
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:17 GMT
```

JSON

Request:

```
DELETE http://localhost:8891/wcps/api/property/namespaces/Oracle
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=WFGvMnyKP7nDBW1RQynhhphbQvWLDjLSbFJj2MQ1g6nFH2VQlgJ4!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
If-Match: 1286501066808
```

Response:

```
Status Code:204
```

```
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:26 GMT
```

71.2.2.5 Retrieve all Namespaces

RetrieveAllNamespaces

XML

Request:

```
GET http://localhost:8891/wcps/api/property/namespaces
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=t0FKMnYDSzjRlshhs0sFX20nvnTZLQY8vnxNLkplyfYPcWgfb9y6!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
```

Response:

```
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/xml
Date: Thu, 07 Oct 2010 23:31:19 GMT

<?xml version="1.0" encoding="UTF-8"?>
<namespaces resourceType="urn:oracle:wcps:property:namespaces">
  <links>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"
      href="http://localhost:8891/wcps/api/property/namespaces"
      rel="self" resourceType="urn:oracle:wcps:property:namespaces"
template="http://localhost:8891/wcps/api/property/namespaces?startIndex={startInde
x}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces?startIndex=10&amp;itemsPe
rPage=10"
      rel="next" resourceType="urn:oracle:wcps:property:namespaces"/>
  </links>
  <itemsPerPage>10</itemsPerPage>
  <startIndex>0</startIndex>
  <totalCount>21</totalCount>
  <items>
    <namespace resourceType="urn:oracle:wcps:property:namespace">
      <links>
        <link
```

```
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/JDEV"
          rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/JDEV/propertysetdefinitio
ns"
          resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/JDEV/propertysetdefin
itions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/JDEV/propertydefinitions"
          resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/JDEV/propertydefiniti
ons?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
        <link capabilities="urn:oracle:restframework:read"
          resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/JDEV/propertysetdefin
itions/{setDefinitionName}/propertysets?startIndex={startIndex}&amp;dataFields={da
taFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
      </links>
      <name>JDEV</name>
      <createdOn>2010-10-07T17:31:20.061-0600</createdOn>
      <updatedOn>2010-10-07T17:31:20.061-0600</updatedOn>

<propertyLocatorClassName>oracle.wcps.conductor.scenario.persistence.impl.properti
es.MDSScenarioPropertyLocator</propertyLocatorClassName>

<definitionLocatorClassName>oracle.wcps.property.persistence.mds.MDSDefinitionsLoc
ator</definitionLocatorClassName>
    </namespace>
    <namespace resourceType="urn:oracle:wcps:property:namespace">
      <links>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_0"
          rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
0/propertysetdefinitions"
          resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
0/propertysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={items
PerPage}"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
0/propertydefinitions"
          resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
```

```
0/propertydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPer
Page}"/>
        <link capabilities="urn:oracle:restframework:read"
          resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
0/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
amp;dataFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
      </links>
      <name>Oracle_0</name>
      <createdOn>2010-10-07T17:31:17.318-0600</createdOn>
      <updatedOn>2010-10-07T17:31:17.318-0600</updatedOn>
    </namespace>
    <namespace resourceType="urn:oracle:wcps:property:namespace">
      <links>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_1"
          rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertysetdefinitions"
          resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={items
PerPage}"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertydefinitions"
          resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPer
Page}"/>
        <link capabilities="urn:oracle:restframework:read"
          resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
amp;dataFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
      </links>
      <name>Oracle_1</name>
      <createdOn>2010-10-07T17:31:17.568-0600</createdOn>
      <updatedOn>2010-10-07T17:31:17.568-0600</updatedOn>
    </namespace>
    <namespace resourceType="urn:oracle:wcps:property:namespace">
      <links>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_2"
          rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertysetdefinitions"
          resourceType="urn:oracle:wcps:property:propertysetdefinitions"
```

```
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={items
PerPage}"/>
    <link
     capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertydefinitions"
     resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPer
Page}"/>
    <link capabilities="urn:oracle:restframework:read"
     resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
amp;dataFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
   </links>
   <name>Oracle_2</name>
   <createdOn>2010-10-07T17:31:17.807-0600</createdOn>
   <updatedOn>2010-10-07T17:31:17.807-0600</updatedOn>
  </namespace>
  <namespace resourceType="urn:oracle:wcps:property:namespace">
   <links>
    <link
     capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_3"
     rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
    <link
     capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertysetdefinitions"
     resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={items
PerPage}"/>
    <link
     capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertydefinitions"
     resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPer
Page}"/>
    <link capabilities="urn:oracle:restframework:read"
     resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
amp;dataFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
   </links>
   <name>Oracle_3</name>
   <createdOn>2010-10-07T17:31:18.066-0600</createdOn>
   <updatedOn>2010-10-07T17:31:18.066-0600</updatedOn>
  </namespace>
  <namespace resourceType="urn:oracle:wcps:property:namespace">
   <links>
    <link
```

```
     capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_4"
     rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
    <link
     capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertysetdefinitions"
     resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={items
PerPage}"/>
    <link
     capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertydefinitions"
     resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPer
Page}"/>
    <link capabilities="urn:oracle:restframework:read"
     resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
amp;dataFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
   </links>
   <name>Oracle_4</name>
   <createdOn>2010-10-07T17:31:18.319-0600</createdOn>
   <updatedOn>2010-10-07T17:31:18.319-0600</updatedOn>
  </namespace>
  <namespace resourceType="urn:oracle:wcps:property:namespace">
   <links>
    <link
     capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_5"
     rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
    <link
     capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
5/propertysetdefinitions"
     resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
5/propertysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={items
PerPage}"/>
    <link
     capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
5/propertydefinitions"
     resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
5/propertydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPer
Page}"/>
    <link capabilities="urn:oracle:restframework:read"
     resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
```

```
5/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
amp;dataFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
      </links>
      <name>Oracle_5</name>
      <createdOn>2010-10-07T17:31:18.572-0600</createdOn>
      <updatedOn>2010-10-07T17:31:18.572-0600</updatedOn>
    </namespace>
    <namespace resourceType="urn:oracle:wcps:property:namespace">
      <links>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_6"
          rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertysetdefinitions"
          resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={items
PerPage}"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertydefinitions"
          resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPer
Page}"/>
        <link capabilities="urn:oracle:restframework:read"
          resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
amp;dataFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
      </links>
      <name>Oracle_6</name>
      <createdOn>2010-10-07T17:31:18.813-0600</createdOn>
      <updatedOn>2010-10-07T17:31:18.813-0600</updatedOn>
    </namespace>
    <namespace resourceType="urn:oracle:wcps:property:namespace">
      <links>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_7"
          rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
          href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertysetdefinitions"
          resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={items
PerPage}"/>
        <link
          capabilities="urn:oracle:restframework:create
```

```
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertydefinitions"
     resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPer
Page}"/>
    <link capabilities="urn:oracle:restframework:read"
     resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
amp;dataFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
   </links>
   <name>Oracle_7</name>
   <createdOn>2010-10-07T17:31:19.084-0600</createdOn>
   <updatedOn>2010-10-07T17:31:19.084-0600</updatedOn>
  </namespace>
  <namespace resourceType="urn:oracle:wcps:property:namespace">
   <links>
    <link
     capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_8"
     rel="self" resourceType="urn:oracle:wcps:property:namespace"/>
    <link
     capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertysetdefinitions"
     resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertysetdefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={items
PerPage}"/>
    <link
     capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete"
     href="http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertydefinitions"
     resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertydefinitions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPer
Page}"/>
    <link capabilities="urn:oracle:restframework:read"
     resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
amp;dataFields={dataFields}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
   </links>
   <name>Oracle_8</name>
   <createdOn>2010-10-07T17:31:19.328-0600</createdOn>
   <updatedOn>2010-10-07T17:31:19.328-0600</updatedOn>
  </namespace>
 </items>
</namespaces>
```

JSON

Request:

```
GET http://localhost:8891/wcps/api/property/namespaces
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
```

```
JSESSIONID=WFGvMnyKP7nDBW1RQynhhphbQvWLDjLSbFJj2MQ1g6nFH2VQlgJ4!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Date: Fri, 08 Oct 2010 01:24:27 GMT

{
  "namespaces" : [ {
    "name" : "JDEV",
    "createdOn" : "2010-10-07T19:24:28.114-0600",
    "propertyLocatorClassName" :
"oracle.wcps.conductor.scenario.persistence.impl.properties.MDSScenarioPropertyLoc
ator",
    "definitionLocatorClassName" :
"oracle.wcps.property.persistence.mds.MDSDefinitionsLocator",
    "updatedOn" : "2010-10-07T19:24:28.114-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/JDEV",
      "rel" : "self"
    }, {
      "template" :
"http://localhost:8891/wcps/api/property/namespaces/JDEV/propertysetdefinitions?st
artIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/JDEV/propertysetdefinitions"
    }, {
      "template" :
"http://localhost:8891/wcps/api/property/namespaces/JDEV/propertydefinitions?start
Index={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/JDEV/propertydefinitions"
    }, {
      "template" :
"http://localhost:8891/wcps/api/property/namespaces/JDEV/propertysetdefinitions/{s
etDefinitionName}/propertysets?startIndex={startIndex}&dataFields={dataFields}&q={
q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  }, {
    "name" : "Oracle_0",
    "createdOn" : "2010-10-07T19:24:26.907-0600",
    "updatedOn" : "2010-10-07T19:24:26.907-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_0",
      "rel" : "self"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
0/propertysetdefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}
",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
0/propertysetdefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
0/propertydefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
0/propertydefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
0/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
dataFields={dataFields}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  }, {
    "name" : "Oracle_1",
    "createdOn" : "2010-10-07T19:24:26.954-0600",
    "updatedOn" : "2010-10-07T19:24:26.954-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_1",
      "rel" : "self"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertysetdefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}
",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertysetdefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertydefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertydefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
1/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
dataFields={dataFields}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  }, {
    "name" : "Oracle_2",
    "createdOn" : "2010-10-07T19:24:27.034-0600",
    "updatedOn" : "2010-10-07T19:24:27.034-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_2",
      "rel" : "self"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertysetdefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}
",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertysetdefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertydefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertydefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
2/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
dataFields={dataFields}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  }, {
    "name" : "Oracle_3",
    "createdOn" : "2010-10-07T19:24:27.191-0600",
    "updatedOn" : "2010-10-07T19:24:27.191-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_3",
      "rel" : "self"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertysetdefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}
",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertysetdefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertydefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertydefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
3/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
dataFields={dataFields}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  }, {
    "name" : "Oracle_4",
    "createdOn" : "2010-10-07T19:24:27.259-0600",
    "updatedOn" : "2010-10-07T19:24:27.259-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_4",
      "rel" : "self"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertysetdefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}
",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertysetdefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertydefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertydefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
4/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
dataFields={dataFields}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  }, {
    "name" : "Oracle_5",
    "createdOn" : "2010-10-07T19:24:27.359-0600",
    "updatedOn" : "2010-10-07T19:24:27.359-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_5",
      "rel" : "self"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
5/propertysetdefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}
",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
5/propertysetdefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
5/propertydefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
5/propertydefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
5/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
dataFields={dataFields}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  }, {
    "name" : "Oracle_6",
    "createdOn" : "2010-10-07T19:24:27.409-0600",
    "updatedOn" : "2010-10-07T19:24:27.409-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_6",
      "rel" : "self"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertysetdefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}
",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertysetdefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertydefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertydefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
6/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
```

```
dataFields={dataFields}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  }, {
    "name" : "Oracle_7",
    "createdOn" : "2010-10-07T19:24:27.463-0600",
    "updatedOn" : "2010-10-07T19:24:27.463-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_7",
      "rel" : "self"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertysetdefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}
",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertysetdefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertydefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertydefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
7/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
dataFields={dataFields}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  }, {
    "name" : "Oracle_8",
    "createdOn" : "2010-10-07T19:24:27.543-0600",
    "updatedOn" : "2010-10-07T19:24:27.543-0600",
    "resourceType" : "urn:oracle:wcps:property:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:namespace",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_8",
      "rel" : "self"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertysetdefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}
",
      "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertysetdefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertydefinitions?startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
      "href" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertydefinitions"
    }, {
      "template" : "http://localhost:8891/wcps/api/property/namespaces/Oracle_
8/propertysetdefinitions/{setDefinitionName}/propertysets?startIndex={startIndex}&
dataFields={dataFields}&q={q}&itemsPerPage={itemsPerPage}",
      "resourceType" : "urn:oracle:wcps:property:propertysets",
      "capabilities" : "urn:oracle:restframework:read"
    } ]
  } ],
  "totalCount" : 21,
  "startIndex" : 0,
  "itemsPerPage" : 10,
  "resourceType" : "urn:oracle:wcps:property:namespaces",
  "links" : [ {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces?startIndex={startIndex}&q={q}&
itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:namespaces",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" : "http://localhost:8891/wcps/api/property/namespaces",
    "rel" : "self"
  }, {
    "resourceType" : "urn:oracle:wcps:property:namespaces",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces?startIndex=10&itemsPerPage=10"
,
    "rel" : "next"
  } ]
}
```

71.2.2.6 Delete all Namespaces

DeleteAllNamespaces

XML

```
Request:
DELETE http://localhost:8891/wcps/api/property/namespaces
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=t0FKMnYDSzjRlshhs0sFX20nvnTZLQY8vnxNLkplyfYPcWgfb9y6!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
```

```
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:17 GMT
```

JSON

Request:

```
DELETE http://localhost:8891/wcps/api/property/namespaces
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=WFGvMnyKP7nDBW1RQynhhphbQvWLDjLSbFJj2MQ1g6nFH2VQlgJ4!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:204
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Content-Type: application/json
Date: Fri, 08 Oct 2010 01:24:28 GMT
```

71.2.3 Property Definition CRUD

71.2.3.1 Create Property Definition - Create Integer Property Definition

This section describes the request and response for creating a property definitions within a namespace using the property service.

CreateIntPD

XML

Request:

```
POST http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=ZfhzMnYQz7pg4gzv5wZV1srvy3yDTsG4J4090X1GnHhrQpCSTkG2!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<propertyDefinition resourceType="urn:oracle:wcps:property:propertydefinition">
  <namespaceName>Oracle</namespaceName>
  <name>Integer_Def</name>
  <type>INT</type>
  <restricted>false</restricted>
  <defaultValues/>
</propertyDefinition>
```

Response:

```
Status Code:201
Content-Length: 678
X-Oracle-RF-Token-Scheme: utoken
```

```
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Location:
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Def
Date: Thu, 07 Oct 2010 23:31:29 GMT
ETag: "1286494289263"

<?xml version="1.0" encoding="UTF-8"?>
<propertyDefinition resourceType="urn:oracle:wcps:property:propertydefinition">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s/Integer_Def"
      rel="self" resourceType="urn:oracle:wcps:property:propertydefinition"/>
  </links>
  <namespaceName>Oracle</namespaceName>
  <name>Integer_Def</name>
  <createdOn>2010-10-07T17:31:29.263-0600</createdOn>
  <updatedOn>2010-10-07T17:31:29.263-0600</updatedOn>
  <type>INT</type>
  <restricted>false</restricted>
  <defaultValues/>
</propertyDefinition>
```

JSON

Request:

```
POST http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=GSw4MnyYTw87Q6yCBb2H9F0JL6kLJwjrqYv3b72LtDMQGdLKPGRc!-609606431;Version
=1
Content-Type: application/json
Accept: application/json

{
  "name" : "Integer_Def",
  "type" : "INT",
  "namespaceName" : "Oracle",
  "restricted" : false,
  "defaultValues" : [ ],
  "resourceType" : "urn:oracle:wcps:property:propertydefinition"
}
```

Response:

```
Status Code:201
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Location:
```

```
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Def
Date: Fri, 08 Oct 2010 01:24:41 GMT
ETag: "1286501081086"

{
  "name" : "Integer_Def",
  "type" : "INT",
  "namespaceName" : "Oracle",
  "defaultValues" : [ ],
  "createdOn" : "2010-10-07T19:24:41.086-0600",
  "updatedOn" : "2010-10-07T19:24:41.086-0600",
  "restricted" : false,
  "resourceType" : "urn:oracle:wcps:property:propertydefinition",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:property:propertydefinition",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Int
eger_Def",
    "rel" : "self"
  } ]
}
```

71.2.3.2 Create Property Definition - Create Integer Array Property Definition

CreateIntArrPD

XML

Request:

```
POST http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=ZfhzMnYQz7pg4gzv5wZV1srvy3yDTsG4J4090X1GnHhrQpCSTkG2!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<propertyDefinition resourceType="urn:oracle:wcps:property:propertydefinition">
  <namespaceName>Oracle</namespaceName>
  <name>Integer_Array_Def</name>
  <type>INT_ARRAY</type>
  <restricted>true</restricted>
  <restrictedValues>
    <integer>1</integer>
    <integer>2</integer>
    <integer>3</integer>
    <integer>4</integer>
    <integer>5</integer>
  </restrictedValues>
  <defaultValues>
    <integer>1</integer>
    <integer>2</integer>
  </defaultValues>
</propertyDefinition>
```

Response:

```
Status Code:201
Content-Length: 887
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Location:
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Array_Def
Date: Thu, 07 Oct 2010 23:31:29 GMT
ETag: "1286494289494"

<?xml version="1.0" encoding="UTF-8"?>
<propertyDefinition resourceType="urn:oracle:wcps:property:propertydefinition">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s/Integer_Array_Def"
      rel="self" resourceType="urn:oracle:wcps:property:propertydefinition"/>
  </links>
  <namespaceName>Oracle</namespaceName>
  <name>Integer_Array_Def</name>
  <createdOn>2010-10-07T17:31:29.494-0600</createdOn>
  <updatedOn>2010-10-07T17:31:29.494-0600</updatedOn>
  <type>INT_ARRAY</type>
  <restricted>true</restricted>
  <restrictedValues>
    <integer>1</integer>
    <integer>2</integer>
    <integer>3</integer>
    <integer>4</integer>
    <integer>5</integer>
  </restrictedValues>
  <defaultValues>
    <integer>1</integer>
    <integer>2</integer>
  </defaultValues>
</propertyDefinition>
```

JSON

Request:

```
POST http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=GSw4MnyYTw87Q6yCBb2H9F0JL6kLJwjrqYv3b72LtDMQGdLKPGRc!-609606431;Version
=1
Content-Type: application/json
Accept: application/json

{
  "name" : "Integer_Array_Def",
  "type" : "INT_ARRAY",
  "namespaceName" : "Oracle",
  "restricted" : true,
  "restrictedValues" : [ {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 1
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 2
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 3
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 4
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 5
  } ],
  "defaultValues" : [ {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 1
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 2
  } ],
  "resourceType" : "urn:oracle:wcps:property:propertydefinition"
}
```

Response:

```
Status Code:201
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Location:
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Array_Def
Date: Fri, 08 Oct 2010 01:24:41 GMT
ETag: "1286501081123"

{
  "name" : "Integer_Array_Def",
  "type" : "INT_ARRAY",
  "namespaceName" : "Oracle",
  "defaultValues" : [ {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 1
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 2
  } ],
  "createdOn" : "2010-10-07T19:24:41.123-0600",
  "updatedOn" : "2010-10-07T19:24:41.123-0600",
  "restricted" : true,
  "restrictedValues" : [ {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 1
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 2
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 3
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 4
  }, {
    "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
    "value" : 5
  } ],
  "resourceType" : "urn:oracle:wcps:property:propertydefinition",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:property:propertydefinition",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Int
eger_Array_Def",
    "rel" : "self"
  } ]
}
```

71.2.3.3 Retrieve Property Definition

RetrievePD

XML

Request:

```
GET
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Def
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=ZfhzMnYQz7pg4gzv5wZV1srvy3yDTsG4J4090X1GnHhrQpCSTkG2!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
```

Response:

```
Status Code:200
Content-Length: 743
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
```

```
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Date: Thu, 07 Oct 2010 23:31:29 GMT
ETag: "1286494289862"

<?xml version="1.0" encoding="UTF-8"?>
<propertyDefinition resourceType="urn:oracle:wcps:property:propertydefinition">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s/Integer_Def"
      rel="self" resourceType="urn:oracle:wcps:property:propertydefinition"/>
  </links>
  <namespaceName>Oracle</namespaceName>
  <name>Integer_Def</name>
  <description>Defines an integer property value type</description>
  <createdOn>2010-10-07T17:31:29.263-0600</createdOn>
  <updatedOn>2010-10-07T17:31:29.862-0600</updatedOn>
  <type>INT</type>
  <restricted>false</restricted>
  <defaultValues/>
</propertyDefinition>
```

JSON

Request:

```
GET
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Def
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=GSw4MnyYTw87Q6yCBb2H9F0JL6kLJwjrqYv3b72LtDMQGdLKPGRc!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Date: Fri, 08 Oct 2010 01:24:41 GMT
ETag: "1286501081172"

{
  "name" : "Integer_Def",
  "type" : "INT",
  "description" : "Defines an integer property value type",
  "namespaceName" : "Oracle",
  "defaultValues" : [ ],
  "createdOn" : "2010-10-07T19:24:41.086-0600",
  "updatedOn" : "2010-10-07T19:24:41.172-0600",
  "restricted" : false,
  "resourceType" : "urn:oracle:wcps:property:propertydefinition",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:property:propertydefinition",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Int
eger_Def",
    "rel" : "self"
  } ]
}
```

71.2.3.4 Update Property Definition

UpdatePD

XML

Request:

```
PUT
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Def
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=ZfhzMnYQz7pg4gzv5wZV1srvy3yDTsG4J4090X1GnHhrQpCSTkG2!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
If-Match: 1286494289263

<?xml version="1.0" encoding="UTF-8"?>
<propertyDefinition resourceType="urn:oracle:wcps:property:propertydefinition">
  <namespaceName>Oracle</namespaceName>
  <name>Integer_Def</name>
  <description>Defines an integer property value type</description>
  <createdOn>2010-10-07T17:31:29.263-0600</createdOn>
  <updatedOn>2010-10-07T17:31:29.263-0600</updatedOn>
  <type>INT</type>
  <restricted>false</restricted>
  <defaultValues/>
</propertyDefinition>
```

Response:

```
Status Code:200
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:29 GMT
ETag: "1286494289862"
```

JSON

Request:

```
PUT
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Def
```

```
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=GSw4MnyYTw87Q6yCBb2H9F0JL6kLJwjrqYv3b72LtDMQGdLKPGRc!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
If-Match: 1286501081086

{
  "name" : "Integer_Def",
  "type" : "INT",
  "description" : "Defines an integer property value type",
  "namespaceName" : "Oracle",
  "createdOn" : "2010-10-07T19:24:41.086-0600",
  "updatedOn" : "2010-10-07T19:24:41.086-0600",
  "restricted" : false,
  "defaultValues" : [ ],
  "resourceType" : "urn:oracle:wcps:property:propertydefinition"
}
```

Response:

```
Status Code:200
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:41 GMT
ETag: "1286501081172"
```

71.2.3.5 Delete Property Definition

DeletePD

XML

Request:

```
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Def
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=ZfhzMnYQz7pg4gzv5wZV1srvy3yDTsG4J4090X1GnHhrQpCSTkG2!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
If-Match: 1286494289263
```

Response:

```
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:29 GMT
```

JSON

```
Request:
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Inte
ger_Def
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=GSw4MnyYTw87Q6yCBb2H9F0JL6kLJwjrqYv3b72LtDMQGdLKPGRc!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
If-Match: 1286501081086

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:41 GMT
```

71.2.3.6 Retrieve all Property Definitions

This section describes the request and response for viewing property definitions within a namespace using the property service.

RetrieveAllPDs

XML

```
Request:
GET http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=ZfhzMnYQz7pg4gzv5wZV1srvy3yDTsG4J4090X1GnHhrQpCSTkG2!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

Response:
Status Code:200
Content-Length: 1586
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Date: Thu, 07 Oct 2010 23:31:29 GMT

<?xml version="1.0" encoding="UTF-8"?>
<propertyDefinitions resourceType="urn:oracle:wcps:property:propertydefinitions">
  <links>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s?q=pd-name:like:%25&amp;startIndex=0&amp;itemsPerPage=10"
```

```
      rel="self"
      resourceType="urn:oracle:wcps:property:propertydefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefini
tions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
  </links>
  <itemsPerPage>10</itemsPerPage>
  <startIndex>0</startIndex>
  <totalCount>1</totalCount>
  <namespaceName>Oracle</namespaceName>
  <items>
    <propertyDefinition
resourceType="urn:oracle:wcps:property:propertydefinition">
      <links>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s/Integer_Array_Def"
          rel="self" resourceType="urn:oracle:wcps:property:propertydefinition"/>
      </links>
      <name>Integer_Array_Def</name>
      <createdOn>2010-10-07T17:31:29.494-0600</createdOn>
      <updatedOn>2010-10-07T17:31:29.494-0600</updatedOn>
      <type>INT_ARRAY</type>
      <restricted>true</restricted>
      <restrictedValues>
        <integer>5</integer>
        <integer>4</integer>
        <integer>3</integer>
        <integer>2</integer>
        <integer>1</integer>
      </restrictedValues>
      <defaultValues>
        <integer>2</integer>
        <integer>1</integer>
      </defaultValues>
    </propertyDefinition>
  </items>
</propertyDefinitions>
```

JSON

Request:

```
GET http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=GSw4MnyYTw87Q6yCBb2H9F0JL6kLJwjrqYv3b72LtDMQGdLKPGRc!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
```

```
Date: Fri, 08 Oct 2010 01:24:41 GMT

{
  "namespaceName" : "Oracle",
  "propertyDefinitions" : [ {
    "name" : "Integer_Array_Def",
    "type" : "INT_ARRAY",
    "defaultValues" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 2
    }, {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 1
    } ],
    "createdOn" : "2010-10-07T19:24:41.123-0600",
    "updatedOn" : "2010-10-07T19:24:41.123-0600",
    "restricted" : true,
    "restrictedValues" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 5
    }, {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 4
    }, {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 3
    }, {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 2
    }, {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 1
    } ],
    "resourceType" : "urn:oracle:wcps:property:propertydefinition",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:propertydefinition",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Int
eger_Array_Def",
      "rel" : "self"
    } ]
  } ],
  "totalCount" : 1,
  "startIndex" : 0,
  "itemsPerPage" : 10,
  "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
  "links" : [ {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions?sta
rtIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertydefinitions",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions?q=p
d-name:like:%25&startIndex=0&itemsPerPage=10",
    "rel" : "self"
  } ]
}
```

71.2.3.7 Delete all Property Definitions

DeleteAllPDs

XML

```
Request:
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=ZfhzMnYQz7pg4gzv5wZV1srvy3yDTsG4J4090X1GnHhrQpCSTkG2!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:30 GMT
```

JSON

```
Request:
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=GSw4MnyYTw87Q6yCBb2H9F0JL6kLJwjrqYv3b72LtDMQGdLKPGRc!-609606431;Version
=1
Content-Type: application/json
Accept: application/json

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:41 GMT
```

71.2.4 Property Set Definition CRUD

71.2.4.1 Create Property Set Definition

This section describes the request and response for creating a property set definition within a namespace using the property service.

CreatePSD

XML

```
Request:
POST
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=6Q93MnYT5xcTQJ3tPLn3vT7sCPDNFlyzQGRSRnXlfHp8lSTbR8NH!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<propertySetDefinition
resourceType="urn:oracle:wcps:property:propertysetdefinition">
  <namespaceName>Oracle</namespaceName>
  <name>partnersinfo</name>
  <propertyMapping>
    <propertyName>company_name</propertyName>
    <propertyDefinitionName>String_Def</propertyDefinitionName>
  </propertyMapping>
  <propertyMapping>
    <propertyName>address</propertyName>
    <propertyDefinitionName>String_Def</propertyDefinitionName>
  </propertyMapping>
  <propertyMapping>
    <propertyName>number_of_employees</propertyName>
    <propertyDefinitionName>Integer_Def</propertyDefinitionName>
  </propertyMapping>
  <propertyMapping>
    <propertyName>previous_ranking_and_current_ranking</propertyName>
    <propertyDefinitionName>Integer_Array_Def</propertyDefinitionName>
  </propertyMapping>
</propertySetDefinition>

Response:
Status Code:201
Content-Length: 2854
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Location:
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo
Date: Thu, 07 Oct 2010 23:31:32 GMT
ETag: "1286494292658"
```

```
<?xml version="1.0" encoding="UTF-8"?>
<propertySetDefinition
resourceType="urn:oracle:wcps:property:propertysetdefinition">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo"
      rel="self" resourceType="urn:oracle:wcps:property:propertysetdefinition"/>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets"
      resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdef
initions/partnersinfo/propertysets?startIndex={startIndex}&amp;dataFields={dataFie
lds}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
  </links>
  <namespaceName>Oracle</namespaceName>
  <name>partnersinfo</name>
  <createdOn>2010-10-07T17:31:32.658-0600</createdOn>
  <updatedOn>2010-10-07T17:31:32.658-0600</updatedOn>
  <propertyMapping>
    <links>
      <link
        capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s/Integer_Def" resourceType="urn:oracle:wcps:property:propertydefinition"/>
    </links>
    <propertyName>number_of_employees</propertyName>
    <propertyDefinitionName>Integer_Def</propertyDefinitionName>
  </propertyMapping>
  <propertyMapping>
    <links>
      <link
        capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s/String_Def" resourceType="urn:oracle:wcps:property:propertydefinition"/>
    </links>
    <propertyName>address</propertyName>
    <propertyDefinitionName>String_Def</propertyDefinitionName>
  </propertyMapping>
  <propertyMapping>
    <links>
      <link
        capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s/String_Def" resourceType="urn:oracle:wcps:property:propertydefinition"/>
    </links>
    <propertyName>company_name</propertyName>
    <propertyDefinitionName>String_Def</propertyDefinitionName>
  </propertyMapping>
  <propertyMapping>
    <links>
      <link
        capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinition
s/Integer_Array_Def" resourceType="urn:oracle:wcps:property:propertydefinition"/>
    </links>
    <propertyName>previous_ranking_and_current_ranking</propertyName>
    <propertyDefinitionName>Integer_Array_Def</propertyDefinitionName>
  </propertyMapping>
</propertySetDefinition>
```

JSON

Request:

```
POST
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=dpvQMnyDkSNwv1TZ20JSYyzJpKJn1JwBQdRtNLQhNPHWpgvs8PcZ!-609606431;Version
=1
Content-Type: application/json
Accept: application/json

{
  "name" : "partnersinfo",
  "namespaceName" : "Oracle",
  "propertyMappings" : [ {
    "propertyDefinitionName" : "String_Def",
    "propertyName" : "company_name"
  }, {
    "propertyDefinitionName" : "String_Def",
    "propertyName" : "address"
  }, {
    "propertyDefinitionName" : "Integer_Def",
    "propertyName" : "number_of_employees"
  }, {
    "propertyDefinitionName" : "Integer_Array_Def",
    "propertyName" : "previous_ranking_and_current_ranking"
  } ],
  "resourceType" : "urn:oracle:wcps:property:propertysetdefinition"
}
```

Response:

```
Status Code:201
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Location:
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo
Date: Fri, 08 Oct 2010 01:24:51 GMT
ETag: "1286501091845"
```

```
{
  "name" : "partnersinfo",
  "namespaceName" : "Oracle",
  "createdOn" : "2010-10-07T19:24:51.845-0600",
  "updatedOn" : "2010-10-07T19:24:51.845-0600",
  "propertyMappings" : [ {
    "propertyName" : "number_of_employees",
    "propertyDefinitionName" : "Integer_Def",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:propertydefinition",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Int
eger_Def"
    } ]
  }, {
    "propertyName" : "address",
    "propertyDefinitionName" : "String_Def",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:propertydefinition",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Str
ing_Def"
    } ]
  }, {
    "propertyName" : "company_name",
    "propertyDefinitionName" : "String_Def",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:propertydefinition",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Str
ing_Def"
    } ]
  }, {
    "propertyName" : "previous_ranking_and_current_ranking",
    "propertyDefinitionName" : "Integer_Array_Def",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:propertydefinition",
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertydefinitions/Int
eger_Array_Def"
    } ]
  } ],
  "resourceType" : "urn:oracle:wcps:property:propertysetdefinition",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:property:propertysetdefinition",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo",
    "rel" : "self"
  }, {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets?startIndex={startIndex}&dataFields={dataFields}&q={q}&it
emsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertysets",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets"
  } ]
}
```

71.2.4.2 Retrieve Property Set Definition

RetrievePSD

XML

Request:

```
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=6Q93MnYT5xcTQJ3tPLn3vT7sCPDNFlyzQGRSRnXlfHp8lSTbR8NH!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
If-Match: 1286494292658
```

Response:

```
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:33 GMT
```

JSON

Request:

```
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=dpvQMnyDkSNwv1TZ20JSYyzJpKJn1JwBQdRtNLQhNPHWpgvs8PcZ!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
If-Match: 1286501091845
```

Response:

```
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
```

```
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:51 GMT
```

71.2.4.3 Retrieve All Property Set Definitions

This section describes the request and response for viewing property set definitions within a namespace using the property service.

RetrieveAllPSDs

XML

Request:

```
GET
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=6Q93MnYT5xcTQJ3tPLn3vT7sCPDNFlyzQGRSRnXlfHp8lSTbR8NH!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
```

Response:

```
Status Code:200
Content-Length: 779
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Date: Thu, 07 Oct 2010 23:31:33 GMT

<?xml version="1.0" encoding="UTF-8"?>
<propertySetDefinitions
resourceType="urn:oracle:wcps:property:propertysetdefinitions">
  <links>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions?startIndex=0&amp;itemsPerPage=10"
      rel="self"
      resourceType="urn:oracle:wcps:property:propertysetdefinitions"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdef
initions?startIndex={startIndex}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
  </links>
  <itemsPerPage>10</itemsPerPage>
  <startIndex>0</startIndex>
  <totalCount>0</totalCount>
  <namespaceName>Oracle</namespaceName>
  <items/>
</propertySetDefinitions>
```

JSON

Request:

```
GET
```

```
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=dpvQMnyDkSNwv1TZ20JSYyzJpKJn1JwBQdRtNLQhNPHWpgvs8PcZ!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Date: Fri, 08 Oct 2010 01:24:51 GMT

{
  "namespaceName" : "Oracle",
  "propertySetDefinitions" : [ ],
  "totalCount" : 0,
  "startIndex" : 0,
  "itemsPerPage" : 10,
  "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
  "links" : [ {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions?
startIndex={startIndex}&q={q}&itemsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertysetdefinitions",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions?
startIndex=0&itemsPerPage=10",
    "rel" : "self"
  } ]
}
```

71.2.4.4 Delete all Property Set Definitions

DeleteAllPSDs

XML

Request:

```
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=6Q93MnYT5xcTQJ3tPLn3vT7sCPDNFlyzQGRSRnXlfHp8lSTbR8NH!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
```

Response:

```
Status Code:204
Content-Length: 0
```

```
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:33 GMT
```

JSON

Request:

```
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=dpvQMnyDkSNwv1TZ20JSYyzJpKJn1JwBQdRtNLQhNPHWpgvs8PcZ!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:51 GMT
```

71.2.5 Property Set CRUD

71.2.5.1 Create Property Set

This section describes the request and response for creating a property set within a namespace using the property service.

CreatePS

XML

Request:

```
POST
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=vc1pMnYWRZysgqhXVz5XrGKqhvfy0vv2zc7xQ3RyDSvG0mG22ZlJ!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<propertySet resourceType="urn:oracle:wcps:property:propertyset">
  <namespaceName>Oracle</namespaceName>
  <propertySetDefinitionName>partnersinfo</propertySetDefinitionName>
  <name>infosys</name>
  <items>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <name>company_name</name>
      <type>STRING</type>
      <values>
        <string>InfoSys</string>
      </values>
    </property>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <name>address</name>
      <type>STRING</type>
      <values>
        <string>1 foo loop, San Francisco, CA</string>
      </values>
    </property>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <name>number_of_employees</name>
      <type>INT</type>
      <values>
        <integer>10000</integer>
      </values>
    </property>
    <property multiValue="true" resourceType="urn:oracle:wcps:property:property">
      <name>previous_ranking_and_current_ranking</name>
      <type>INT_ARRAY</type>
      <values>
        <integer>3</integer>
        <integer>5</integer>
      </values>
    </property>
  </items>
</propertySet>

Response:

Status Code:201
Content-Length: 3709
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Location:
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys
Date: Thu, 07 Oct 2010 23:31:35 GMT
ETag: "1286494295948"

<?xml version="1.0" encoding="UTF-8"?>
<propertySet resourceType="urn:oracle:wcps:property:propertyset">
  <links>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:property"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdef
initions/partnersinfo/propertysets/infosys/properties/{propertyName}"/>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
```

```
ions/partnersinfo/propertysets/infosys"
      rel="self" resourceType="urn:oracle:wcps:property:propertyset"/>
  </links>
  <namespaceName>Oracle</namespaceName>
  <propertySetDefinitionName>partnersinfo</propertySetDefinitionName>
  <name>infosys</name>
  <items>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <links>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/number_of_employees"
          rel="self" resourceType="urn:oracle:wcps:property:property"/>
      </links>
      <name>number_of_employees</name>
      <type>INT</type>
      <values>
        <integer>10000</integer>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
    </property>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <links>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/address"
          rel="self" resourceType="urn:oracle:wcps:property:property"/>
      </links>
      <name>address</name>
      <type>STRING</type>
      <values>
        <string>1 foo loop, San Francisco, CA</string>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
    </property>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <links>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/company_name"
          rel="self" resourceType="urn:oracle:wcps:property:property"/>
      </links>
      <name>company_name</name>
      <type>STRING</type>
      <values>
        <string>InfoSys</string>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
    </property>
    <property multiValue="true" resourceType="urn:oracle:wcps:property:property">
      <links>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/previous_ranking_and_current_
ranking"
          rel="self" resourceType="urn:oracle:wcps:property:property"/>
      </links>
      <name>previous_ranking_and_current_ranking</name>
      <type>INT_ARRAY</type>
      <values>
        <integer>3</integer>
        <integer>5</integer>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
    </property>
  </items>
  <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
  <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
</propertySet>
```

JSON

Request:

```
POST
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
=1
Content-Type: application/json
Accept: application/json

{
  "name" : "infosys",
  "properties" : [ {
    "name" : "company_name",
    "type" : "STRING",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:string-value",
      "value" : "InfoSys"
    } ],
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property"
  }, {
    "name" : "address",
    "type" : "STRING",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:string-value",
      "value" : "1 foo loop, San Francisco, CA"
    } ],
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property"
  }, {
    "name" : "number_of_employees",
    "type" : "INT",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 10000
    } ],
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property"
  }, {
    "name" : "previous_ranking_and_current_ranking",
    "type" : "INT_ARRAY",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 3
    }, {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 5
    } ],
    "multiValue" : true,
    "resourceType" : "urn:oracle:wcps:property:property"
  } ],
  "namespaceName" : "Oracle",
  "propertySetDefinitionName" : "partnersinfo",
  "resourceType" : "urn:oracle:wcps:property:propertyset"
}
```

Response:

```
Status Code:201
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Location:
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys
Date: Fri, 08 Oct 2010 01:24:58 GMT
ETag: "1286501098924"

{
  "name" : "infosys",
  "properties" : [ {
    "name" : "number_of_employees",
    "type" : "INT",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 10000
    } ],
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.924-0600",
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:property",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/number_of_employees",
      "rel" : "self"
    } ]
  }, {
    "name" : "address",
    "type" : "STRING",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:string-value",
      "value" : "1 foo loop, San Francisco, CA"
    } ],
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.924-0600",
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:property",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/address",
      "rel" : "self"
    } ]
  }, {
    "name" : "company_name",
    "type" : "STRING",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:string-value",
      "value" : "InfoSys"
    } ],
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.924-0600",
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:property",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/company_name",
      "rel" : "self"
    } ]
  }, {
    "name" : "previous_ranking_and_current_ranking",
    "type" : "INT_ARRAY",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 3
    }, {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 5
    } ],
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.924-0600",
    "multiValue" : true,
    "resourceType" : "urn:oracle:wcps:property:property",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:property",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/previous_ranking_and_current_
ranking",
      "rel" : "self"
    } ]
  } ],
  "namespaceName" : "Oracle",
  "createdOn" : "2010-10-07T19:24:58.924-0600",
  "updatedOn" : "2010-10-07T19:24:58.924-0600",
  "propertySetDefinitionName" : "partnersinfo",
  "resourceType" : "urn:oracle:wcps:property:propertyset",
  "links" : [ {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/{propertyName}",
    "resourceType" : "urn:oracle:wcps:property:property",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"
  }, {
    "resourceType" : "urn:oracle:wcps:property:propertyset",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys",
    "rel" : "self"
  } ]
}
```

71.2.5.2 Retrieve Property Set

RetrievePS

XML

Request:

```
GET
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys
```

```
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=vc1pMnYWRZysgqhXVz5XrGKqhvfy0vv2zc7xQ3RyDSvG0mG22ZlJ!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
```

Response:

```
Status Code:200
Content-Length: 3709
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Date: Thu, 07 Oct 2010 23:31:36 GMT
ETag: "1286494296325"

<?xml version="1.0" encoding="UTF-8"?>
<propertySet resourceType="urn:oracle:wcps:property:propertyset">
  <links>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"
      resourceType="urn:oracle:wcps:property:property"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdef
initions/partnersinfo/propertysets/infosys/properties/{propertyName}"/>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys"
      rel="self" resourceType="urn:oracle:wcps:property:propertyset"/>
  </links>
  <namespaceName>Oracle</namespaceName>
  <propertySetDefinitionName>partnersinfo</propertySetDefinitionName>
  <name>infosys</name>
  <items>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <links>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/number_of_employees"
          rel="self" resourceType="urn:oracle:wcps:property:property"/>
      </links>
      <name>number_of_employees</name>
      <type>INT</type>
      <values>
        <integer>10000</integer>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:36.325-0600</updatedOn>
    </property>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
```

```
      <links>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/company_name"
          rel="self" resourceType="urn:oracle:wcps:property:property"/>
      </links>
      <name>company_name</name>
      <type>STRING</type>
      <values>
        <string>InfoSys</string>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:36.325-0600</updatedOn>
    </property>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <links>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/address"
          rel="self" resourceType="urn:oracle:wcps:property:property"/>
      </links>
      <name>address</name>
      <type>STRING</type>
      <values>
        <string>1 foo loop, San Francisco, CA</string>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:36.325-0600</updatedOn>
    </property>
    <property multiValue="true" resourceType="urn:oracle:wcps:property:property">
      <links>
        <link
          capabilities="urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/previous_ranking_and_current_
ranking"
          rel="self" resourceType="urn:oracle:wcps:property:property"/>
      </links>
      <name>previous_ranking_and_current_ranking</name>
      <type>INT_ARRAY</type>
      <values>
        <integer>4</integer>
        <integer>5</integer>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:36.325-0600</updatedOn>
    </property>
  </items>
  <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
  <updatedOn>2010-10-07T17:31:36.325-0600</updatedOn>
</propertySet>
```

JSON

Request:

```
GET
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Date: Fri, 08 Oct 2010 01:24:58 GMT
ETag: "1286501098964"

{
  "name" : "infosys",
  "properties" : [ {
    "name" : "number_of_employees",
    "type" : "INT",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 10000
    } ],
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.964-0600",
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:property",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/number_of_employees",
      "rel" : "self"
    } ]
  }, {
    "name" : "company_name",
    "type" : "STRING",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:string-value",
      "value" : "InfoSys"
    } ],
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.964-0600",
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:property",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/company_name",
      "rel" : "self"
    } ]
  }, {
    "name" : "address",
    "type" : "STRING",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:string-value",
      "value" : "1 foo loop, San Francisco, CA"
    } ],
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.964-0600",
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:property",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/address",
      "rel" : "self"
    } ]
  }, {
    "name" : "previous_ranking_and_current_ranking",
    "type" : "INT_ARRAY",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 4
    }, {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 5
    } ],
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.964-0600",
    "multiValue" : true,
    "resourceType" : "urn:oracle:wcps:property:property",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:property:property",
      "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
      "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/previous_ranking_and_current_
ranking",
      "rel" : "self"
    } ]
  } ],
  "namespaceName" : "Oracle",
  "createdOn" : "2010-10-07T19:24:58.924-0600",
  "updatedOn" : "2010-10-07T19:24:58.964-0600",
  "propertySetDefinitionName" : "partnersinfo",
  "resourceType" : "urn:oracle:wcps:property:propertyset",
  "links" : [ {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/{propertyName}",
    "resourceType" : "urn:oracle:wcps:property:property",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete"
  }, {
    "resourceType" : "urn:oracle:wcps:property:propertyset",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys",
    "rel" : "self"
  } ]
}
```

71.2.5.3 Update Property Set

UpdatePS

XML

Request:

```
PUT
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=vc1pMnYWRZysgqhXVz5XrGKqhvfy0vv2zc7xQ3RyDSvG0mG22ZlJ!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
If-Match: 1286494295948

<?xml version="1.0" encoding="UTF-8"?>
<propertySet resourceType="urn:oracle:wcps:property:propertyset">
  <namespaceName>Oracle</namespaceName>
  <propertySetDefinitionName>partnersinfo</propertySetDefinitionName>
  <name>infosys</name>
  <items>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <name>number_of_employees</name>
      <type>INT</type>
      <values>
        <integer>10000</integer>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
    </property>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <name>address</name>
      <type>STRING</type>
      <values>
        <string>1 foo loop, San Francisco, CA</string>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
    </property>
    <property multiValue="false" resourceType="urn:oracle:wcps:property:property">
      <name>company_name</name>
      <type>STRING</type>
      <values>
        <string>InfoSys</string>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
    </property>
    <property multiValue="true" resourceType="urn:oracle:wcps:property:property">
      <name>previous_ranking_and_current_ranking</name>
      <type>INT_ARRAY</type>
      <values>
        <integer>4</integer>
        <integer>5</integer>
      </values>
      <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
      <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
    </property>
  </items>
  <createdOn>2010-10-07T17:31:35.948-0600</createdOn>
  <updatedOn>2010-10-07T17:31:35.948-0600</updatedOn>
</propertySet>
```

Response:

```
Status Code:200
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:36 GMT
ETag: "1286494296325"
```

JSON

Request:

```
PUT
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
If-Match: 1286501098924

{
  "name" : "infosys",
  "properties" : [ {
    "name" : "number_of_employees",
    "type" : "INT",
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.924-0600",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 10000
    } ],
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property"
  }, {
    "name" : "address",
    "type" : "STRING",
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.924-0600",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:string-value",
      "value" : "1 foo loop, San Francisco, CA"
    } ],
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property"
  }, {
    "name" : "company_name",
    "type" : "STRING",
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.924-0600",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:string-value",
      "value" : "InfoSys"
    } ],
    "multiValue" : false,
    "resourceType" : "urn:oracle:wcps:property:property"
  }, {
    "name" : "previous_ranking_and_current_ranking",
    "type" : "INT_ARRAY",
    "createdOn" : "2010-10-07T19:24:58.924-0600",
    "updatedOn" : "2010-10-07T19:24:58.924-0600",
    "values" : [ {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 4
    }, {
      "concreteType" :
"urn:oracle:wcps:property:internal:jaxrs:model:integer-value",
      "value" : 5
    } ],
    "multiValue" : true,
    "resourceType" : "urn:oracle:wcps:property:property"
  } ],
  "namespaceName" : "Oracle",
  "createdOn" : "2010-10-07T19:24:58.924-0600",
  "updatedOn" : "2010-10-07T19:24:58.924-0600",
  "propertySetDefinitionName" : "partnersinfo",
  "resourceType" : "urn:oracle:wcps:property:propertyset"
}
```

```
Response:
Status Code:200
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:58 GMT
ETag: "1286501098964"
```

71.2.5.4 Delete Property Set

DeletePS

```
Request:
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=vc1pMnYWRZysgqhXVz5XrGKqhvfy0vv2zc7xQ3RyDSvG0mG22ZlJ!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
If-Match: 1286494295948

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:36 GMT
```

JSON

```
Request:
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
If-Match: 1286501098924

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:58 GMT
```

71.2.5.5 Retrieve all Property Sets

This section describes the request and response for viewing a property set within a namespace using the property service.

RetrieveAllPSs

XML

Request:

```
GET
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=vc1pMnYWRZysgqhXVz5XrGKqhvfy0vv2zc7xQ3RyDSvG0mG22ZlJ!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
```

Response:

```
Status Code:200
Content-Length: 886
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Date: Thu, 07 Oct 2010 23:31:36 GMT

<?xml version="1.0" encoding="UTF-8"?>
<propertySets resourceType="urn:oracle:wcps:property:propertysets">
  <links>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets?startIndex=0&amp;itemsPerPage=10"
      rel="self" resourceType="urn:oracle:wcps:property:propertysets"
template="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdef
initions/partnersinfo/propertysets?startIndex={startIndex}&amp;dataFields={dataFie
lds}&amp;q={q}&amp;itemsPerPage={itemsPerPage}"/>
  </links>
  <itemsPerPage>10</itemsPerPage>
  <startIndex>0</startIndex>
  <totalCount>0</totalCount>
  <namespaceName>Oracle</namespaceName>
  <propertySetDefinitionName>partnersinfo</propertySetDefinitionName>
  <items/>
</propertySets>
```

JSON

Request:

```
GET
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
```

```
=1
Content-Type: application/json
Accept: application/json

Response:
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Date: Fri, 08 Oct 2010 01:24:59 GMT

{
  "propertySets" : [ ],
  "namespaceName" : "Oracle",
  "propertySetDefinitionName" : "partnersinfo",
  "totalCount" : 0,
  "startIndex" : 0,
  "itemsPerPage" : 10,
  "resourceType" : "urn:oracle:wcps:property:propertysets",
  "links" : [ {
    "template" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets?startIndex={startIndex}&dataFields={dataFields}&q={q}&it
emsPerPage={itemsPerPage}",
    "resourceType" : "urn:oracle:wcps:property:propertysets",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets?startIndex=0&itemsPerPage=10",
    "rel" : "self"
  } ]
}
```

71.2.5.6 Delete all Property Sets

DeleteAllPSs

XML

```
Request:
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=vc1pMnYWRZysgqhXVz5XrGKqhvfy0vv2zc7xQ3RyDSvG0mG22ZlJ!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
```

```
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:36 GMT
```

JSON

Request:

```
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:59 GMT
```

71.2.6 Property CRUD

71.2.6.1 Create Property

CreateP

XML

Request:

```
POST
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=vc1pMnYWRZysgqhXVz5XrGKqhvfy0vv2zc7xQ3RyDSvG0mG22ZlJ!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<property multiValue="false" resourceType="urn:oracle:wcps:property:property">
  <name>ceo_name</name>
  <type>STRING</type>
  <values>
    <string>Mr. Smith</string>
  </values>
</property>
```

Response:

```
Status Code:201
Content-Length: 694
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Location:
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties/ceo_name
Date: Thu, 07 Oct 2010 23:31:36 GMT
ETag: "1286494297011"

<?xml version="1.0" encoding="UTF-8"?>
<property multiValue="false" resourceType="urn:oracle:wcps:property:property">
  <links>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/ceo_name"
      rel="self" resourceType="urn:oracle:wcps:property:property"/>
  </links>
  <name>ceo_name</name>
  <type>STRING</type>
  <values>
    <string>Mr. Smith</string>
  </values>
  <createdOn>2010-10-07T17:31:36.741-0600</createdOn>
  <updatedOn>2010-10-07T17:31:37.011-0600</updatedOn>
</property>
```

JSON

Request:

```
POST
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
=1
Content-Type: application/json
Accept: application/json

{
  "name" : "ceo_name",
  "type" : "STRING",
  "values" : [ {
    "concreteType" : "urn:oracle:wcps:property:internal:jaxrs:model:string-value",
    "value" : "Mr. Smith"
  } ],
  "multiValue" : false,
  "resourceType" : "urn:oracle:wcps:property:property"
}
```

Response:

```
Status Code:201
```

```
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Location:
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties/ceo_name
Date: Fri, 08 Oct 2010 01:24:59 GMT
ETag: "1286501099056"

{
  "name" : "ceo_name",
  "type" : "STRING",
  "values" : [ {
    "concreteType" : "urn:oracle:wcps:property:internal:jaxrs:model:string-value",
    "value" : "Mr. Smith"
  } ],
  "createdOn" : "2010-10-07T19:24:59.038-0600",
  "updatedOn" : "2010-10-07T19:24:59.056-0600",
  "multiValue" : false,
  "resourceType" : "urn:oracle:wcps:property:property",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:property:property",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/ceo_name",
    "rel" : "self"
  } ]
}
```

71.2.6.2 Retrieve Property

RetrieveP

XML

Request:

```
GET
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties/ceo_name
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=vc1pMnYWRZysgqhXVz5XrGKqhvfy0vv2zc7xQ3RyDSvG0mG22ZlJ!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
```

Response:

```
Status Code:200
Content-Length: 694
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
```

```
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Content-Type: application/xml
Date: Thu, 07 Oct 2010 23:31:37 GMT
ETag: "1286494297366"

<?xml version="1.0" encoding="UTF-8"?>
<property multiValue="false" resourceType="urn:oracle:wcps:property:property">
  <links>
    <link
      capabilities="urn:oracle:restframework:create urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete"

href="http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinit
ions/partnersinfo/propertysets/infosys/properties/ceo_name"
      rel="self" resourceType="urn:oracle:wcps:property:property"/>
  </links>
  <name>ceo_name</name>
  <type>STRING</type>
  <values>
    <string>Mr. Baker</string>
  </values>
  <createdOn>2010-10-07T17:31:36.741-0600</createdOn>
  <updatedOn>2010-10-07T17:31:37.366-0600</updatedOn>
</property>
```

JSON

Request:

```
GET
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties/ceo_name
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
```

Response:

```
Status Code:200
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Transfer-Encoding: chunked
Content-Type: application/json
Date: Fri, 08 Oct 2010 01:24:59 GMT
ETag: "1286501099162"

{
  "name" : "ceo_name",
  "type" : "STRING",
  "values" : [ {
    "concreteType" : "urn:oracle:wcps:property:internal:jaxrs:model:string-value",
    "value" : "Mr. Baker"
  } ],
  "createdOn" : "2010-10-07T19:24:59.038-0600",
  "updatedOn" : "2010-10-07T19:24:59.162-0600",
  "multiValue" : false,
  "resourceType" : "urn:oracle:wcps:property:property",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:property:property",
    "capabilities" : "urn:oracle:restframework:create
urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete",
    "href" :
"http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/
partnersinfo/propertysets/infosys/properties/ceo_name",
    "rel" : "self"
  } ]
}
```

71.2.6.3 Update Property

UpdateP

XML

Request:

```
PUT
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties/ceo_name
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
Cookie:
JSESSIONID=vc1pMnYWRZysgqhXVz5XrGKqhvfy0vv2zc7xQ3RyDSvG0mG22ZlJ!-1714998420;Versio
n=1
Content-Type: application/xml
Accept: application/xml
If-Match: 1286494297011

<?xml version="1.0" encoding="UTF-8"?>
<property multiValue="false" resourceType="urn:oracle:wcps:property:property">
  <name>ceo_name</name>
  <type>STRING</type>
  <values>
    <string>Mr. Baker</string>
  </values>
  <createdOn>2010-10-07T17:31:36.741-0600</createdOn>
  <updatedOn>2010-10-07T17:31:37.011-0600</updatedOn>
</property>
```

Response:

```
Status Code:200
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FC59cJkhnJPolzPwKsStfD0Dxjm8_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Date: Thu, 07 Oct 2010 23:31:37 GMT
ETag: "1286494297366"
```

JSON

Request:

```
PUT
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties/ceo_name
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
```

```
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
If-Match: 1286501099056

{
  "name" : "ceo_name",
  "type" : "STRING",
  "createdOn" : "2010-10-07T19:24:59.038-0600",
  "updatedOn" : "2010-10-07T19:24:59.056-0600",
  "values" : [ {
    "concreteType" : "urn:oracle:wcps:property:internal:jaxrs:model:string-value",
    "value" : "Mr. Baker"
  } ],
  "multiValue" : false,
  "resourceType" : "urn:oracle:wcps:property:property"
}
```

Response:

```
Status Code:200
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Cache-Control: no-cache
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:59 GMT
ETag: "1286501099162"
```

71.2.6.4 Delete Property

DeleteP

XML

Request:

```
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties/ceo_name
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=VyThMnyG0gyp97J3vKPrkfF4VvtrjTDHJ3SL894V0glWzqJ24L0B!-609606431;Version
=1
Content-Type: application/xml
Accept: application/xml
If-Match: 1286501097791
```

Response:

```
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:58 GMT
```

JSON

```
Request:
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties/ceo_name
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
=1
Content-Type: application/json
Accept: application/json
If-Match: 1286501099162

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:59 GMT
```

71.2.6.5 Delete all Properties

DeleteAllP

XML

```
Request:
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=VyThMnyG0gyp97J3vKPrkfF4VvtrjTDHJ3SL894V0glWzqJ24L0B!-609606431;Version
=1
Content-Type: application/xml
Accept: application/xml

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:58 GMT
```

JSON

```
Request:
DELETE
http://localhost:8891/wcps/api/property/namespaces/Oracle/propertysetdefinitions/p
artnersinfo/propertysets/infosys/properties
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
Cookie:
JSESSIONID=h72xMnyKQQSW9Lwcg2HMGDnNQnK1HZJpGJmLgZ2P1vHFpvT2bX2k!-609606431;Version
```

```
=1
Content-Type: application/json
Accept: application/json

Response:
Status Code:204
Content-Length: 0
X-Oracle-RF-Token-Scheme: utoken
X-Oracle-RF-Token: FIxec1lmTFguxer9ZqZJpsXSnlZy_w**
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
X-Oracle-RF-Token-Location: header
Date: Fri, 08 Oct 2010 01:24:59 GMT
```

71.2.7 JSON Payload

The property value in JSON format indicates the value type using `concreteType` field names. The following table maps the property definition type and Java data type to the values of `concreteType`.

Table 71–1 concreteType Values

Property Definition Type	Java Data Type	concreteType Value
INT	java.lang.Integer	urn:oracle:wcps:property:internal:jaxrs:model:integer-value
NUMBER	java.lang.Double	urn:oracle:wcps:property:internal:jaxrs:model:double-value
STRING	java.lang.String	urn:oracle:wcps:property:internal:jaxrs:model:string-value
BOOLEAN	java.lang.Boolean	urn:oracle:wcps:property:internal:jaxrs:model:boolean-value
BLOB	oracle.wcps.property.BlobData	urn:oracle:wcps:property:blob-data
CLOB	oracle.wcps.property.ClobData	urn:oracle:wcps:property:clob-data
DATETIME	oracle.wcps.property.DateTime	urn:oracle:wcps:property:date-time

71.2.8 Exceptions

- If optimistic concurrency is disabled on the property server, the "If-Match" request header is not required. If enabled, the value of the "If-Match" header should be the value sent for the response header "ETag".
- Not sending the request header X-Oracle-RF-Token results in a 403 response status. The value of the token should be the one sent in response of the `/resouceIndex` request.
- Attempting to delete an "in use" Namespace, Property Definition, or Property Set Definition results in a 412 response status.

71.2.9 Query Parameters

Table 71–2 shows the supported query parameters and their default values.

Table 71–2 Query Parameters

Query Parameter Name	Description	Default Value	Other Special Values
q	the value for it is a search expression	none	none
startIndex	Represents the index of the first element in a page	0	none
itemsPerPage	Represents the number of items to be included in a page	10	none
dataFields	Represents a list of attributes of a property service entities for which data is returned	empty list = (Return zero attributes)	* = (all attributes)

71.2.10 Search Expressions

71.2.10.1 Format

The value for the 'q' query parameter is a search expression. The search expression format is:

```
single_expression = attribute_name:operator_name:value
expression = single_expression[;single_expression]
```

71.2.10.2 Supported Operators

- Relational Operator
  - `:equals:` ==> Equals
  - `:contains:` ==> Contains
  - `:like:` ==> SQL Like, applies only to string type property values
  - `:gt:` ==> Greater than
  - `:gte:` ==> Greater than or equals to
  - `:lt:` ==> Less than
  - `:lte:` ==> Less than or equals to
- Logical Operation
  - `;` ==> and

71.2.10.3 Supported Attribute Names

Table 71–3, Table 71–4, Table 71–5, and Table 71–6 show the supported attribute names that can be used in a search expressions to search for property service entities.

Namespace Attributes

Table 71–3 Namespace Attributes

Attribute Name	Description
ns-name	A namespace's name

Table 71–3 (Cont.) Namespace Attributes

Attribute Name	Description
ns-property-locator-class-name	A namespace's property locator class name
ns-definition-locator-class-name	A namespace's definition locator class name
ns-created-on	A namespace's created on date time
ns-updated-on	A namespace's updated on date time

Examples:

```
/wcps/api/property/namespaces?q=ns-name:like:Oracle_%25
```

```
/wcps/api/property/namespaces?q=ns-definition-locator-class-name:like:%25Locator%2
5;ns-name:like:Oracle_%25
```

Property Definition Attributes

Table 71–4 Property Definition Attributes

Attribute Name	Description
pd-name	A property definition's name
pd-description	A property definition's description
pd-type	A property definition's type
pd-restricted	A property definition's restricted attribute
pd-validator-class-name	A property definition's validator class name
pd-created-on	A property definition's created on date time
pd-updated-on	A property definition's updated on date time

Example:

```
/wcps/api/property/namespaces/Oracle/propertydefinitions?q=pd-name:like:%25D%25;pd
-description:contains:4th;pd-restricted:contains:true
```

Property Set Definition Attributes

Table 71–5 Property Set Definition Attributes

Attribute Name	Description
psd-name	A property set definition's name
psd-description	A property set definition's description
psd-pd-name	A property definition name referred by a property set definition
psd-property-locator-class-name	A property locator class name associated with a property set definition
psd-created-on	A property set definition's created on date time
psd-updated-on	A property set definition's updated on date time

Example:

```
wcps/api/property/namespaces/Oracle/propertysetdefinitions?q=psd-created-on:gt:198
0-01-01T00:00:00.000-0700;psd-name:like:%255%25
```

Property Set Attributes

Table 71–6 Property Set Attributes

Attribute Name	Description
ps-name	A property set's name
ps-description	A property set's description
psd-created-on	A property set's created on date time
psd-updated-on	A property set's updated on date time
a property's name	A property's name attribute (for example, firstName, zipCode, etc.)

Example:

```
/wcps/api/property/namespaces/Oracle/propertysetdefinitions/partners_
info/propertysets?q=ps-created-on:gt:1980-01-01T00:00:00.000-0700
```

72 Conductor API Reference

This chapter describes the public APIs for the Conductor, the component that orchestrates data integration components and activities for WebCenter Portal.

This chapter includes the following topics:

- Section 72.1, "Using Java APIs"
- Section 72.2, "Using the Conductor REST APIs"
- Section 72.3, "Calling Data Integration Client Services Using ELs"

72.1 Using Java APIs

The service interfaces shown in Table 72–1 define the remote Conductor API.

Table 72–1 Remote Conductor APIs

Interface/Service	Description
`oracle.wcps.conductor.services.IScenariosService`	General management, retrieval, and execution of stored Scenarios.
`oracle.wcps.conductor.services.INamespaceService`	General management of stored namespaces known to the Conductor.
`oracle.wcps.conductor.services.IProviderService`	Retrieval of provider metadata known to the Conductor server.

72.2 Using the Conductor REST APIs

This section provides examples of how you can use the Conductor's REST APIs to programatically carry out basic data integration tasks, such as:

- Get information about data providers
- Get information about function providers
- Create, retrieve, or delete a namespace
- Create, retrieve, execute, or delete a scenario

You can use the Conductor REST APIs from within application code, or using data integration ELs to call them from within your WebCenter Portal Framework application or WebCenter Portal.

This section includes the following subsections:

- Section 72.2.1, "Using the Data Provider Management REST APIs"
- Section 72.2.2, "Using the Function Provider Management APIs"

- Section 72.2.3, "Using the Namespace Management APIs"
- Section 72.2.4, "Using the Scenario Management APIs"

72.2.1 Using the Data Provider Management REST APIs

This section provides examples of using the Conductor's data provider management APIs, and contains the following subsections:

- Section 72.2.1.1, "Getting a Collection of Data Providers (GET)"
- Section 72.2.1.2, "Getting a Single Data Provider's Metadata (GET)"
- Section 72.2.1.3, "Getting Information About a Data Provider Connection (GET)"
- Section 72.2.1.4, "Getting Information about an Executable Resource for a Data Provider and Connection (GET)"
- Section 72.2.1.5, "Getting Method Information for an Executable Resource for a Data Provider and Connection (GET)"
- Section 72.2.1.6, "Getting Entire Data Provider Information with Details Projection (GET)"

72.2.1.1 Getting a Collection of Data Providers (GET)

XML

```
Sample Request:
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projectio
n=summary
accept-language: en
content-type: application/xml
accept: application/xml

Sample Response:
Status Code:200
Content-Length: 4469
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=YxYmM25GLpCy7BSND7vF6BnsQCn20RQsCrS92n1SLXmxpccVkfpX!822326988;
path=/wcps; HttpOnly
Content-Type: application/xml
Date: Wed, 13 Oct 2010 22:58:46 GMT

<?xml version="1.0" encoding="UTF-8"?>
<dataProviders resourceType="urn:oracle:wcps:conductor:provider:dataProviders">
  <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?pro
jection=summary&amp;startIndex=0&amp;itemsPerPage=10"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
?projection={projection}"/>
  </links>
  <items>
    <dataProvider resourceType="urn:oracle:wcps:conductor:provider:dataProvider">
      <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders"
     rel="urn:oracle:webcenter:parent"
     resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/CMI
SProvider"
     rel="self"
     resourceType="urn:oracle:wcps:conductor:provider:dataProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/CMISProvider?projection={projection}"/>
   </links>
   <name>CMISProvider</name>
   <localizedName>Universal Content Provider (CMIS)</localizedName>
   <localizedDescription>Provides access to content over CMIS
connections.</localizedDescription>
  </dataProvider>
  <dataProvider resourceType="urn:oracle:wcps:conductor:provider:dataProvider">
   <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders"
     rel="urn:oracle:webcenter:parent"
     resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/Sam
pleProvider"
     rel="self"
     resourceType="urn:oracle:wcps:conductor:provider:dataProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/SampleProvider?projection={projection}"/>
   </links>
   <name>SampleProvider</name>
   <localizedName>Sample Data Provider</localizedName>
   <localizedDescription>Example of a data provider</localizedDescription>
  </dataProvider>
  <dataProvider resourceType="urn:oracle:wcps:conductor:provider:dataProvider">
   <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders"
     rel="urn:oracle:webcenter:parent"
     resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/Act
ivityGraphProvider"
     rel="self"
     resourceType="urn:oracle:wcps:conductor:provider:dataProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/ActivityGraphProvider?projection={projection}"/>
```

```
      </links>
      <name>ActivityGraphProvider</name>
      <localizedName>Activity Graph</localizedName>
      <localizedDescription>Activity Graph Adapter</localizedDescription>
    </dataProvider>
    <dataProvider resourceType="urn:oracle:wcps:conductor:provider:dataProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:dataProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider?projection={projection}"/>
      </links>
      <name>oracle.PropertiesServiceProvider</name>
      <localizedName>Property Service Data Provider</localizedName>
      <localizedDescription>Data provider implementation to integrate the
properties service for use in scenarios. </localizedDescription>
    </dataProvider>
  </items>
</dataProviders>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projectio
n=summary
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=ylp2M27pSyLJPv2X4cn9RYy7NRyftzz2vs7VCyJ1NQKJl4XQnjXd!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 23:07:10 GMT

{
  "dataProviders" : [ {
    "name" : "CMISProvider",
    "localizedName" : "Universal Content Provider (CMIS)",
    "localizedDescription" : "Provides access to content over CMIS connections.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
```

```
on={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/CMISProv
ider?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/CMISProv
ider",
      "rel" : "self"
    } ]
  }, {
    "name" : "SampleProvider",
    "localizedName" : "Sample Data Provider",
    "localizedDescription" : "Example of a data provider",
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/SamplePr
ovider?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/SamplePr
ovider",
      "rel" : "self"
    } ]
  }, {
    "name" : "ActivityGraphProvider",
    "localizedName" : "Activity Graph",
    "localizedDescription" : "Activity Graph Adapter",
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/Activity
GraphProvider?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/Activity
GraphProvider",
      "rel" : "self"
    } ]
  }, {
    "name" : "oracle.PropertiesServiceProvider",
    "localizedName" : "Property Service Data Provider",
    "localizedDescription" : "Data provider implementation to integrate the
properties service for use in scenarios. ",
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider",
      "rel" : "self"
    } ]
  } ],
  "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on=summary&startIndex=0&itemsPerPage=10",
    "rel" : "self"
  } ]
}
```

72.2.1.2 Getting a Single Data Provider's Metadata (GET)

XML

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
opertiesServiceProvider?projection=summary
accept-language: en
content-type: application/xml
accept: application/xml
```

Response:

```
Status Code:200
Content-Length: 5792
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=L3b2M25L67PvznfyQNqHcyPh2J11rP51MMYlL1h80GvWsPxlHPvY!822326988;
path=/wcps; HttpOnly
Content-Type: application/xml
Date: Wed, 13 Oct 2010 22:58:48 GMT

<?xml version="1.0" encoding="UTF-8"?>
<dataProvider resourceType="urn:oracle:wcps:conductor:provider:dataProvider">
  <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders"
      rel="urn:oracle:webcenter:parent"
      resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider?projection=summary"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:provider:dataProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:providerConnections"
      resourceType="urn:oracle:wcps:conductor:provider:providerConnections"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:providerConnection"
      resourceType="urn:oracle:wcps:conductor:provider:providerConnection"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections/{connection-name}?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:connectionResources"
      resourceType="urn:oracle:wcps:conductor:provider:connectionResources"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections/{connection-name}/resources?projection={projecti
on}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:connectionResource"
      resourceType="urn:oracle:wcps:conductor:provider:connectionResource"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections/{connection-name}/resources/{resource-name}?proj
ection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:resourceMethods"
      resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections/{connection-name}/resources/{resource-name}/meth
ods?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:resourceMethod"
      resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
```

```
iders/{provider-name}/connections/{connection-name}/resources/{resource-name}/meth
ods/{method-name}?projection={projection}"/>
  </links>
  <name>oracle.PropertiesServiceProvider</name>
  <localizedName>Property Service Data Provider</localizedName>
  <localizedDescription>Data provider implementation to integrate the properties
service for use in scenarios. </localizedDescription>
  <providerConnections
resourceType="urn:oracle:wcps:conductor:provider:providerConnections">
    <links>
      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider"
        rel="urn:oracle:webcenter:parent"
        resourceType="urn:oracle:wcps:conductor:provider:dataProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider?projection={projection}"/>
      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections"
        rel="self"
        resourceType="urn:oracle:wcps:conductor:provider:providerConnections"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections?projection={projection}"/>
    </links>
    <items>
      <providerConnection
resourceType="urn:oracle:wcps:conductor:provider:providerConnection">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:providerConnections"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections?projection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/metadata"
            rel="urn:oracle:wcps:conductor:provider:connectionMetadata"
            resourceType="urn:oracle:wcps:conductor:provider:connectionMetadata"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/metadata?proje
ction={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:providerConnection"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection?projection={pr
ojection}"/>
        </links>
        <name>LocalServerConnection</name>
      </providerConnection>
    </items>
  </providerConnections>
</dataProvider>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
opertiesServiceProvider?projection=details
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=R1P2M27Qd09Wh86s5rGdDFfBcbKtftPKvpdMsN2gcpLRN7XPyDnQ!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 23:07:12 GMT

{
  "name" : "oracle.PropertiesServiceProvider",
  "localizedName" : "Property Service Data Provider",
  "localizedDescription" : "Data provider implementation to integrate the
properties service for use in scenarios. ",
  "providerConnections" : [ {
    "name" : "LocalServerConnection",
    "connectionResources" : [ {
      "name" : "GetPropertiesResource",
      "resourceMethods" : {
        "resourceMethods" : [ {
          "name" : "GetProperty",
          "uniqueName" : "GetProperty(namespace,definition,set,property)",
          "returnType" : "java.io.Serializable",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "namespace",
            "localizedDescription" : "The namespace in which the property set
definition and property set exists."
          }, {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          }, {
            "type" : "java.lang.String",
            "name" : "set",
            "localizedDescription" : "The property set name."
          }, {
            "type" : "java.lang.String",
            "name" : "property",
            "localizedDescription" : "The property name."
          } ],
          "localizedDescription" : "Retrieves a property set for the current (or
specified) namespace, property set definition name, and property set name, and
property name.  If no namespace, property set definition, property set and
property exists\tnull will be returned.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(namespace,definition,set,property)?projection={projec
tion}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(namespace,definition,set,property)",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetProperty",
          "uniqueName" : "GetProperty(definition,set,property)",
          "returnType" : "java.io.Serializable",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          }, {
            "type" : "java.lang.String",
            "name" : "set",
            "localizedDescription" : "The property set name."
          }, {
            "type" : "java.lang.String",
            "name" : "property",
            "localizedDescription" : "The property name."
          } ],
          "localizedDescription" : "Retrieves a property set for the current (or
specified) namespace, property set definition name, and property set name, and
property name.  If no namespace, property set definition, property set and
property exists\tnull will be returned.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(definition,set,property)?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(definition,set,property)",
            "rel" : "self"
          } ]
        }, {
          "name" : "execute",
          "uniqueName" : "execute()",
          "returnType" : "java.lang.Object",
          "parameters" : [ ],
          "localizedDescription" : "This is the default method executed if no
method is specified, which currently returns nothing.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/execute()?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/execute()",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetPropertySet",
          "uniqueName" : "GetPropertySet(definition,set)",
          "returnType" : "java.util.Map",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          }, {
            "type" : "java.lang.String",
            "name" : "set",
            "localizedDescription" : "The property set name."
          } ],
          "localizedDescription" : "Retrieves a property set for the current (or
specified) namespace, property set definition name, and property set name. If no
namespace, property set definition, or property set exists, null will be
returned.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(definition,set)?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(definition,set)",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetPropertySet",
          "uniqueName" : "GetPropertySet(namespace,definition,set)",
          "returnType" : "java.util.Map",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "namespace",
            "localizedDescription" : "The namespace in which the property set
definition and property set exists."
          }, {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          }, {
            "type" : "java.lang.String",
            "name" : "set",
            "localizedDescription" : "The property set name."
          } ],
          "localizedDescription" : "Retrieves a property set for the current (or
specified) namespace, property set definition name, and property set name. If no
namespace, property set definition, or property set exists, null will be
returned.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
```

```
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(namespace,definition,set)?projection={projection}"
,
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(namespace,definition,set)",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetPropertySets",
          "uniqueName" : "GetPropertySets(definition)",
          "returnType" : "java.util.Map",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          } ],
          "localizedDescription" : "Retrieves a Map of property sets for the
current (or specified) namespace and property set definition name that is keyed by
property set name. The size and start index of this list will be within the
boundaries of the specified start index and page size specified in the request.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(definition)?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(definition)",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetPropertySets",
          "uniqueName" : "GetPropertySets(namespace,definition)",
          "returnType" : "java.util.Map",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "namespace",
            "localizedDescription" : "The namespace in which the property set 
definition and property set exists."
          }, {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          } ],
          "localizedDescription" : "Retrieves a Map of property sets for the 
current (or specified) namespace and property set definition name that is keyed by 
property set name. The size and start index of this list will be within the 
boundaries of the specified start index and page size specified in the request.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(namespace,definition)?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(namespace,definition)",
            "rel" : "self"
          } ]
        } ],
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
        "links" : [ {
          "resourceType" : 
"urn:oracle:wcps:conductor:provider:connectionResource",
          "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource?projection={projection}",
          "capabilities" : "urn:oracle:restframework:read",
          "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource",
          "rel" : "urn:oracle:webcenter:parent"
        }, {
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
          "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
```

```
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
          "capabilities" : "urn:oracle:restframework:read",
          "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
          "rel" : "self"
        } ]
      },
      "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
      "links" : [ {
        "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResources",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources?projection={p
rojection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources",
        "rel" : "urn:oracle:webcenter:parent"
      }, {
        "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource",
        "rel" : "self"
      } ]
    } ],
    "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnection",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnections",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:connectionMetadata",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/metadata?projection={pr
ojection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/metadata",
      "rel" : "urn:oracle:wcps:conductor:provider:connectionMetadata"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnection",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection?projection={projection}
",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection",
      "rel" : "self"
    } ]
  } ],
  "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
    "rel" : "urn:oracle:webcenter:parent"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider?projection=details",
    "rel" : "self"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnections",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:providerConnections"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnection",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:providerConnection"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResources",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}/resources?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:connectionResources"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}/resources/{resource-name}?projection={p
rojection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:connectionResource"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}/resources/{resource-name}/methods?proje
ction={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:resourceMethods"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}/resources/{resource-name}/methods/{meth
od-name}?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:resourceMethod"
  } ]
}
```

72.2.1.3 Getting Information About a Data Provider Connection (GET)

XML

```
Request:
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
opertiesServiceProvider/connections/LocalServerConnection?projection=summary
accept-language: en
content-type: application/xml
accept: application/xml

Response:
Status Code:200
Content-Length: 3896
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=QGswM25H1GLC61Qvbt08HLfJhfJdN50TSV8lRzWhpvbJG0vFJtSN!822326988;
path=/wcps; HttpOnly
Content-Type: application/xml
Date: Wed, 13 Oct 2010 22:58:47 GMT

<?xml version="1.0" encoding="UTF-8"?>
<connection resourceType="urn:oracle:wcps:conductor:provider:providerConnection">
  <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections"
      rel="urn:oracle:webcenter:parent"
      resourceType="urn:oracle:wcps:conductor:provider:providerConnections"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/metadata"
      rel="urn:oracle:wcps:conductor:provider:connectionMetadata"
      resourceType="urn:oracle:wcps:conductor:provider:connectionMetadata"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
```

```
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/metadata?proje
ction={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection?projection=summary
"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:provider:providerConnection"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection?projection={pr
ojection}"/>
  </links>
  <name>LocalServerConnection</name>
  <connectionResources
resourceType="urn:oracle:wcps:conductor:provider:connectionResources">
    <links>
      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection"
        rel="urn:oracle:webcenter:parent"
        resourceType="urn:oracle:wcps:conductor:provider:providerConnection"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection?projection={pr
ojection}"/>
      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources"
        rel="self"
        resourceType="urn:oracle:wcps:conductor:provider:connectionResources"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources?proj
ection={projection}"/>
    </links>
    <items>
      <connectionResource
resourceType="urn:oracle:wcps:conductor:provider:connectionResource">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:connectionResources"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources?proj
ection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:connectionResource"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource?projection={projection}"/>
        </links>
        <name>GetPropertiesResource</name>
      </connectionResource>
    </items>
  </connectionResources>
</connection>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
opertiesServiceProvider/connections/LocalServerConnection?projection=summary
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=tLqRM27fHTGT9nxHfW1TyHJv3522rhw84Z5RRcymb1dy3pLMFgp6!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 23:07:11 GMT
```

```
{
  "name" : "LocalServerConnection",
  "connectionResources" : [ {
    "name" : "GetPropertiesResource",
    "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResources",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources?projection={p
rojection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource",
      "rel" : "self"
    } ]
  } ],
  "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnection",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnections",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections",
    "rel" : "urn:oracle:webcenter:parent"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:connectionMetadata",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/metadata?projection={pr
ojection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/metadata",
    "rel" : "urn:oracle:wcps:conductor:provider:connectionMetadata"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnection",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection?projection={projection}
",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection?projection=summary",
    "rel" : "self"
  } ]
}
```

72.2.1.4 Getting Information about an Executable Resource for a Data Provider and Connection (GET)

XML

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
opertiesServiceProvider/connections/LocalServerConnection/resources/GetPropertiesR
esource?projection=summary
accept-language: en
content-type: application/xml
accept: application/xml
```

Response:

```
Status Code:200
Content-Length: 11964
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=6NMkM25Ljb1yWPTMTSyMYksJjhtVKR90BhTv5MvGVjDHCVGyHGQG!822326988;
path=/wcps; HttpOnly
Content-Type: application/xml
Date: Wed, 13 Oct 2010 22:58:48 GMT

<?xml version="1.0" encoding="UTF-8"?>
<connectionResource
resourceType="urn:oracle:wcps:conductor:provider:connectionResource">
  <links>
```

```
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources"
      rel="urn:oracle:webcenter:parent"
      resourceType="urn:oracle:wcps:conductor:provider:connectionResources"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources?proj
ection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource?projection=summary"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:provider:connectionResource"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource?projection={projection}"/>
  </links>
  <name>GetPropertiesResource</name>
  <resourceMethods
resourceType="urn:oracle:wcps:conductor:provider:resourceMethods">
    <links>
      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource"
        rel="urn:oracle:webcenter:parent"
        resourceType="urn:oracle:wcps:conductor:provider:connectionResource"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource?projection={projection}"/>
      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
        rel="self"
        resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
    </links>
    <items>
      <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"
```

```
href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetProperty(namespace,definition,set,property)"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetProperty(namespace,definition,set,property)?projectio
n={projection}"/>
        </links>
        <name>GetProperty</name>
        <uniqueName>GetProperty(namespace,definition,set,property)</uniqueName>
        <parameters/>
      </resourceMethod>
      <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetProperty(definition,set,property)"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetProperty(definition,set,property)?projection={project
ion}"/>
        </links>
        <name>GetProperty</name>
        <uniqueName>GetProperty(definition,set,property)</uniqueName>
        <parameters/>
      </resourceMethod>
      <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
```

```
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/execute()"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/execute()?projection={projection}"/>
        </links>
        <name>execute</name>
        <uniqueName>execute()</uniqueName>
        <parameters/>
      </resourceMethod>
      <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetPropertySet(definition,set)"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetPropertySet(definition,set)?projection={projection}"/
>
        </links>
        <name>GetPropertySet</name>
        <uniqueName>GetPropertySet(definition,set)</uniqueName>
        <parameters/>
      </resourceMethod>
      <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetPropertySet(namespace,definition,set)"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetPropertySet(namespace,definition,set)?projection={pro
jection}"/>
        </links>
        <name>GetPropertySet</name>
        <uniqueName>GetPropertySet(namespace,definition,set)</uniqueName>
        <parameters/>
      </resourceMethod>
      <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetPropertySets(definition)"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetPropertySets(definition)?projection={projection}"/>
        </links>
        <name>GetPropertySets</name>
        <uniqueName>GetPropertySets(definition)</uniqueName>
        <parameters/>
      </resourceMethod>
      <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetPropertySets(namespace,definition)"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
```

```
ropertiesResource/methods/GetPropertySets(namespace,definition)?projection={projec
tion}"/>
        </links>
        <name>GetPropertySets</name>
        <uniqueName>GetPropertySets(namespace,definition)</uniqueName>
        <parameters/>
      </resourceMethod>
    </items>
  </resourceMethods>
</connectionResource>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
opertiesServiceProvider/connections/LocalServerConnection/resources/GetPropertiesR
esource?projection=summary
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=lP2dM27QwpNKslGK8xd818TLMmBhpdBzcLnZyncLXWLv6BrNjkq8!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 23:07:12 GMT

{
  "name" : "GetPropertiesResource",
  "resourceMethods" : {
    "resourceMethods" : [ {
      "name" : "GetProperty",
      "uniqueName" : "GetProperty(namespace,definition,set,property)",
      "parameters" : [ ],
      "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
      "links" : [ {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
        "rel" : "urn:oracle:webcenter:parent"
      }, {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(namespace,definition,set,property)?projection={projec
tion}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
```

```
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(namespace,definition,set,property)",
        "rel" : "self"
      } ]
    }, {
      "name" : "GetProperty",
      "uniqueName" : "GetProperty(definition,set,property)",
      "parameters" : [ ],
      "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
      "links" : [ {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
        "rel" : "urn:oracle:webcenter:parent"
      }, {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(definition,set,property)?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(definition,set,property)",
        "rel" : "self"
      } ]
    }, {
      "name" : "execute",
      "uniqueName" : "execute()",
      "parameters" : [ ],
      "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
      "links" : [ {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
        "rel" : "urn:oracle:webcenter:parent"
      }, {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/execute()?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
```

```
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/execute()",
        "rel" : "self"
      } ]
    }, {
      "name" : "GetPropertySet",
      "uniqueName" : "GetPropertySet(definition,set)",
      "parameters" : [ ],
      "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
      "links" : [ {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
        "rel" : "urn:oracle:webcenter:parent"
      }, {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(definition,set)?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(definition,set)",
        "rel" : "self"
      } ]
    }, {
      "name" : "GetPropertySet",
      "uniqueName" : "GetPropertySet(namespace,definition,set)",
      "parameters" : [ ],
      "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
      "links" : [ {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
        "rel" : "urn:oracle:webcenter:parent"
      }, {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(namespace,definition,set)?projection={projection}"
,
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(namespace,definition,set)",
        "rel" : "self"
      } ]
    }, {
      "name" : "GetPropertySets",
      "uniqueName" : "GetPropertySets(definition)",
      "parameters" : [ ],
      "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
      "links" : [ {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
        "rel" : "urn:oracle:webcenter:parent"
      }, {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(definition)?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(definition)",
        "rel" : "self"
      } ]
    }, {
      "name" : "GetPropertySets",
      "uniqueName" : "GetPropertySets(namespace,definition)",
      "parameters" : [ ],
      "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
      "links" : [ {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
        "rel" : "urn:oracle:webcenter:parent"
      }, {
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(namespace,definition)?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(namespace,definition)",
    "rel" : "self"
   } ]
  } ],
  "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
  "links" : [ {
   "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
   "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource?projection={projection}",
   "capabilities" : "urn:oracle:restframework:read",
   "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource",
   "rel" : "urn:oracle:webcenter:parent"
  }, {
   "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
   "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
   "capabilities" : "urn:oracle:restframework:read",
   "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
   "rel" : "self"
  } ]
 },
 "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
 "links" : [ {
  "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResources",
  "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources?projection={p
rojection}",
  "capabilities" : "urn:oracle:restframework:read",
  "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources",
  "rel" : "urn:oracle:webcenter:parent"
 }, {
  "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
  "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource?projection={projection}",
  "capabilities" : "urn:oracle:restframework:read",
  "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource?projection=summary",
  "rel" : "self"
 } ]
}
```

72.2.1.5 Getting Method Information for an Executable Resource for a Data Provider and Connection (GET)

XML

```
Request:
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
opertiesServiceProvider/connections/LocalServerConnection/resources/GetPropertiesR
esource/methods/GetPropertySet(namespace,definition,set)?projection=details
accept-language: en
content-type: application/xml
accept: application/xml

Response:
Status Code:200
Content-Length: 2243
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=rnBkM27d8dHMpZT4WdT0CLGythB2hRhQ2yjTmg6rh7BDfB1JTQjL!822326988;
path=/wcps; HttpOnly
Content-Type: application/xml
Date: Wed, 13 Oct 2010 23:07:09 GMT

<?xml version="1.0" encoding="UTF-8"?>
<resourceMethod resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
  <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
      rel="urn:oracle:webcenter:parent"
      resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetPropertySet(namespace,definition,set)?projection=details"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetPropertySet(namespace,definition,set)?projection={pro
jection}"/>
  </links>
  <name>GetPropertySet</name>
  <uniqueName>GetPropertySet(namespace,definition,set)</uniqueName>
  <localizedDescription>Retrieves a property set for the current (or specified)
namespace, property set definition name, and property set name. If no namespace,
property set definition, or property set exists, null will be
returned.</localizedDescription>
  <parameters>
    <parameter>
      <localizedDescription>The namespace in which the property set definition and
property set exists.</localizedDescription>
```

```
      <name>namespace</name>
      <type>java.lang.String</type>
    </parameter>
    <parameter>
      <localizedDescription>The property set definition
name.</localizedDescription>
      <name>definition</name>
      <type>java.lang.String</type>
    </parameter>
    <parameter>
      <localizedDescription>The property set name.</localizedDescription>
      <name>set</name>
      <type>java.lang.String</type>
    </parameter>
  </parameters>
  <returnType>java.util.Map</returnType>
</resourceMethod>
```

JSON

```
Request:
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
opertiesServiceProvider/connections/LocalServerConnection/resources/GetPropertiesR
esource/methods/GetPropertySet(namespace,definition,set)?projection=details
accept-language: en
content-type: application/json
accept: application/json

Response:
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=MD62M27BQLv9jxFR8K1SSXXyL70DwLGd7gpHvMh21xGM9gfppLR2!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 23:07:13 GMT

{
  "name" : "GetPropertySet",
  "uniqueName" : "GetPropertySet(namespace,definition,set)",
  "returnType" : "java.util.Map",
  "parameters" : [ {
    "type" : "java.lang.String",
    "name" : "namespace",
    "localizedDescription" : "The namespace in which the property set definition
and property set exists."
  }, {
    "type" : "java.lang.String",
    "name" : "definition",
    "localizedDescription" : "The property set definition name."
  }, {
    "type" : "java.lang.String",
    "name" : "set",
    "localizedDescription" : "The property set name."
  } ],
  "localizedDescription" : "Retrieves a property set for the current (or
specified) namespace, property set definition name, and property set name. If no
namespace, property set definition, or property set exists, null will be
returned.",
  "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
    "rel" : "urn:oracle:webcenter:parent"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(namespace,definition,set)?projection={projection}"
,
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(namespace,definition,set)?projection=details",
    "rel" : "self"
  } ]
}
```

72.2.1.6 Getting Entire Data Provider Information with Details Projection (GET)

XML

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
opertiesServiceProvider?projection=details
accept-language: en
content-type: application/xml
accept: application/xml
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=T5nQM27dHT1yGdzP7yMy25l0QGKDt95kXymntN83tfhT72n1gkcQ!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/xml
Date: Wed, 13 Oct 2010 23:07:09 GMT

<?xml version="1.0" encoding="UTF-8"?>
<dataProvider resourceType="urn:oracle:wcps:conductor:provider:dataProvider">
  <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders"
      rel="urn:oracle:webcenter:parent"
      resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
```

```
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider?projection=details"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:provider:dataProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:providerConnections"
      resourceType="urn:oracle:wcps:conductor:provider:providerConnections"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:providerConnection"
      resourceType="urn:oracle:wcps:conductor:provider:providerConnection"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections/{connection-name}?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:connectionResources"
      resourceType="urn:oracle:wcps:conductor:provider:connectionResources"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections/{connection-name}/resources?projection={projecti
on}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:connectionResource"
      resourceType="urn:oracle:wcps:conductor:provider:connectionResource"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections/{connection-name}/resources/{resource-name}?proj
ection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:resourceMethods"
      resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections/{connection-name}/resources/{resource-name}/meth
ods?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"
      rel="urn:oracle:wcps:conductor:provider:resourceMethod"
      resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProv
iders/{provider-name}/connections/{connection-name}/resources/{resource-name}/meth
ods/{method-name}?projection={projection}"/>
  </links>
  <name>oracle.PropertiesServiceProvider</name>
  <localizedName>Property Service Data Provider</localizedName>
  <localizedDescription>Data provider implementation to integrate the properties
service for use in scenarios. </localizedDescription>
  <providerConnections
resourceType="urn:oracle:wcps:conductor:provider:providerConnections">
    <links>
      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider"
        rel="urn:oracle:webcenter:parent"
        resourceType="urn:oracle:wcps:conductor:provider:dataProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider?projection={projection}"/>
```

```
      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections"
        rel="self"
        resourceType="urn:oracle:wcps:conductor:provider:providerConnections"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections?projection={projection}"/>
    </links>
    <items>
      <providerConnection
resourceType="urn:oracle:wcps:conductor:provider:providerConnection">
        <links>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections"
            rel="urn:oracle:webcenter:parent"
            resourceType="urn:oracle:wcps:conductor:provider:providerConnections"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections?projection={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/metadata"
            rel="urn:oracle:wcps:conductor:provider:connectionMetadata"
            resourceType="urn:oracle:wcps:conductor:provider:connectionMetadata"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/metadata?proje
ction={projection}"/>
          <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection"
            rel="self"
            resourceType="urn:oracle:wcps:conductor:provider:providerConnection"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection?projection={pr
ojection}"/>
        </links>
        <name>LocalServerConnection</name>
        <connectionResources
resourceType="urn:oracle:wcps:conductor:provider:connectionResources">
          <links>
            <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection"
              rel="urn:oracle:webcenter:parent"
              resourceType="urn:oracle:wcps:conductor:provider:providerConnection"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection?projection={pr
ojection}"/>
            <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources"
              rel="self"

resourceType="urn:oracle:wcps:conductor:provider:connectionResources"
```

```
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources?proj
ection={projection}"/>
          </links>
          <items>
            <connectionResource
resourceType="urn:oracle:wcps:conductor:provider:connectionResource">
              <links>
                <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources"
                  rel="urn:oracle:webcenter:parent"

resourceType="urn:oracle:wcps:conductor:provider:connectionResources"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources?proj
ection={projection}"/>
                <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource"
                  rel="self"

resourceType="urn:oracle:wcps:conductor:provider:connectionResource"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource?projection={projection}"/>
              </links>
              <name>GetPropertiesResource</name>
              <resourceMethods
resourceType="urn:oracle:wcps:conductor:provider:resourceMethods">
                <links>
                  <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource"
                    rel="urn:oracle:webcenter:parent"

resourceType="urn:oracle:wcps:conductor:provider:connectionResource"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource?projection={projection}"/>
                  <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
                    rel="self"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
                </links>
                <items>
                  <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
```

```
                    <links>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
                        rel="urn:oracle:webcenter:parent"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetProperty(namespace,definition,set,property)"
                        rel="self"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetProperty(namespace,definition,set,property)?projectio
n={projection}"/>
                    </links>
                    <name>GetProperty</name>

<uniqueName>GetProperty(namespace,definition,set,property)</uniqueName>
                    <localizedDescription>Retrieves a property set for the current
(or specified) namespace, property set definition name, and property set name, and
property name.  If no namespace, property set definition, property set and
property existsnull will be returned.</localizedDescription>
                    <parameters>
                      <parameter>
                        <localizedDescription>The namespace in which the property
set definition and property set exists.</localizedDescription>
                        <name>namespace</name>
                        <type>java.lang.String</type>
                      </parameter>
                      <parameter>
                        <localizedDescription>The property set definition
name.</localizedDescription>
                        <name>definition</name>
                        <type>java.lang.String</type>
                      </parameter>
                      <parameter>
                        <localizedDescription>The property set
name.</localizedDescription>
                        <name>set</name>
                        <type>java.lang.String</type>
                      </parameter>
                      <parameter>
                        <localizedDescription>The property
name.</localizedDescription>
                        <name>property</name>
                        <type>java.lang.String</type>
                      </parameter>
                    </parameters>
                    <returnType>java.io.Serializable</returnType>
                  </resourceMethod>
                  <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
                    <links>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
                        rel="urn:oracle:webcenter:parent"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetProperty(definition,set,property)"
                        rel="self"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetProperty(definition,set,property)?projection={project
ion}"/>
                    </links>
                    <name>GetProperty</name>
                    <uniqueName>GetProperty(definition,set,property)</uniqueName>
                    <localizedDescription>Retrieves a property set for the current
(or specified) namespace, property set definition name, and property set name, and
property name.  If no namespace, property set definition, property set and
property existsnull will be returned.</localizedDescription>
                    <parameters>
                      <parameter>
                        <localizedDescription>The property set definition
name.</localizedDescription>
                        <name>definition</name>
                        <type>java.lang.String</type>
                      </parameter>
                      <parameter>
                        <localizedDescription>The property set
name.</localizedDescription>
                        <name>set</name>
                        <type>java.lang.String</type>
                      </parameter>
                      <parameter>
                        <localizedDescription>The property
name.</localizedDescription>
                        <name>property</name>
                        <type>java.lang.String</type>
                      </parameter>
                    </parameters>
                    <returnType>java.io.Serializable</returnType>
                  </resourceMethod>
                  <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
                    <links>
                      <link capabilities="urn:oracle:restframework:read"
```

```
href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
                        rel="urn:oracle:webcenter:parent"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/execute()"
                        rel="self"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/execute()?projection={projection}"/>
                    </links>
                    <name>execute</name>
                    <uniqueName>execute()</uniqueName>
                    <localizedDescription>This is the default method executed if
no method is specified, which currently returns nothing.</localizedDescription>
                    <parameters/>
                    <returnType>java.lang.Object</returnType>
                  </resourceMethod>
                  <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
                    <links>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
                        rel="urn:oracle:webcenter:parent"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetPropertySet(definition,set)"
                        rel="self"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetPropertySet(definition,set)?projection={projection}"/
>
                    </links>
                    <name>GetPropertySet</name>
                    <uniqueName>GetPropertySet(definition,set)</uniqueName>
                    <localizedDescription>Retrieves a property set for the current
(or specified) namespace, property set definition name, and property set name. If
no namespace, property set definition, or property set exists, null will be
```

```
returned.</localizedDescription>
                    <parameters>
                      <parameter>
                        <localizedDescription>The property set definition
name.</localizedDescription>
                        <name>definition</name>
                        <type>java.lang.String</type>
                      </parameter>
                      <parameter>
                        <localizedDescription>The property set
name.</localizedDescription>
                        <name>set</name>
                        <type>java.lang.String</type>
                      </parameter>
                    </parameters>
                    <returnType>java.util.Map</returnType>
                  </resourceMethod>
                  <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
                    <links>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
                        rel="urn:oracle:webcenter:parent"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetPropertySet(namespace,definition,set)"
                        rel="self"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetPropertySet(namespace,definition,set)?projection={pro
jection}"/>
                    </links>
                    <name>GetPropertySet</name>

<uniqueName>GetPropertySet(namespace,definition,set)</uniqueName>
                    <localizedDescription>Retrieves a property set for the current
(or specified) namespace, property set definition name, and property set name. If
no namespace, property set definition, or property set exists, null will be
returned.</localizedDescription>
                    <parameters>
                      <parameter>
                        <localizedDescription>The namespace in which the property
set definition and property set exists.</localizedDescription>
                        <name>namespace</name>
                        <type>java.lang.String</type>
                      </parameter>
                      <parameter>
                        <localizedDescription>The property set definition
```

```
name.</localizedDescription>
                        <name>definition</name>
                        <type>java.lang.String</type>
                      </parameter>
                      <parameter>
                        <localizedDescription>The property set
name.</localizedDescription>
                        <name>set</name>
                        <type>java.lang.String</type>
                      </parameter>
                    </parameters>
                    <returnType>java.util.Map</returnType>
                  </resourceMethod>
                  <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
                    <links>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
                        rel="urn:oracle:webcenter:parent"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetPropertySets(definition)"
                        rel="self"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetPropertySets(definition)?projection={projection}"/>
                    </links>
                    <name>GetPropertySets</name>
                    <uniqueName>GetPropertySets(definition)</uniqueName>
                    <localizedDescription>Retrieves a Map of property sets for the
current (or specified) namespace and property set definition name that is keyed by
property set name. The size and start index of this list will be within the
boundaries of the specified start index and page size specified in the
request.</localizedDescription>
                    <parameters>
                      <parameter>
                        <localizedDescription>The property set definition
name.</localizedDescription>
                        <name>definition</name>
                        <type>java.lang.String</type>
                      </parameter>
                    </parameters>
                    <returnType>java.util.Map</returnType>
                  </resourceMethod>
                  <resourceMethod
resourceType="urn:oracle:wcps:conductor:provider:resourceMethod">
                    <links>
                      <link capabilities="urn:oracle:restframework:read"
```

```
href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods"
                        rel="urn:oracle:webcenter:parent"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethods"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods?projection={projection}"/>
                      <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/ora
cle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetPrope
rtiesResource/methods/GetPropertySets(namespace,definition)"
                        rel="self"

resourceType="urn:oracle:wcps:conductor:provider:resourceMethod"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
/oracle.PropertiesServiceProvider/connections/LocalServerConnection/resources/GetP
ropertiesResource/methods/GetPropertySets(namespace,definition)?projection={projec
tion}"/>
                    </links>
                    <name>GetPropertySets</name>
                    <uniqueName>GetPropertySets(namespace,definition)</uniqueName>
                    <localizedDescription>Retrieves a Map of property sets for the
current (or specified) namespace and property set definition name that is keyed by
property set name. The size and start index of this list will be within the
boundaries of the specified start index and page size specified in the
request.</localizedDescription>
                    <parameters>
                      <parameter>
                        <localizedDescription>The namespace in which the property
set definition and property set exists.</localizedDescription>
                        <name>namespace</name>
                        <type>java.lang.String</type>
                      </parameter>
                      <parameter>
                        <localizedDescription>The property set definition
name.</localizedDescription>
                        <name>definition</name>
                        <type>java.lang.String</type>
                      </parameter>
                    </parameters>
                    <returnType>java.util.Map</returnType>
                  </resourceMethod>
                </items>
              </resourceMethods>
            </connectionResource>
          </items>
        </connectionResources>
      </providerConnection>
    </items>
  </providerConnections>
</dataProvider>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.Pr
```

```
opertiesServiceProvider?projection=details
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=GvbXM27BZxQhPJQqnv9Qmsn1j2G1Lvzhc67hpLp4gnjhjsypnTTm!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 23:07:13 GMT

{
  "name" : "oracle.PropertiesServiceProvider",
  "localizedName" : "Property Service Data Provider",
  "localizedDescription" : "Data provider implementation to integrate the
properties service for use in scenarios. ",
  "providerConnections" : [ {
    "name" : "LocalServerConnection",
    "connectionResources" : [ {
      "name" : "GetPropertiesResource",
      "resourceMethods" : {
        "resourceMethods" : [ {
          "name" : "GetProperty",
          "uniqueName" : "GetProperty(namespace,definition,set,property)",
          "returnType" : "java.io.Serializable",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "namespace",
            "localizedDescription" : "The namespace in which the property set
definition and property set exists."
          }, {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          }, {
            "type" : "java.lang.String",
            "name" : "set",
            "localizedDescription" : "The property set name."
          }, {
            "type" : "java.lang.String",
            "name" : "property",
            "localizedDescription" : "The property name."
          } ],
          "localizedDescription" : "Retrieves a property set for the current (or
specified) namespace, property set definition name, and property set name, and
property name.  If no namespace, property set definition, property set and
property exists\tnull will be returned.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
```

```
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(namespace,definition,set,property)?projection={projec
tion}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(namespace,definition,set,property)",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetProperty",
          "uniqueName" : "GetProperty(definition,set,property)",
          "returnType" : "java.io.Serializable",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          }, {
            "type" : "java.lang.String",
            "name" : "set",
            "localizedDescription" : "The property set name."
          }, {
            "type" : "java.lang.String",
            "name" : "property",
            "localizedDescription" : "The property name."
          } ],
          "localizedDescription" : "Retrieves a property set for the current (or
specified) namespace, property set definition name, and property set name, and
property name.  If no namespace, property set definition, property set and
property exists\tnull will be returned.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(definition,set,property)?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
```

```
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetProperty(definition,set,property)",
            "rel" : "self"
          } ]
        }, {
          "name" : "execute",
          "uniqueName" : "execute()",
          "returnType" : "java.lang.Object",
          "parameters" : [ ],
          "localizedDescription" : "This is the default method executed if no
method is specified, which currently returns nothing.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/execute()?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/execute()",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetPropertySet",
          "uniqueName" : "GetPropertySet(definition,set)",
          "returnType" : "java.util.Map",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          }, {
            "type" : "java.lang.String",
            "name" : "set",
            "localizedDescription" : "The property set name."
          } ],
          "localizedDescription" : "Retrieves a property set for the current (or
specified) namespace, property set definition name, and property set name. If no
namespace, property set definition, or property set exists, null will be
returned.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
```

```
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(definition,set)?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(definition,set)",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetPropertySet",
          "uniqueName" : "GetPropertySet(namespace,definition,set)",
          "returnType" : "java.util.Map",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "namespace",
            "localizedDescription" : "The namespace in which the property set
definition and property set exists."
          }, {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          }, {
            "type" : "java.lang.String",
            "name" : "set",
            "localizedDescription" : "The property set name."
          } ],
          "localizedDescription" : "Retrieves a property set for the current (or
specified) namespace, property set definition name, and property set name. If no
namespace, property set definition, or property set exists, null will be
returned.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
```

```
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(namespace,definition,set)?projection={projection}"
,
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySet(namespace,definition,set)",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetPropertySets",
          "uniqueName" : "GetPropertySets(definition)",
          "returnType" : "java.util.Map",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          } ],
          "localizedDescription" : "Retrieves a Map of property sets for the
current (or specified) namespace and property set definition name that is keyed by
property set name. The size and start index of this list will be within the
boundaries of the specified start index and page size specified in the request.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(definition)?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(definition)",
            "rel" : "self"
          } ]
        }, {
          "name" : "GetPropertySets",
          "uniqueName" : "GetPropertySets(namespace,definition)",
          "returnType" : "java.util.Map",
          "parameters" : [ {
            "type" : "java.lang.String",
            "name" : "namespace",
            "localizedDescription" : "The namespace in which the property set
definition and property set exists."
          }, {
            "type" : "java.lang.String",
            "name" : "definition",
            "localizedDescription" : "The property set definition name."
          } ],
          "localizedDescription" : "Retrieves a Map of property sets for the 
current (or specified) namespace and property set definition name that is keyed by 
property set name. The size and start index of this list will be within the 
boundaries of the specified start index and page size specified in the request.",
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
          "links" : [ {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
            "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
            "rel" : "urn:oracle:webcenter:parent"
          }, {
            "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
            "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(namespace,definition)?projection={projection}",
            "capabilities" : "urn:oracle:restframework:read",
            "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods/GetPropertySets(namespace,definition)",
            "rel" : "self"
          } ]
        } ],
        "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
        "links" : [ {
          "resourceType" : 
"urn:oracle:wcps:conductor:provider:connectionResource",
          "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource?projection={projection}",
          "capabilities" : "urn:oracle:restframework:read",
          "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource",
          "rel" : "urn:oracle:webcenter:parent"
        }, {
          "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
          "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods?projection={projection}",
          "capabilities" : "urn:oracle:restframework:read",
          "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource/methods",
          "rel" : "self"
        } ]
      },
      "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
      "links" : [ {
        "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResources",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources?projection={p
rojection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources",
        "rel" : "urn:oracle:webcenter:parent"
      }, {
        "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
        "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource?projection={projection}",
        "capabilities" : "urn:oracle:restframework:read",
        "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/resources/GetProperties
Resource",
        "rel" : "self"
      } ]
    } ],
    "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnection",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnections",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:connectionMetadata",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/metadata?projection={pr
ojection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection/metadata",
      "rel" : "urn:oracle:wcps:conductor:provider:connectionMetadata"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnection",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection?projection={projection}
",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider/connections/LocalServerConnection",
      "rel" : "self"
    } ]
  } ],
  "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
    "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
    "rel" : "urn:oracle:webcenter:parent"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProvider",
    "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders/oracle.P
ropertiesServiceProvider?projection=details",
    "rel" : "self"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnections",
    "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:providerConnections"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:providerConnection",
    "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:providerConnection"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResources",
    "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}/resources?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:connectionResources"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:connectionResource",
    "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}/resources/{resource-name}?projection={p
rojection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:connectionResource"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethods",
    "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}/resources/{resource-name}/methods?proje
ction={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:resourceMethods"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:resourceMethod",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/{namespace}/dataProviders/{pr
ovider-name}/connections/{connection-name}/resources/{resource-name}/methods/{meth
od-name}?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "rel" : "urn:oracle:wcps:conductor:provider:resourceMethod"
  } ]
}
```

72.2.2 Using the Function Provider Management APIs

This section provides examples of using the Conductor's function provider APIs, and contains the following subsections:

- Section 72.2.2.1, "Getting a Collection of Function Providers (GET)"
- Section 72.2.2.2, "Getting Metadata for a Single Function Provider (GET)"

72.2.2.1 Getting a Collection of Function Providers (GET)

XML

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proje
ction=summary
accept-language: en
content-type: application/xml
accept: application/xml
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=1NxqM2GHfPhT6VydXnQctrgCJ7FmxMLD3pPrRCgPrCLGRJGk9Rk5!2098846330;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/xml
Date: Wed, 13 Oct 2010 23:51:35 GMT

<?xml version="1.0" encoding="UTF-8"?>
<functionProviders
resourceType="urn:oracle:wcps:conductor:provider:functionProviders">
  <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
?projection=summary"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
  </links>
  <items>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
```

```
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/agfunction:filterRecsByScore"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/agfunction:filterRecsByScore?projection={projection}"/>
      </links>
      <category>agfunction</category>

<example>${agfunction:filterRecsByScore(recommendations,cutoffScore)}</example>
      <localizedDescription>Filter out Recommendations whose score is &gt;= the
input score</localizedDescription>
      <name>filterRecsByScore</name>
      <parameters/>

<returnType>oracle.wcps.activity.agrest.spy.jaxb.Recommendations</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/agfunction:getCMISLinksFromCommonItems"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/agfunction:getCMISLinksFromCommonItems?projection={projection}"/>
      </links>
      <category>agfunction</category>
      <example>${agfunction:getCMISLinksFromCommonItems(results)}</example>
      <localizedDescription>Return a List of URLs representing the common items as
CMIS objects</localizedDescription>
      <name>getCMISLinksFromCommonItems</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"
```

```
href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/agfunction:getCMISLinksFromRecommendations"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/agfunction:getCMISLinksFromRecommendations?projection={projection}"/>
      </links>
      <category>agfunction</category>

<example>${agfunction:getCMISLinksFromRecommendations(recommendations)}</example>
      <localizedDescription>Return a List of URLs representing the CMIS
objects</localizedDescription>
      <name>getCMISLinksFromRecommendations</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/agfunction:getContentIDs"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/agfunction:getContentIDs?projection={projection}"/>
      </links>
      <category>agfunction</category>
      <example>${agfunction:getContentIDs(agResults)}</example>
      <localizedDescription>Extract content IDs from input objects.  Includes
content of all types (WC.document, WC.wiki)</localizedDescription>
      <name>getContentIDs</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/agfunction:getContentIDsFiltered"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/agfunction:getContentIDsFiltered?projection={projection}"/>
      </links>
      <category>agfunction</category>

<example>${agfunction:getContentIDsFiltered(agResults,excludeClassURN)}</example>
      <localizedDescription>Extract content IDs from input
objects</localizedDescription>
      <name>getContentIDsFiltered</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/cmisfunction:atomAsCMISObjects"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/cmisfunction:atomAsCMISObjects?projection={projection}"/>
      </links>
      <category>cmisfunction</category>
      <example>${cmisfunction:atomAsCMISObjects(atomFeed)}</example>
      <localizedDescription>ATOM feed as
List&lt;CMISObject&gt;</localizedDescription>
      <name>atomAsCMISObjects</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
```

```
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/cmisfunction:atomAsEntries"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/cmisfunction:atomAsEntries?projection={projection}"/>
      </links>
      <category>cmisfunction</category>
      <example>${cmisfunction:atomAsEntries(atomFeed)}</example>
      <localizedDescription>ATOM feed as
List&lt;org.apache.abdera.model.Entry&gt;</localizedDescription>
      <name>atomAsEntries</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/cmisfunction:atomAsFeed"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/cmisfunction:atomAsFeed?projection={projection}"/>
      </links>
      <category>cmisfunction</category>
      <example>${cmisfunction:atomAsFeed(atomFeed)}</example>
      <localizedDescription>ATOM feed as
org.apache.abdera.model.Feed</localizedDescription>
      <name>atomAsFeed</name>
      <parameters/>
      <returnType>org.apache.abdera.model.Feed</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/cmisfunction:atomAsStreamUrls"
```

```
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/cmisfunction:atomAsStreamUrls?projection={projection}"/>
      </links>
      <category>cmisfunction</category>
      <example>${cmisfunction:atomAsStreamUrls(atomFeed)}</example>
      <localizedDescription>ATOM feed as List&lt;String&gt; of
URLs</localizedDescription>
      <name>atomAsStreamUrls</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/cmisfunction:getCMISQueryForDocIDs"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/cmisfunction:getCMISQueryForDocIDs?projection={projection}"/>
      </links>
      <category>cmisfunction</category>
      <example>${cmisfunction:getCMISQueryForDocIDs(repository,ids)}</example>
      <localizedDescription>Construct a CMIS query in the form of 'IN' query
syntax that will retrieve the documents for the array of input doc
IDs.</localizedDescription>
      <name>getCMISQueryForDocIDs</name>
      <parameters/>
      <returnType>java.lang.String</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/cmisfunction:getCMISQueryForDocIDsFromFullID"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
```

```
ders/cmisfunction:getCMISQueryForDocIDsFromFullID?projection={projection}"/>
      </links>
      <category>cmisfunction</category>
      <example>${cmisfunction:getCMISQueryForDocIDsFromFullID(ids)}</example>
      <localizedDescription>Construct a CMIS query in the form of 'IN' query
syntax that will retrieve the documents for the array of input doc
IDs.</localizedDescription>
      <name>getCMISQueryForDocIDsFromFullID</name>
      <parameters/>
      <returnType>java.lang.String</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/collections:append"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/collections:append?projection={projection}"/>
      </links>
      <category>collections</category>
      <example>${collections:append(collection,item)}</example>
      <localizedDescription>Appends </localizedDescription>
      <name>append</name>
      <parameters/>
      <returnType>java.util.Collection</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/collections:new"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/collections:new?projection={projection}"/>
      </links>
      <category>collections</category>
      <example>${collections:new()}</example>
      <localizedDescription>Creates and returns a new
collection.</localizedDescription>
      <name>new</name>
      <parameters/>
      <returnType>java.util.Collection</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/collections:sort"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/collections:sort?projection={projection}"/>
      </links>
      <category>collections</category>
      <example>${collections:sort(list)}</example>
      <localizedDescription>Sorts the provided collection.</localizedDescription>
      <name>sort</name>
      <parameters/>
      <returnType>void</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/connectionsQA:getSampleConfig"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/connectionsQA:getSampleConfig?projection={projection}"/>
      </links>
      <category>connectionsQA</category>

<example>${connectionsQA:getSampleConfig(scenarioContext,connectionName)}</example
>
      <localizedDescription>Retrieves a sample configuration by
name.</localizedDescription>
      <name>getSampleConfig</name>
      <parameters/>

<returnType>oracle.wcps.test.providers.sample.SampleConnectionConfigImpl</returnTy
pe>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/connectionsQA:getSampleConfigs"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/connectionsQA:getSampleConfigs?projection={projection}"/>
      </links>
      <category>connectionsQA</category>
      <example>${connectionsQA:getSampleConfigs(scenarioContext)}</example>
      <localizedDescription>Retrieves all sample connection configurations for the
current namespace.</localizedDescription>
      <name>getSampleConfigs</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/connectionsQA:removeSampleConfig"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/connectionsQA:removeSampleConfig?projection={projection}"/>
      </links>
      <category>connectionsQA</category>

<example>${connectionsQA:removeSampleConfig(scenarioContext,connectionName)}</exam
ple>
      <localizedDescription>Removes a sample configuration with the specified name
in the current namespace.</localizedDescription>
      <name>removeSampleConfig</name>
      <parameters/>
      <returnType>void</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/connectionsQA:saveSampleConfig"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/connectionsQA:saveSampleConfig?projection={projection}"/>
      </links>
      <category>connectionsQA</category>

<example>${connectionsQA:saveSampleConfig(scenarioContext,connectionName,samplePro
pertyValue)}</example>
      <localizedDescription>Creates or saves a sample
configuration.</localizedDescription>
      <name>saveSampleConfig</name>
      <parameters/>

<returnType>oracle.wcps.test.providers.sample.SampleConnectionConfigImpl</returnTy
pe>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/magiceightball:response"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/magiceightball:response?projection={projection}"/>
      </links>
      <category>magiceightball</category>
      <example>${magiceightball:response(scenarioContext,responses)}</example>
      <localizedDescription>Provides clairvoyant responses to all your
questions</localizedDescription>
      <name>response</name>
      <parameters/>
      <returnType>java.lang.String</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/security:getUserRoles"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/security:getUserRoles?projection={projection}"/>
      </links>
      <category>security</category>
      <example>${security:getUserRoles()}</example>
      <localizedDescription>Returns an array of roles/groups that is part of the
current subject.</localizedDescription>
      <name>getUserRoles</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/security:isUserInRole"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/security:isUserInRole?projection={projection}"/>
      </links>
      <category>security</category>
      <example>${security:isUserInRole(role)}</example>
      <localizedDescription>Determines if the current user is a member in the
specified role or group name (role).</localizedDescription>
      <name>isUserInRole</name>
      <parameters/>
      <returnType>boolean</returnType>
    </functionProvider>
    <functionProvider
```

```
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/test:complexType"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/test:complexType?projection={projection}"/>
      </links>
      <category>test</category>
      <example>${test:complexType(arg0,arg1)}</example>
      <localizedDescription>Demonstrates how to return a complex
type.</localizedDescription>
      <name>complexType</name>
      <parameters/>
      <returnType>oracle.wcps.test.providers.functions.ComplexType</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/test:complexTypeList"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/test:complexTypeList?projection={projection}"/>
      </links>
      <category>test</category>
      <example>${test:complexTypeList(arg0)}</example>
      <localizedDescription>Demonstrates how to return a list of complex
types.</localizedDescription>
      <name>complexTypeList</name>
      <parameters/>
      <returnType>java.util.List</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"
```

```
href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/test:complexTypeMap"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/test:complexTypeMap?projection={projection}"/>
      </links>
      <category>test</category>
      <example>${test:complexTypeMap(arg0)}</example>
      <localizedDescription>Demonstrates how to return a map of complex
types.</localizedDescription>
      <name>complexTypeMap</name>
      <parameters/>
      <returnType>java.util.Map</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/test:concat"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/test:concat?projection={projection}"/>
      </links>
      <category>test</category>
      <example>${test:concat(arg0,arg1)}</example>
      <localizedDescription>Demonstrates how to return a complex
type.</localizedDescription>
      <name>concat</name>
      <parameters/>
      <returnType>java.lang.String</returnType>
    </functionProvider>
    <functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
      <links>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:webcenter:parent"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
```

```
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
/test:sleep"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/test:sleep?projection={projection}"/>
      </links>
      <category>test</category>
      <example>${test:sleep(arg0)}</example>
      <localizedDescription>Pauses the current thread for the specified number of
milliseconds.</localizedDescription>
      <name>sleep</name>
      <parameters/>
      <returnType>void</returnType>
    </functionProvider>
  </items>
</functionProviders>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proje
ction=summary
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=Q9VFM2GLn2ny2CxbKvxKXYbYTMT4zvJ3QMgP2DzxH0GSkfct76cC!2098846330;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 23:51:36 GMT

{
  "functionProviders" : [ {
    "parameters" : [ ],
    "name" : "filterRecsByScore",
    "returnType" : "oracle.wcps.activity.agrest.spy.jaxb.Recommendations",
    "category" : "agfunction",
    "example" : "${agfunction:filterRecsByScore(recommendations,cutoffScore)}",
    "localizedDescription" : "Filter out Recommendations whose score is >= the
input score",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/agfu
nction:filterRecsByScore?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/agfu
nction:filterRecsByScore",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "getCMISLinksFromCommonItems",
    "returnType" : "java.util.List",
    "category" : "agfunction",
    "example" : "${agfunction:getCMISLinksFromCommonItems(results)}",
    "localizedDescription" : "Return a List of URLs representing the common items
as CMIS objects",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/agfu
nction:getCMISLinksFromCommonItems?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/agfu
nction:getCMISLinksFromCommonItems",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "getCMISLinksFromRecommendations",
    "returnType" : "java.util.List",
    "category" : "agfunction",
    "example" : "${agfunction:getCMISLinksFromRecommendations(recommendations)}",
    "localizedDescription" : "Return a List of URLs representing the CMIS
objects",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
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      "template" :
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      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/agfu
nction:getCMISLinksFromRecommendations",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "getContentIDs",
    "returnType" : "java.util.List",
    "category" : "agfunction",
    "example" : "${agfunction:getContentIDs(agResults)}",
    "localizedDescription" : "Extract content IDs from input objects.  Includes
content of all types (WC.document, WC.wiki)",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
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ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
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      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/agfu
nction:getContentIDs?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/agfu
nction:getContentIDs",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "getContentIDsFiltered",
    "returnType" : "java.util.List",
    "category" : "agfunction",
    "example" : "${agfunction:getContentIDsFiltered(agResults,excludeClassURN)}",
    "localizedDescription" : "Extract content IDs from input objects",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/agfu
nction:getContentIDsFiltered?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/agfu
nction:getContentIDsFiltered",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "atomAsCMISObjects",
    "returnType" : "java.util.List",
    "category" : "cmisfunction",
    "example" : "${cmisfunction:atomAsCMISObjects(atomFeed)}",
    "localizedDescription" : "ATOM feed as List<CMISObject>",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/cmis
function:atomAsCMISObjects?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/cmis
function:atomAsCMISObjects",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "atomAsEntries",
    "returnType" : "java.util.List",
    "category" : "cmisfunction",
    "example" : "${cmisfunction:atomAsEntries(atomFeed)}",
    "localizedDescription" : "ATOM feed as  List<org.apache.abdera.model.Entry>",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
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      "capabilities" : "urn:oracle:restframework:read",
      "href" :
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      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/cmis
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      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/cmis
function:atomAsEntries",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "atomAsFeed",
    "returnType" : "org.apache.abdera.model.Feed",
    "category" : "cmisfunction",
    "example" : "${cmisfunction:atomAsFeed(atomFeed)}",
    "localizedDescription" : "ATOM feed as  org.apache.abdera.model.Feed",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
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      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
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function:atomAsFeed?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/cmis
function:atomAsFeed",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "atomAsStreamUrls",
    "returnType" : "java.util.List",
    "category" : "cmisfunction",
    "example" : "${cmisfunction:atomAsStreamUrls(atomFeed)}",
    "localizedDescription" : "ATOM feed as List<String> of URLs",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
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    }, {
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      "template" :
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      "href" :
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function:atomAsStreamUrls",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "getCMISQueryForDocIDs",
    "returnType" : "java.lang.String",
    "category" : "cmisfunction",
    "example" : "${cmisfunction:getCMISQueryForDocIDs(repository,ids)}",
    "localizedDescription" : "Construct a CMIS query in the form of 'IN' query
syntax that will retrieve the documents for the array of input doc IDs.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
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ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
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      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/cmis
function:getCMISQueryForDocIDs?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/cmis
function:getCMISQueryForDocIDs",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "getCMISQueryForDocIDsFromFullID",
    "returnType" : "java.lang.String",
    "category" : "cmisfunction",
    "example" : "${cmisfunction:getCMISQueryForDocIDsFromFullID(ids)}",
    "localizedDescription" : "Construct a CMIS query in the form of 'IN' query
syntax that will retrieve the documents for the array of input doc IDs.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
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ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
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      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/cmis
function:getCMISQueryForDocIDsFromFullID?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/cmis
function:getCMISQueryForDocIDsFromFullID",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "append",
    "returnType" : "java.util.Collection",
    "category" : "collections",
    "example" : "${collections:append(collection,item)}",
    "localizedDescription" : "Appends ",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/coll
ections:append?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/coll
ections:append",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "new",
    "returnType" : "java.util.Collection",
    "category" : "collections",
    "example" : "${collections:new()}",
    "localizedDescription" : "Creates and returns a new collection.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/coll
ections:new?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/coll
ections:new",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "sort",
    "returnType" : "void",
    "category" : "collections",
    "example" : "${collections:sort(list)}",
    "localizedDescription" : "Sorts the provided collection.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
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ections:sort?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/coll
ections:sort",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "getSampleConfig",
    "returnType" : "oracle.wcps.test.providers.sample.SampleConnectionConfigImpl",
    "category" : "connectionsQA",
    "example" :
"${connectionsQA:getSampleConfig(scenarioContext,connectionName)}",
    "localizedDescription" : "Retrieves a sample configuration by name.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
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      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/conn
ectionsQA:getSampleConfig?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/conn
ectionsQA:getSampleConfig",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "getSampleConfigs",
    "returnType" : "java.util.List",
    "category" : "connectionsQA",
    "example" : "${connectionsQA:getSampleConfigs(scenarioContext)}",
    "localizedDescription" : "Retrieves all sample connection configurations for
the current namespace.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/conn
ectionsQA:getSampleConfigs?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/conn
ectionsQA:getSampleConfigs",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "removeSampleConfig",
    "returnType" : "void",
    "category" : "connectionsQA",
    "example" :
"${connectionsQA:removeSampleConfig(scenarioContext,connectionName)}",
    "localizedDescription" : "Removes a sample configuration with the specified
name in the current namespace.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/conn
ectionsQA:removeSampleConfig?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/conn
ectionsQA:removeSampleConfig",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "saveSampleConfig",
    "returnType" : "oracle.wcps.test.providers.sample.SampleConnectionConfigImpl",
    "category" : "connectionsQA",
    "example" :
"${connectionsQA:saveSampleConfig(scenarioContext,connectionName,samplePropertyVal
ue)}",
    "localizedDescription" : "Creates or saves a sample configuration.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/conn
ectionsQA:saveSampleConfig?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/conn
ectionsQA:saveSampleConfig",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "response",
    "returnType" : "java.lang.String",
    "category" : "magiceightball",
    "example" : "${magiceightball:response(scenarioContext,responses)}",
    "localizedDescription" : "Provides clairvoyant responses to all your
questions",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/magi
ceightball:response?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/magi
ceightball:response",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "getUserRoles",
    "returnType" : "java.util.List",
    "category" : "security",
    "example" : "${security:getUserRoles()}",
    "localizedDescription" : "Returns an array of roles/groups that is part of the
current subject.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
```

```
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/secu
rity:getUserRoles?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/secu
rity:getUserRoles",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "isUserInRole",
    "returnType" : "boolean",
    "category" : "security",
    "example" : "${security:isUserInRole(role)}",
    "localizedDescription" : "Determines if the current user is a member in the
specified role or group name (role).",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/secu
rity:isUserInRole?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/secu
rity:isUserInRole",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "complexType",
    "returnType" : "oracle.wcps.test.providers.functions.ComplexType",
    "category" : "test",
    "example" : "${test:complexType(arg0,arg1)}",
    "localizedDescription" : "Demonstrates how to return a complex type.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
```

```
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
:complexType?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
:complexType",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "complexTypeList",
    "returnType" : "java.util.List",
    "category" : "test",
    "example" : "${test:complexTypeList(arg0)}",
    "localizedDescription" : "Demonstrates how to return a list of complex
types.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
:complexTypeList?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
:complexTypeList",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "complexTypeMap",
    "returnType" : "java.util.Map",
    "category" : "test",
    "example" : "${test:complexTypeMap(arg0)}",
    "localizedDescription" : "Demonstrates how to return a map of complex types.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
:complexTypeMap?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
:complexTypeMap",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "concat",
    "returnType" : "java.lang.String",
    "category" : "test",
    "example" : "${test:concat(arg0,arg1)}",
    "localizedDescription" : "Demonstrates how to return a complex type.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
:concat?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
:concat",
      "rel" : "self"
    } ]
  }, {
    "parameters" : [ ],
    "name" : "sleep",
    "returnType" : "void",
    "category" : "test",
    "example" : "${test:sleep(arg0)}",
    "localizedDescription" : "Pauses the current thread for the specified number
of milliseconds.",
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
```

```
:sleep?projection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/test
:sleep",
      "rel" : "self"
    } ]
  } ],
  "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection=summary",
    "rel" : "self"
  } ]
}
```

72.2.2.2 Getting Metadata for a Single Function Provider (GET)

XML

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/colle
ctions:append?projection=details
accept-language: en
content-type: application/xml
accept: application/xml
```

Response:

```
Status Code:200
Content-Length: 1433
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=xf4NM2GL2yrTY3QPCZ591Ht8h7MVTSW9GGzR6Tm12WtFLvD0vnng!2098846330;
path=/wcps; HttpOnly
Content-Type: application/xml
Date: Wed, 13 Oct 2010 23:51:36 GMT

<?xml version="1.0" encoding="UTF-8"?>
<functionProvider
resourceType="urn:oracle:wcps:conductor:provider:functionProvider">
  <links>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
      rel="urn:oracle:webcenter:parent"
      resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
```

```
/collections:append?projection=details"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:provider:functionProvider"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders/collections:append?projection={projection}"/>
  </links>
  <category>collections</category>
  <example>${collections:append(collection,item)}</example>
  <localizedDescription>Appends </localizedDescription>
  <name>append</name>
  <parameters>
    <parameter>
      <localizedDescription>The collection to append to.</localizedDescription>
      <name>collection</name>
      <type>java.util.Collection</type>
    </parameter>
    <parameter>
      <localizedDescription>The item or object to append.</localizedDescription>
      <name>item</name>
      <type>java.lang.Object</type>
    </parameter>
  </parameters>
  <returnType>java.util.Collection</returnType>
</functionProvider>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/colle
ctions:append?projection=details
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=BCz3M2GJWQnS3jQV1DvMsJynJXGnlJ6MrmrST4qxm8L7NxbgJh9T!2098846330;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 23:51:37 GMT

{
  "parameters" : [ {
    "type" : "java.util.Collection",
    "name" : "collection",
    "localizedDescription" : "The collection to append to."
  }, {
    "type" : "java.lang.Object",
    "name" : "item",
    "localizedDescription" : "The item or object to append."
  } ],
  "name" : "append",
  "returnType" : "java.util.Collection",
  "category" : "collections",
  "example" : "${collections:append(collection,item)}",
  "localizedDescription" : "Appends ",
  "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
    "rel" : "urn:oracle:webcenter:parent"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProvider",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/coll
ections:append?projection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders/coll
ections:append?projection=details",
    "rel" : "self"
  } ]
}
```

72.2.3 Using the Namespace Management APIs

This section provides examples of using the Conductor's namespace management APIs, and contains the following subsections:

- Section 72.2.3.1, "Getting a Collection of Namespaces (GET)"
- Section 72.2.3.2, "Retrieving a Single Namespace (GET)"
- Section 72.2.3.3, "Creating a Namespace (POST)"
- Section 72.2.3.4, "Deleting a Namespace (DELETE)"

72.2.3.1 Getting a Collection of Namespaces (GET)

XML

```
Request:
GET
http://localhost:7001/wcps/api/conductor/namespaces?startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/xml
accept: application/xml

Response:
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=JVqNM0HGTxxrXJJsy2cLCPjRTqJzDQ6pFytMMNy3JQTph671rTC2!-1838429496;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/xml
Date: Tue, 12 Oct 2010 20:40:06 GMT

<?xml version="1.0" encoding="UTF-8"?>
<namespaces resourceType="urn:oracle:wcps:conductor:namespaces">
  <links>
    <link capabilities="urn:oracle:restframework:read"
```

```
      href="http://localhost:7001/wcps/api/conductor/resourceIndex"
      rel="urn:oracle:webcenter:parent"
resourceType="urn:oracle:wcps:conductor:resourceIndex"/>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:create"

href="http://localhost:7001/wcps/api/conductor/namespaces?startIndex=0&amp;itemsPe
rPage=10"
      rel="self" resourceType="urn:oracle:wcps:conductor:namespaces"
template="http://localhost:7001/wcps/api/conductor/namespaces?startIndex={startInd
ex}&amp;itemsPerPage={itemsPerPage}"/>
  </links>
  <items>
    <namespace resourceType="urn:oracle:wcps:conductor:namespace">
      <links>
        <link capabilities="urn:oracle:restframework:read"
          href="http://localhost:7001/wcps/api/conductor/namespaces"
          rel="urn:oracle:webcenter:parent"
resourceType="urn:oracle:wcps:conductor:namespaces"/>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:delete"
          href="http://localhost:7001/wcps/api/conductor/namespaces/JDEV"
          rel="self" resourceType="urn:oracle:wcps:conductor:namespace"/>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:create"

href="http://localhost:7001/wcps/api/conductor/namespaces/JDEV/scenarios"
          rel="urn:oracle:wcps:conductor:scenarioMetadatas"
          resourceType="urn:oracle:wcps:conductor:scenarioMetadatas"
template="http://localhost:7001/wcps/api/conductor/namespaces/JDEV/scenarios?tag={
tag}&amp;projection={projection}&amp;startIndex={startIndex}&amp;itemsPerPage={ite
msPerPage}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/JDEV/dataProviders"
          rel="urn:oracle:wcps:conductor:provider:dataProviders"
          resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/JDEV/dataProviders?p
rojection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/JDEV/functionProviders"
          rel="urn:oracle:wcps:conductor:provider:functionProviders"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/JDEV/functionProvide
rs?projection={projection}"/>
      </links>
      <name>JDEV</name>
    </namespace>
    <namespace resourceType="urn:oracle:wcps:conductor:namespace">
      <links>
        <link capabilities="urn:oracle:restframework:read"
          href="http://localhost:7001/wcps/api/conductor/namespaces"
          rel="urn:oracle:webcenter:parent"
resourceType="urn:oracle:wcps:conductor:namespaces"/>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:delete"
```

```
          href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle"
          rel="self" resourceType="urn:oracle:wcps:conductor:namespace"/>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:create"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios"
          rel="urn:oracle:wcps:conductor:scenarioMetadatas"
          resourceType="urn:oracle:wcps:conductor:scenarioMetadatas"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?tag
={tag}&amp;projection={projection}&amp;startIndex={startIndex}&amp;itemsPerPage={i
temsPerPage}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders"
          rel="urn:oracle:wcps:conductor:provider:dataProviders"
          resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
?projection={projection}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
          rel="urn:oracle:wcps:conductor:provider:functionProviders"
          resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
      </links>
      <name>Oracle</name>
    </namespace>
  </items>
</namespaces>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces?startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=3yvMM0HLChkXHS7R2VGn4F6lFKHwTGP2NwjC2Lf7J2jpvLTW9GvV!-1838429496;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Tue, 12 Oct 2010 20:40:11 GMT

{
  "namespaces" : [ {
    "name" : "JDEV",
    "resourceType" : "urn:oracle:wcps:conductor:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:namespaces",
      "capabilities" : "urn:oracle:restframework:read",
      "href" : "http://localhost:7001/wcps/api/conductor/namespaces",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:namespace",
      "capabilities" : "urn:oracle:restframework:read 
urn:oracle:restframework:delete",
      "href" : "http://localhost:7001/wcps/api/conductor/namespaces/JDEV",
      "rel" : "self"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadatas",
      "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/JDEV/scenarios?tag={tag}&proj
ection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}",
      "capabilities" : "urn:oracle:restframework:read 
urn:oracle:restframework:create",
      "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/JDEV/scenarios",
      "rel" : "urn:oracle:wcps:conductor:scenarioMetadatas"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
      "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/JDEV/dataProviders?projection
={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/JDEV/dataProviders",
      "rel" : "urn:oracle:wcps:conductor:provider:dataProviders"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/JDEV/functionProviders?projec
tion={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/JDEV/functionProviders",
      "rel" : "urn:oracle:wcps:conductor:provider:functionProviders"
    } ]
  }, {
    "name" : "Oracle",
    "resourceType" : "urn:oracle:wcps:conductor:namespace",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:namespaces",
      "capabilities" : "urn:oracle:restframework:read",
      "href" : "http://localhost:7001/wcps/api/conductor/namespaces",
      "rel" : "urn:oracle:webcenter:parent"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:namespace",
      "capabilities" : "urn:oracle:restframework:read 
urn:oracle:restframework:delete",
      "href" : "http://localhost:7001/wcps/api/conductor/namespaces/Oracle",
      "rel" : "self"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadatas",
      "template" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?tag={tag}&pr
ojection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}",
      "capabilities" : "urn:oracle:restframework:read 
urn:oracle:restframework:create",
      "href" : 
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios",
      "rel" : "urn:oracle:wcps:conductor:scenarioMetadatas"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
      "rel" : "urn:oracle:wcps:conductor:provider:dataProviders"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
      "rel" : "urn:oracle:wcps:conductor:provider:functionProviders"
    } ]
  }],
  "resourceType" : "urn:oracle:wcps:conductor:namespaces",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:resourceIndex",
    "capabilities" : "urn:oracle:restframework:read",
    "href" : "http://localhost:7001/wcps/api/conductor/resourceIndex",
    "rel" : "urn:oracle:webcenter:parent"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:namespaces",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces?startIndex={startIndex}&items
PerPage={itemsPerPage}",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:create",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces?startIndex=0&itemsPerPage=10"
,
    "rel" : "self"
  } ]
}
```

72.2.3.2 Retrieving a Single Namespace (GET)

XML

Request:

```
GET http://localhost:7001/wcps/api/conductor/namespaces/Oracle
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=qzMqM0HMPYBlKQGMJvnQMS4rxXS4Jn1QnBjW850G1vnSjt4lHbLy!-1838429496;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Tue, 12 Oct 2010 20:40:12 GMT
```

```
{
  "name" : "Oracle",
  "resourceType" : "urn:oracle:wcps:conductor:namespace",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:namespaces",
    "capabilities" : "urn:oracle:restframework:read",
    "href" : "http://localhost:7001/wcps/api/conductor/namespaces",
    "rel" : "urn:oracle:webcenter:parent"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:namespace",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:delete",
    "href" : "http://localhost:7001/wcps/api/conductor/namespaces/Oracle",
    "rel" : "self"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadatas",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?tag={tag}&pr
ojection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:create",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios",
    "rel" : "urn:oracle:wcps:conductor:scenarioMetadatas"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
    "rel" : "urn:oracle:wcps:conductor:provider:dataProviders"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
    "rel" : "urn:oracle:wcps:conductor:provider:functionProviders"
  } ]
}
```

JSON

Request:

```
GET http://localhost:7001/wcps/api/conductor/namespaces/Oracle
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=qzMqM0HMPYBlKQGMJvnQMS4rxXS4Jn1QnBjW850G1vnSjt4lHbLy!-1838429496;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
```

```
Date: Tue, 12 Oct 2010 20:40:12 GMT

{
  "name" : "Oracle",
  "resourceType" : "urn:oracle:wcps:conductor:namespace",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:namespaces",
    "capabilities" : "urn:oracle:restframework:read",
    "href" : "http://localhost:7001/wcps/api/conductor/namespaces",
    "rel" : "urn:oracle:webcenter:parent"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:namespace",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:delete",
    "href" : "http://localhost:7001/wcps/api/conductor/namespaces/Oracle",
    "rel" : "self"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadatas",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?tag={tag}&pr
ojection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:create",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios",
    "rel" : "urn:oracle:wcps:conductor:scenarioMetadatas"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
    "rel" : "urn:oracle:wcps:conductor:provider:dataProviders"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
    "rel" : "urn:oracle:wcps:conductor:provider:functionProviders"
  } ]
}
```

72.2.3.3 Creating a Namespace (POST)

XML

Request:

```
POST
http://localhost:7001/wcps/api/conductor/namespaces?startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/xml
accept: application/xml

<?xml version="1.0" encoding="UTF-8"?>
```

```
<namespace resourceType="urn:oracle:wcps:conductor:namespace">
  <name>Oracle</name>
</namespace>
```

Response:

```
Status Code:201
Content-Length: 1753
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=RW6QM0HF5x2KLvNSZJVncTpSXbl1rKY3tTfXyH94yY6Qv6ddGJkY!-1838429496;
path=/wcps; HttpOnly
Content-Type: application/xml
Location: http://localhost:7001/wcps/api/conductor/namespaces/Oracle
Date: Tue, 12 Oct 2010 20:40:05 GMT

<?xml version="1.0" encoding="UTF-8"?>
<namespace resourceType="urn:oracle:wcps:conductor:namespace">
  <links>
    <link capabilities="urn:oracle:restframework:read"
      href="http://localhost:7001/wcps/api/conductor/namespaces"
      rel="urn:oracle:webcenter:parent"
resourceType="urn:oracle:wcps:conductor:namespaces"/>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:delete"
      href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle"
      rel="self" resourceType="urn:oracle:wcps:conductor:namespace"/>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:create"
      href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios"
      rel="urn:oracle:wcps:conductor:scenarioMetadatas"
      resourceType="urn:oracle:wcps:conductor:scenarioMetadatas"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?tag
={tag}&amp;projection={projection}&amp;startIndex={startIndex}&amp;itemsPerPage={i
temsPerPage}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders"
      rel="urn:oracle:wcps:conductor:provider:dataProviders"
      resourceType="urn:oracle:wcps:conductor:provider:dataProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders
?projection={projection}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders
"
      rel="urn:oracle:wcps:conductor:provider:functionProviders"
      resourceType="urn:oracle:wcps:conductor:provider:functionProviders"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProvi
ders?projection={projection}"/>
  </links>
  <name>Oracle</name>
</namespace>
```

JSON

Request:

```
POST
http://localhost:7001/wcps/api/conductor/namespaces?startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/json
accept: application/json
```

```
{
  "name" : "Oracle",
  "resourceType" : "urn:oracle:wcps:conductor:namespace"
}

Response:
Status Code:201
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=xh18M0HKT86f4y1bWqZnBmzHXvNnvh0p7y9RLTmQfbRQC3fh79gx!-1838429496;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Location: http://localhost:7001/wcps/api/conductor/namespaces/Oracle
Date: Tue, 12 Oct 2010 20:40:10 GMT

{
  "name" : "Oracle",
  "resourceType" : "urn:oracle:wcps:conductor:namespace",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:namespaces",
    "capabilities" : "urn:oracle:restframework:read",
    "href" : "http://localhost:7001/wcps/api/conductor/namespaces",
    "rel" : "urn:oracle:webcenter:parent"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:namespace",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:delete",
    "href" : "http://localhost:7001/wcps/api/conductor/namespaces/Oracle",
    "rel" : "self"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadatas",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?tag={tag}&pr
ojection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:create",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios",
    "rel" : "urn:oracle:wcps:conductor:scenarioMetadatas"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:dataProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders?projecti
on={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/dataProviders",
    "rel" : "urn:oracle:wcps:conductor:provider:dataProviders"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:provider:functionProviders",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders?proj
ection={projection}",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/functionProviders",
    "rel" : "urn:oracle:wcps:conductor:provider:functionProviders"
  } ]
}
```

72.2.3.4 Deleting a Namespace (DELETE)

XML/JSON

```
Request:
DELETE http://localhost:7001/wcps/api/conductor/namespaces/Oracle
accept-language: en
content-type: application/xml
accept: application/xml

Response:
Status Code:204
Content-Length: 0
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
Set-Cookie:
JSESSIONID=SMctM0HJxYxSvkMszjrfpl5zJ3Q0v25NhB7QPRTnJFLmd1tK1hYC!-1838429496;
path=/wcps; HttpOnly
Date: Tue, 12 Oct 2010 20:40:09 GMT
```

72.2.4 Using the Scenario Management APIs

This section provides examples of using the Conductor's scenario management APIs, and contains the following susbsections:

- Section 72.2.4.1, "Getting a Collection of Scenarios (GET)"
- Section 72.2.4.2, "Retrieving a Single Scenario (GET)"
- Section 72.2.4.3, "Creating a Scenario (POST)"
- Section 72.2.4.4, "Updating a Scenario (PUT)"
- Section 72.2.4.5, "Deleting a Scenario (DELETE)"
- Section 72.2.4.6, "Execute a Scenario (POST)"

72.2.4.1 Getting a Collection of Scenarios (GET)

XML

```
Request:
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?projection=su
mmary&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/xml
accept: application/xml

Response:
Status Code:200
Content-Length: 1915
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=LJq1M1TGZp7fClyTJ2wggGczv2r8N0X1jsPYlg8kpGFWwGMvrQsM!21637120;
path=/wcps; HttpOnly
Content-Type: application/xml
```

```
Date: Wed, 13 Oct 2010 15:43:02 GMT

<?xml version="1.0" encoding="UTF-8"?>
<scenarioMetadatas
  resourceType="urn:oracle:wcps:conductor:scenarioMetadatas"
  xmlns:ns2="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"
xmlns:ns3="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:create"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?project
ion=summary&amp;startIndex=0&amp;itemsPerPage=10"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:scenarioMetadatas"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?tag
={tag}&amp;projection={projection}&amp;startIndex={startIndex}&amp;itemsPerPage={i
temsPerPage}"/>
  </links>
  <items>
    <scenarioMetadata resourceType="urn:oracle:wcps:conductor:scenarioMetadata">
      <links>
        <link
          capabilities="urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete
urn:oracle:restframework:execute"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%2
0World"
          rel="self"
          resourceType="urn:oracle:wcps:conductor:scenarioMetadata"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hel
lo
World?projection={projection}&amp;startIndex={startIndex}&amp;itemsPerPage={itemsP
erPage}"/>
        <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%2
0World/definition"
          rel="alternate" resourceType="urn:oracle:wcps:conductor:scenario"/>
      </links>
      <status>PUBLISHED</status>
      <createdAuthor>weblogic</createdAuthor>
      <createdDateTime>2010-10-13T09:43:01.617-06:00</createdDateTime>
      <updatedAuthor>weblogic</updatedAuthor>
      <updatedDateTime>2010-10-13T09:43:01.617-06:00</updatedDateTime>
      <scenario>
        <comments/>
        <name>Hello World</name>
        <tags/>
        <input-parameters/>
      </scenario>
    </scenarioMetadata>
  </items>
</scenarioMetadatas>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?projection=su
```

```
mmary&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=0VBvM2ZMwfWC6bPnZ8QDWv7q4h7WhmTMPvb0Lyc9n8t0lnyTtGLy!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 20:39:40 GMT

{
  "scenarioMetadatas" : [ {
    "scenario" : {
      "tags" : [ ],
      "inputParameters" : [ ],
      "name" : "Hello World",
      "comments" : "This scenario returns a Hello World string."
    },
    "status" : "PUBLISHED",
    "createdAuthor" : "weblogic",
    "createdDateTime" : "2010-10-13T14:39:40.103-0600",
    "updatedAuthor" : "weblogic",
    "updatedDateTime" : "2010-10-13T14:39:40.103-0600",
    "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata",
    "links" : [ {
      "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata",
      "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello
World?projection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}"
,
      "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete
urn:oracle:restframework:execute",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20Worl
d",
      "rel" : "self"
    }, {
      "resourceType" : "urn:oracle:wcps:conductor:scenario",
      "capabilities" : "urn:oracle:restframework:read",
      "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20Worl
d/definition",
      "rel" : "alternate"
    } ]
  } ],
  "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadatas",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadatas",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?tag={tag}&pr
ojection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}",
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:create",
    "href" :
```

```
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?projection=s
ummary&startIndex=0&itemsPerPage=10",
    "rel" : "self"
  } ]
}
```

72.2.4.2 Retrieving a Single Scenario (GET)

XML

```
Request:
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20World
?projection=details&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/xml
accept: application/xml

Response:
Status Code:200
Content-Length: 1725
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=mS7LM2hYbWDd8xvmKYGSGVLXJ2qYDTXNGLy3lqknyp8fYStlBQNT!822326988;
path=/wcps; HttpOnly
Content-Type: application/xml
Date: Wed, 13 Oct 2010 20:45:44 GMT

<?xml version="1.0" encoding="UTF-8"?>
<scenarioMetadata
  resourceType="urn:oracle:wcps:conductor:scenarioMetadata"
  xmlns:ns2="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"
xmlns:ns3="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete urn:oracle:restframework:execute"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%2
0World?projection=details&amp;startIndex=0&amp;itemsPerPage=10"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:scenarioMetadata"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hel
lo
World?projection={projection}&amp;startIndex={startIndex}&amp;itemsPerPage={itemsP
erPage}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%2
0World/definition"
      rel="alternate" resourceType="urn:oracle:wcps:conductor:scenario"/>
  </links>
  <status>PUBLISHED</status>
  <createdAuthor>weblogic</createdAuthor>
  <createdDateTime>2010-10-13T14:45:42.525-06:00</createdDateTime>
  <updatedAuthor>weblogic</updatedAuthor>
  <updatedDateTime>2010-10-13T14:45:42.525-06:00</updatedDateTime>
  <scenario>
    <comments>This scenario returns a Hello World string.</comments>
    <body>
      <return>
        <comments>This is what is returned by the scenario.  A static string with
the input parameter embedded.</comments>
        <expression>Hello World with input '${input}'!</expression>
      </return>
    </body>
    <name>Hello World</name>
    <tags>
      <tag>hello</tag>
      <tag>world</tag>
    </tags>
    <input-parameters>
      <parameter required="true">input</parameter>
    </input-parameters>
  </scenario>
</scenarioMetadata>
```

JSON

Request:

```
GET
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20World
?projection=details&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/json
accept: application/json
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=LJnKM2hppVQL9ph88JWCymz8M1TQqcQjSbD03zJQ9z6yyT314Zy4!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 20:45:50 GMT

{
  "scenario" : {
    "tags" : [ "hello", "world" ],
    "inputParameters" : [ {
      "value" : "input",
      "required" : true
    } ],
    "name" : "Hello World",
    "body" : {
      "statements" : [ {
        "concreteType" : "urn:oracle:wcps:conductor:scenario:schema:return",
        "expression" : "Hello World with input '${input}'!",
        "comments" : "This is what is returned by the scenario.  A static string
with the input parameter embedded."
      } ]
    },
    "comments" : "This scenario returns a Hello World string."
  },
  "status" : "PUBLISHED",
  "createdAuthor" : "weblogic",
  "createdDateTime" : "2010-10-13T14:45:48.681-0600",
  "updatedAuthor" : "weblogic",
  "updatedDateTime" : "2010-10-13T14:45:48.681-0600",
  "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello
World?projection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}"
,
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete
urn:oracle:restframework:execute",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20Worl
d?projection=details&startIndex=0&itemsPerPage=10",
    "rel" : "self"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:scenario",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20Worl
d/definition",
    "rel" : "alternate"
  } ]
}
```

72.2.4.3 Creating a Scenario (POST)

XML

```
Request:
POST
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?projection=de
tails&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/xml
accept: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<scenarioMetadata
  resourceType="urn:oracle:wcps:conductor:scenarioMetadata"
  xmlns:ns2="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"
xmlns:ns3="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <scenario>
    <comments>This scenario returns a Hello World string.</comments>
    <body>
      <return>
        <comments>This is what is returned by the scenario.  A static string with
the input parameter embedded.</comments>
        <expression>Hello World with input '${input}'!</expression>
      </return>
    </body>
    <name>Hello World</name>
    <tags>
      <tag>hello</tag>
      <tag>world</tag>
    </tags>
    <input-parameters>
      <parameter required="true">input</parameter>
    </input-parameters>
  </scenario>
```

```
</scenarioMetadata>
```

Response:

```
Status Code:201
Content-Length: 1669
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=L41NM2hW6p8FtvJmjRxKkZNF2LJnnY4JhGJCT1xDG4prwf1T1g3D!822326988;
path=/wcps; HttpOnly
Content-Type: application/xml
Location:
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20World
Date: Wed, 13 Oct 2010 20:45:42 GMT

<?xml version="1.0" encoding="UTF-8"?>
<scenarioMetadata
  resourceType="urn:oracle:wcps:conductor:scenarioMetadata"
  xmlns:ns2="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"
xmlns:ns3="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete urn:oracle:restframework:execute"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%2
0World"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:scenarioMetadata"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hel
lo
World?projection={projection}&amp;startIndex={startIndex}&amp;itemsPerPage={itemsP
erPage}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%2
0World/definition"
      rel="alternate" resourceType="urn:oracle:wcps:conductor:scenario"/>
  </links>
  <status>PUBLISHED</status>
  <createdAuthor>weblogic</createdAuthor>
  <createdDateTime>2010-10-13T14:45:42.525-06:00</createdDateTime>
  <updatedAuthor>weblogic</updatedAuthor>
  <updatedDateTime>2010-10-13T14:45:42.525-06:00</updatedDateTime>
  <scenario>
    <comments>This scenario returns a Hello World string.</comments>
    <body>
      <return>
        <comments>This is what is returned by the scenario.  A static string with
the input parameter embedded.</comments>
        <expression>Hello World with input '${input}'!</expression>
      </return>
    </body>
    <name>Hello World</name>
    <tags>
      <tag>hello</tag>
      <tag>world</tag>
    </tags>
    <input-parameters>
      <parameter required="true">input</parameter>
    </input-parameters>
  </scenario>
</scenarioMetadata>
```

JSON

Request:

```
POST
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios?projection=de
tails&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/json
accept: application/json

{
  "scenario" : {
    "tags" : [ "hello", "world" ],
    "inputParameters" : [ {
      "value" : "input",
      "required" : true
    } ],
    "name" : "Hello World",
    "body" : {
      "statements" : [ {
        "concreteType" : "urn:oracle:wcps:conductor:scenario:schema:return",
        "expression" : "Hello World with input '${input}'!",
        "comments" : "This is what is returned by the scenario.  A static string
with the input parameter embedded."
      } ]
    },
    "comments" : "This scenario returns a Hello World string."
  },
  "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata"
}
```

Response:

```
Status Code:201
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=XrT7M2hcNRzpmCKF7SxPNs9phBvfPlsnffy98nRLDL8G52wHwd1y!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Location:
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20World
Date: Wed, 13 Oct 2010 20:45:48 GMT

{
  "scenario" : {
    "tags" : [ "hello", "world" ],
    "inputParameters" : [ {
      "value" : "input",
      "required" : true
    } ],
    "name" : "Hello World",
    "body" : {
      "statements" : [ {
        "concreteType" : "urn:oracle:wcps:conductor:scenario:schema:return",
        "expression" : "Hello World with input '${input}'!",
        "comments" : "This is what is returned by the scenario.  A static string
with the input parameter embedded."
      } ]
    },
    "comments" : "This scenario returns a Hello World string."
  },
  "status" : "PUBLISHED",
  "createdAuthor" : "weblogic",
  "createdDateTime" : "2010-10-13T14:45:48.681-0600",
  "updatedAuthor" : "weblogic",
  "updatedDateTime" : "2010-10-13T14:45:48.681-0600",
  "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello
World?projection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}"
,
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete
urn:oracle:restframework:execute",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20Worl
d",
    "rel" : "self"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:scenario",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20Worl
d/definition",
    "rel" : "alternate"
  } ]
}
```

72.2.4.4 Updating a Scenario (PUT)

XML

Request:

```
PUT
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20World
?projection=details&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/xml
accept: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<scenarioMetadata
  resourceType="urn:oracle:wcps:conductor:scenarioMetadata"
  xmlns:ns2="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"
xmlns:ns3="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <scenario>
    <comments>This scenario returns a Hello World string.</comments>
    <body>
      <assign-variable>
        <variable>initVariable</variable>
        <expression>Hello World with input '${input}'!</expression>
      </assign-variable>
      <return>
        <comments>This is what is returned by the scenario.  A static string with
the input parameter embedded.</comments>
```

```
        <expression>${initVariable}</expression>
      </return>
    </body>
    <name>Hello World</name>
    <tags>
      <tag>hello</tag>
      <tag>world</tag>
    </tags>
    <input-parameters>
      <parameter required="true">input</parameter>
    </input-parameters>
  </scenario>
</scenarioMetadata>
```

Response:

```
Status Code:200
Content-Length: 1777
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=CnGYM2hYBBJ2hNPGLkcDG1WWvhP41gBDvBsCwmKpdHvtCJtQL67L!822326988;
path=/wcps; HttpOnly
Content-Type: application/xml
Date: Wed, 13 Oct 2010 20:45:44 GMT

<?xml version="1.0" encoding="UTF-8"?>
<scenarioMetadata
  resourceType="urn:oracle:wcps:conductor:scenarioMetadata"
  xmlns:ns2="http://xmlns.oracle.com/wcps/conductor/common/1.0.0"
xmlns:ns3="http://xmlns.oracle.com/wcps/conductor/scenarios/1.0.0">
  <links>
    <link
      capabilities="urn:oracle:restframework:read urn:oracle:restframework:update
urn:oracle:restframework:delete urn:oracle:restframework:execute"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%2
0World"
      rel="self"
      resourceType="urn:oracle:wcps:conductor:scenarioMetadata"
template="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hel
lo
World?projection={projection}&amp;startIndex={startIndex}&amp;itemsPerPage={itemsP
erPage}"/>
    <link capabilities="urn:oracle:restframework:read"

href="http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%2
0World/definition"
      rel="alternate" resourceType="urn:oracle:wcps:conductor:scenario"/>
  </links>
  <status>PUBLISHED</status>
  <createdAuthor>weblogic</createdAuthor>
  <createdDateTime>2010-10-13T14:45:42.525-06:00</createdDateTime>
  <updatedAuthor>weblogic</updatedAuthor>
  <updatedDateTime>2010-10-13T14:45:44.471-06:00</updatedDateTime>
  <scenario>
    <comments>This scenario returns a Hello World string.</comments>
    <body>
      <assign-variable>
        <variable>initVariable</variable>
        <expression>Hello World with input '${input}'!</expression>
      </assign-variable>
      <return>
        <comments>This is what is returned by the scenario.  A static string with
the input parameter embedded.</comments>
        <expression>${initVariable}</expression>
      </return>
    </body>
    <name>Hello World</name>
    <tags>
      <tag>hello</tag>
      <tag>world</tag>
    </tags>
    <input-parameters>
      <parameter required="true">input</parameter>
    </input-parameters>
  </scenario>
</scenarioMetadata>
```

JSON

Request:

```
PUT
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20World
?projection=details&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/json
accept: application/json

{
  "scenario" : {
    "tags" : [ "hello", "world" ],
    "inputParameters" : [ {
      "value" : "input",
      "required" : true
    } ],
    "name" : "Hello World",
    "body" : {
      "statements" : [ {
        "concreteType" :
"urn:oracle:wcps:conductor:scenario:schema:variable-assignment",
        "expression" : "Hello World with input '${input}'!",
        "variable" : "initVariable"
      }, {
        "concreteType" : "urn:oracle:wcps:conductor:scenario:schema:return",
        "expression" : "${initVariable}",
        "comments" : "This is what is returned by the scenario.  A static string
with the input parameter embedded."
      } ]
    },
    "comments" : "This scenario returns a Hello World string."
  },
  "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata"
}
```

Response:

```
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=sJBGM2hpTwwM7l3Q7HNnQ8lDpjkqQvkJy4h1Wr11KJFx1gd2XDSY!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
```

```
Date: Wed, 13 Oct 2010 20:45:50 GMT

{
  "scenario" : {
    "tags" : [ "hello", "world" ],
    "inputParameters" : [ {
      "value" : "input",
      "required" : true
    } ],
    "name" : "Hello World",
    "body" : {
      "statements" : [ {
        "concreteType" :
"urn:oracle:wcps:conductor:scenario:schema:variable-assignment",
        "expression" : "Hello World with input '${input}'!",
        "variable" : "initVariable"
      }, {
        "concreteType" : "urn:oracle:wcps:conductor:scenario:schema:return",
        "expression" : "${initVariable}",
        "comments" : "This is what is returned by the scenario.  A static string
with the input parameter embedded."
      } ]
    },
    "comments" : "This scenario returns a Hello World string."
  },
  "status" : "PUBLISHED",
  "createdAuthor" : "weblogic",
  "createdDateTime" : "2010-10-13T14:45:48.681-0600",
  "updatedAuthor" : "weblogic",
  "updatedDateTime" : "2010-10-13T14:45:50.533-0600",
  "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata",
  "links" : [ {
    "resourceType" : "urn:oracle:wcps:conductor:scenarioMetadata",
    "template" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello
World?projection={projection}&startIndex={startIndex}&itemsPerPage={itemsPerPage}"
,
    "capabilities" : "urn:oracle:restframework:read
urn:oracle:restframework:update urn:oracle:restframework:delete
urn:oracle:restframework:execute",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20Worl
d",
    "rel" : "self"
  }, {
    "resourceType" : "urn:oracle:wcps:conductor:scenario",
    "capabilities" : "urn:oracle:restframework:read",
    "href" :
"http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20Worl
d/definition",
    "rel" : "alternate"
  } ]
}
```

72.2.4.5 Deleting a Scenario (DELETE)

XML/JSON

Request:

```
DELETE
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20World
?projection=details&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/xml
accept: application/xml
```

Response:

```
Status Code:204
Content-Length: 0
X-Powered-By: Servlet/2.5 JSP/2.1
Connection: close
Set-Cookie:
JSESSIONID=nyKyM2WdGDL6v6Qsgpn335Vgzs5b7vnS417p9dcTgGrlv3736mmm!822326988;
path=/wcps; HttpOnly
Date: Wed, 13 Oct 2010 20:28:45 GMT
```

72.2.4.6 Execute a Scenario (POST)

XML

Request:

```
POST
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20World
?projection=details&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/xml
accept: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<parameters>
  <parameter>
    <name>input</name>
    <value>input parameter value</value>
  </parameter>
</parameters>
```

Response:

```
Status Code:200
Content-Length: 348
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=FlFzM2WchrvP59qBJdbSQldb7TvPQPyRj1HsvJJPCQhKrj7z6zs8!822326988;
path=/wcps; HttpOnly
Content-Type: application/xml
Date: Wed, 13 Oct 2010 20:28:44 GMT

<?xml version="1.0" encoding="UTF-8"?>
<conductorExecutionResults resourceType="urn:oracle:wcps:conductor:genericType">
  <results xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="xs:string">Hello World with input 'input parameter value'!</results>
</conductorExecutionResults>
```

JSON

Request:

```
POST
http://localhost:7001/wcps/api/conductor/namespaces/Oracle/scenarios/Hello%20World
```

```
?projection=details&startIndex=0&itemsPerPage=10
accept-language: en
content-type: application/json
accept: application/json

{
  "parameters" : [ {
    "name" : "input",
    "value" : "input parameter value"
  } ]
}

Response:
Status Code:200
X-Powered-By: Servlet/2.5 JSP/2.1
Set-Cookie:
JSESSIONID=fhJpM2hf45WSGZl3dwwBnMhCkxPbQwQTF9GLZ15QFc42ZQyVKLcj!822326988;
path=/wcps; HttpOnly
Transfer-Encoding: chunked
Content-Type: application/json
Date: Wed, 13 Oct 2010 20:45:51 GMT

{
  "results" : "Hello World with input 'input parameter value'!",
  "resourceType" : "urn:oracle:wcps:conductor:genericType"
}
```

72.3 Calling Data Integration Client Services Using ELs

Using Expression Language (EL) expressions, you can call data integration services from remote clients such as web pages and Java Server Faces environments. You can, for example, use ELs to apply data integration scenarios to pages in WebCenter Portal. For more information about data integration ELs, see also Section G.11, "ELs Related to Personalization."

This section contains the following subsections:

- Section 72.3.1, "Calling Data Integration Client Services from JSF Pages"
- Section 72.3.2, "Calling Data Integration Client Services from JSP Pages"
- Section 72.3.3, "Data Integration Context Object Method Reference"
- Section 72.3.4, "Enabling Single Sign-on"

72.3.1 Calling Data Integration Client Services from JSF Pages

The P13NContext is a session-scoped managed bean that is automatically declared and instantiated by the Java Server Faces context, and there for use with the following EL:

```
#{p13nContext}
```

Accessing the Conductor context

Access to remote Conductor services can be accessed in the following way:

```
#{p13nContext.conductor["<UrlOrConnectionName>"]}
```

where ***UrlOrConnectionName*** is a URL to the conductor resource index (for example, `http://localhost:7001/wcps/api/conductor/resourceIndex`), or a connection name specified in connections.xml (available only within JDeveloper or WebCenter environments).

If the connection name "default" is specified, the first connection name that starts with "Conductor" is retrieved. For example:

```
#{p13nContext.conductor['default'].namespaces['myNamespace'].scenario['myScenario'
].results}
```

Accessing the Properties service context

Access to remote Properties Service services can be accessed in the following way:

```
#{p13nContext.properties["<UrlOrConnectionName>"]}
```

where ***UrlOrConnectionName*** is a URL to the Properties Service resource index (for example http://localhost:7001/wcps/api/property/resourceIndex), or a connection name specified in connections.xml (available only within JDeveloper or WebCenter environments).

If the connection name "default" is specified, the first connection name that starts with "Properties" is retrieved. For example:

```
#{p13nContext.properties['default'].namespaces['myNamespace'].setDefinitions['MyPr
opertySetDefinition'].sets['MyPropertySet'].results['MyPropertyName']}
```

Configuring the client services for request scope

You may sometimes need to have the data integration services client use request scope rather than session scope. To do this, configure a custom managed bean in your application's faces-config as shown in the example below:

```
<managed-bean>
    <managed-bean-name>myP13nContext</managed-bean-name>
    <managed-bean-class>oracle.wcps.client.PersonalizationContext
 </managed-bean-class>
    <managed-bean-scope>request</managed-bean-scope>
</managed-bean>
```

72.3.2 Calling Data Integration Client Services from JSP Pages

The data integration client can be used with

JSP pages similarly to the way it is used in Java Server Faces pages (see Section 72.3.1, "Calling Data Integration Client Services from JSF Pages"). You must, however, register the bean using <jsp:useBean> as shown in the following example:

```
<jsp:useBean id="p13nContext" class="oracle.wcps.client.PersonalizationContext"
scope="session"/>
<c:out
value="${p13nContext.conductor['http://weblogic:webl0gic@localhost:7001/wcps/api/c
onductor'].namespaces['default'].scenario['my_scenario_
name'].withInput['question=Does JSP work?'].results}"/>
```

If you want to clear the bean's state, you can invoke it using scriptlet code by placing it after the <jsp:useBean> statement:

```
<jsp:scriptlet>((oracle.wcps.client.PersonalizationContext)session.getAttribute("p
13nContext")).reset();</jsp:scriptlet>
```

72.3.3 Data Integration Context Object Method Reference

Table 72–2 shows the data integration context object methods.

Table 72–2 Data Integration Context Object Method Reference

Method Name	Description	Example

reset	Clears the state of the context object in which it is invoked.	`#{p13nContext.reset}`
		`#{p13nContext.conductor['ConductorConnection'].reset}`
		`#{p13nContext.conductor['ConductorConnection'].namespaces['MyNamespace'].reset}`
		`#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].reset}`

update	Updates the property set with new values if bound to a form. This method only applies to the PropertySetContext. **Note:** This method can only called as part of a form-based action.	`#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].update}`

results	Retrieves the results of the context object.
	For PropertySetContext, it retrieves the property set by name and property set definitions, if they exist.
	For ScenarioExecutionContext and ParameterizedScenarioExecutionContext, the scenario results are retrieved.
		`#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].results}`
		`#{p13nContext.conductor['ConductorConnection'].namespaces['MyNamespace'].scenario['MyScenario'].results}`
		`#{p13nContext.conductor['ConductorConnection'].namespaces['MyNamespace'].scenario['MyScenario'].withInput['input1=val1;input2=value2;input3=value3'].results}`

withInput	Executes a scenario by name with input parameters. Input parameters must be in the format: `<paramOne>=<valueOne>;<paramTwo>=<valueTwo>;<paramThree>=<valueThree>` where each parameter name and value is separated by semicolon. This method only applies to ScenarioExecutionContext.	`#{p13nContext.conductor['ConductorConnection'].namespaces['MyNamespace'].scenario['MyScenario'].withInput['input1=val1;input2=value2;input3=value3'].results}`

isError	Determines if an error has occurred in the current context object. Only applies to PropertySetContext and ScenarioExecutionContext.	`#{p13nContext.conductor['ConductorConnection'].namespaces[myManagedBean.namespace].scenario[myManagedBean.scenario].isError}`
		`#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].isError}`

errorMessage	Returns the error message if an error has occurred in the current context object. Only applies to PropertySetContext and ScenarioExecutionContext.	`#{p13nContext.conductor['ConductorConnection'].namespaces[myManagedBean.namespace].scenario[myManagedBean.scenario].errorMessage}`
		`#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].errorMessage}`

72.3.4 Enabling Single Sign-on

To enable single sign-on, access to the `HttpServletRequest` must be available for both JSF and JSP environments. An implementation of `javax.servlet.Filter` (`PersonalizationFilter`) puts the `HttpServletRequest` on `ThreadLocal` for access within the client as shown in the example below:

```
<filter>
     <description>Personalization Filter for staging client-side
objects.</description>
     <filter-name>PersonalizationFilter</filter-name>
     <filter-class>oracle.wcps.client.PersonalizationFilter</filter-class>
</filter>

<filter-mapping>
     <filter-name>PersonalizationFilter</filter-name>
     <url-pattern>/*</url-pattern>
     <dispatcher>REQUEST</dispatcher>
</filter-mapping>
```

This filter is automatically configured in the `wcps-services-client-web-lib`.

73 Cache Management for Personalization

This chapter discusses cache management for Oracle WebCenter Personalization.

This chapter includes the following topics:

- Section 73.1, "Introduction to Cache Management for Personalization"
- Section 73.2, "Locating and Updating Cache Configuration Files"
- Section 73.3, "Using Caching with Personalization Components"
- Section 73.4, "Configuring Caches for Personalization Components"
- Section 73.5, "Configuring a Cache on a Data Provider Connection"
- Section 73.6, "Monitoring Oracle Coherence"

73.1 Introduction to Cache Management for Personalization

WebCenter Portal uses Oracle Coherence to manage server-side caching for personalization features. A local Coherence license is provided with all WebCenter installations. Personalization supports other more complex modes of Coherence use, although appropriate Coherence licenses must be purchased for those cases.

This chapter explains how to use caching with WebCenter Portal personalization features, like scenarios and data providers.

Note: It is assumed that you have a basic understanding of caching concepts and techniques. In general, no attempt will be made in this chapter to explain these concepts. It is also assumed that you are familiar with Oracle Coherence. To learn about Coherence, see *Getting Started with Oracle Coherence*.

It is also assumed that you are familiar with the WebCenter Portal personalization concepts and features described in Chapter 66, "Personalizing Oracle WebCenter Portal Applications."

73.2 Locating and Updating Cache Configuration Files

WebCenter Portal provides two Coherence cache configuration files for use with personalization. The use of these files is described in this section.

Note: All cache factories instantiated by WebCenter Personalization Server (WCPS) are specific to the WCPS classloader.

- Section 73.2.1, "Where are the Cache Configuration Files Located?"
- Section 73.2.2, "Using the Cache Configuration Files"

73.2.1 Where are the Cache Configuration Files Located?

Cache configuration files are located in:

```
$ORACLE_HOME/user_projects/applications/<domain>/conductor-extensions-library/WEB-INF/classes
```

If you create any custom cache configuration files, the best practice is to place them in this same directory. On the other hand, you can place them in any location that is in the WCPS web application classpath. You need to redeploy the WCPS web application or restart the server for the new class to be recognized. See also Section 73.2.2.3, "Creating Custom Cache Configuration Files."

73.2.2 Using the Cache Configuration Files

This section discusses each of the cache configuration files used by personalization features and the creation of custom cache configuration files.

73.2.2.1 Internal Cache Configuration File

The cache configuration file `wcps-coherence-cache-config.xml` supports internal integration components like the Property Service, Conductor, and the core data provider functionality.

> **Note:** Do not change the names of the caches in this configuration file. You can, however, change the cache configuration parameters in the file.

73.2.2.2 Data Provider Cache File

The cache configuration file `wcps-dataprovider-cache-config.xml` addresses caching associated with data providers. This file uses the wildcard pattern so that clients can have their specific caches, either by using a pattern like `wcps-dp-small-content` or `my-custom-cache`. For example, a wildcard pattern such as `wcps-dp-medium-*` will resolved when specifying cache names such as `wcps-dp-small-content` or `wcps-dp-small-ebs`.

The out-of-the-box data provider configurations may be modified to suit your needs, or you may add new entries to support your custom data providers. Please note that any changes to existing out-of-the-box configurations may affect other custom data providers deployed to your environment.

Default data provider cache configurations include the following:

- Local cache implemented in memory
- LRU eviction policy
- Small: 100 entries, default TTL of 1 hour
- Medium: 1000 entries, default TTL of 1 hour
- Large: 10000 entries, default TTL of 1 hour

> **Note:** These configurations may be changed to support upgraded Coherence license features.

This cache configuration file takes advantage of Coherence parameter macros and can easily be modified to fit specific needs. Links to Coherence documentation specific to the parameters are provided in the configuration file itself.

Clients can configure additional entries in this configuration file. Those entries will be available to the personalization cache APIs. See Section 73.3, "Using Caching with Personalization Components."

73.2.2.3 Creating Custom Cache Configuration Files

You can create custom Coherence cache configuration files to address specific use cases. Oracle recommends that all Coherence cache configuration files adhere to these general rules:

- Place cache configuration files in:

  ```
  $ORACLE_HOME/user_
  projects/applications/<domain>/conductor-extensions-library/WEB-INF/classes
  ```

- Only refer to caches that are used by server-side personalization components, like data and function providers. For details on these components, see Chapter 67, "Implementing Custom Data Providers: Introduction" and Chapter 68, "Implementing Custom Function Providers: Introduction."

> **Note:** In reality, cache configuration files can be placed wherever they are visible to the WCPS web application classloader; placing it in the above directory keeps it consistent with other WCPS cache configuration files. However, there may be times when you wish to define and package your cache configuration file differently.

You can package cache configuration files as part of the data provider's JAR file, or anywhere on the file system, because the CoherenceCacheFactory loads files using a URI. CoherenceCacheFactory is used programmatically by data providers or any other class deployed to the WCPS server. See Section 73.3.2, "Using CoherenceCacheFactory."

> **Note:** Data provider JAR files are located in:
>
> `$DOMAIN_HOME/conductor-extensions-library/WEB-INF/lib`.
>
> See Chapter 67, "Implementing Custom Data Providers: Introduction" for more information on packaging and deploying data providers.

You must redeploy the WCPS web application or restart the server for the new classes to be recognized.

73.3 Using Caching with Personalization Components

Personalization components like data and function providers, and custom data providers, interact with Coherence in one of two ways, depending on the context.

- **CacheFunctionProvider** – Includes methods that can be used within the context of a scenario or used programmatically by any data provider. Function providers perform operations on data within the context of a scenario. See also Section 68.1, "Introduction to Function Providers."

- **CoherenceCacheFactory** – Data providers and other classes deployed to the WCPS use this factory class to implement caching programmatically.

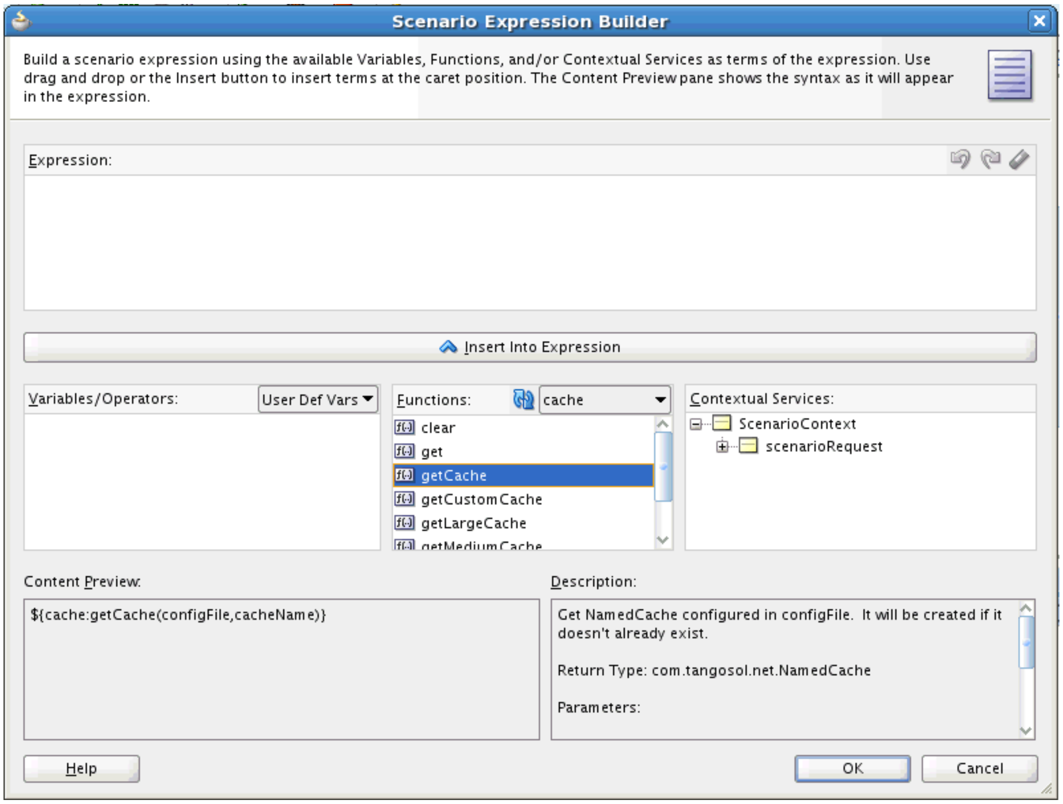
73.3.1 The Cache Function Provider

The CacheFunctionProvider provides methods for managing caches from within a scenario. This function provider delegates to the CoherenceCacheFactory class and includes several convenience methods.

The methods of the Cache Function Provider are described in "Cache Methods" in Chapter 69, "Function Provider Reference."

The prefix for the CacheFunctionProvider is `cache` (the name that appears in the Expression Builder dialogs in the scenario editor). Figure 73–1 shows the cache function provider in the Expression Builder dialog.

Figure 73–1 The Cache Function Provider



Build a scenario expression using the available Variables, Functions, and/or Contextual Services as terms of the expression. Use drag and drop or the Insert button to insert terms at the caret position. The Content Preview pane shows the syntax as it will appear in the expression.

Functions: cache

Content Preview:

${cache:getCache(configFile,cacheName)}

Description:

Get NamedCache configured in configFile. It will be created if it doesn't already exist.

Return Type: com.tangosol.net.NamedCache

Parameters:

Example 73–1 lists the XML structure of a scenario that uses the Cache Function Provider method getMediumCache(). First, a cache is returned and stored in a variable. Then, that variable is used to return a specific value from the cache.

Example 73–1 Using the Cache Function Provider in a Scenario

```
<!-- Check cache first, using CacheFunctionProvider -->
        <assign-variable>
            <variable>userIdCache</variable>
            <expression>${cache:getMediumCache('userIdCache')}</expression>
        </assign-variable>

        <assign-variable>
            <variable>userId</variable>
            <expression>${cache:get(userIdCache,username)}</expression>
        </assign-variable>
```

Example 73–2 shows how the CacheFunctionProvider methods can be called programmatically. Be sure to import: oracle.wcps.dataprovider.base.CacheFunctionProvider.

Example 73–2 Using the Cache Function Provider Methods in a Java Class

```
NamedCache myCache = CacheFunctionProvider.getMediumCache("userIdCache");
String userId = (String)myCache.get("jpalmer");
```

> **Note:** Both examples Example 73–1 and Example 73–2 return a cache named `wcps-cp-medium-userIdCache`. If this cache does not already exist, it will be created.

Example 73–3 shows an example where a custom cache is used. In this case, the returned cache will not be the full cache name without a prefix.

Example 73–3 Using the Cache Function Provider Methods in a Java Class

```
NamedCache myCache = CacheFunctionProvider.getCustomCache("my-custom-cache");
```

73.3.2 Using CoherenceCacheFactory

Data providers and other classes deployed to the WCPS use this factory class to implement caching programmatically. This class is scoped to the web application with which it is deployed.

The CoherenceCacheFactory has a single method to call:

```
public static NamedCache getCache(String cacheConfigFile, String cacheName)
```

Example 73–4 shows how to call getCache() when the cache configuration file is in the WCPS classpath, according to the best practice described previously in Section 73.2.2.3, "Creating Custom Cache Configuration Files."

Example 73–4 Calling getCache() with Configuration File in the Classpath

```
NamedCache myCache = CoherenceCacheFactory.getCache("content-cache-config.xml", "userIdCache");
String userId = (String)myCache.get("jpalmer");
```

Example 73–5 shows how to call getCache() when the cache configuration file is located elsewhere on the file system.

Example 73–5 Calling getCache() with Configuration File on the Filesystem

```
NamedCache myCache = CoherenceCacheFactory.getCache("file:///myconfig/content-cache-config.xml",
"userIdCache");
StringuserId = (String)myCache.get("jpalmer");
```

73.4 Configuring Caches for Personalization Components

This section explains how caches are configured in configuration files. Pre-configured and custom caches configured in `wcps-datatprovider-cache-config.xml` are discussed. Then, cases where a cache has it's own configuration file is explained.

- Section 73.4.1, "Pre-configured Caches"

- Section 73.4.2, "Custom Caches"
- Section 73.4.3, "When a Cache Has Its Own Configuration File"

73.4.1 Pre-configured Caches

The configuration file includes pre-configured caches (small, medium, and large). These caches are accessible through the Cache Function Provider (see Section 73.3.1, "The Cache Function Provider"). The access methods are described in "Cache Methods" in Chapter 69, "Function Provider Reference." They include:

- getSmallCache(String cacheName)
- getMediumCache(String cacheName)
- getLargeCache(String cacheName)

> **Note:** The "cacheName" parameter is appended to an internal prefix to match patterns in the `wcps-dataprovider-cache-config.xml`. For example: `wcps-dp-large-<cacheName>`. For more details, see Section 73.2.2.2, "Data Provider Cache File."

73.4.2 Custom Caches

This assumes you have added a new entry in `wcps-dataprovider-cache-config.xml`. It returns a cache with that cacheName (no prefix), configured as the configuration file has specified it.

The Cache Function Provider method used to return a custom cache that is configured in `wcps-dataprovider-cache-config.xml` is:

```
getCustomCache(String cacheName)
```

For more details, see "Cache Methods" in Chapter 69, "Function Provider Reference."

73.4.3 When a Cache Has Its Own Configuration File

The configuration file, "configFile" must be available to the WCPS web application classloader. See also Section 73.2.2.3, "Creating Custom Cache Configuration Files."

The function provider method used to return a cache configured in a custom cache configuration file is:

`getCache(String` *`myConfigFile.xml`*`,` String *`cacheName`*)

> **Note:** The cache configuration file must be in the application classpath. Otherwise, it can be anywhere in the classpath of the caller.

For more details, see "Cache Methods" in Chapter 69, "Function Provider Reference."

73.5 Configuring a Cache on a Data Provider Connection

You can hard code a cache name into a data provider. Or, you can set the cache name as a parameter in the `wcps-connections.xml` provider configuration file. This file is explained in detail in Section 67.5.6, "Updating the WCPS Connections Configuration File."

> **Tip:** The advantage of setting the cache name as a connection parameter is that the cache name can be changed at runtime.

Example 73–6 illustrates how to configure a cache into `wcps-connnections.xml`. You need to add two properties to the <connection> element.

- **<cacheName>** – Specifies a name for the cache. In the example, the name is `demo-cache`.
- **<configFileUri>** – Specifies the location of the cache configuration file on the filesystem. In the example, the value is file:///mydir/demo-cache.xml.

In this example, the `<connection>` element is given a `<cache-name>` property with a value of `demo-cache`.

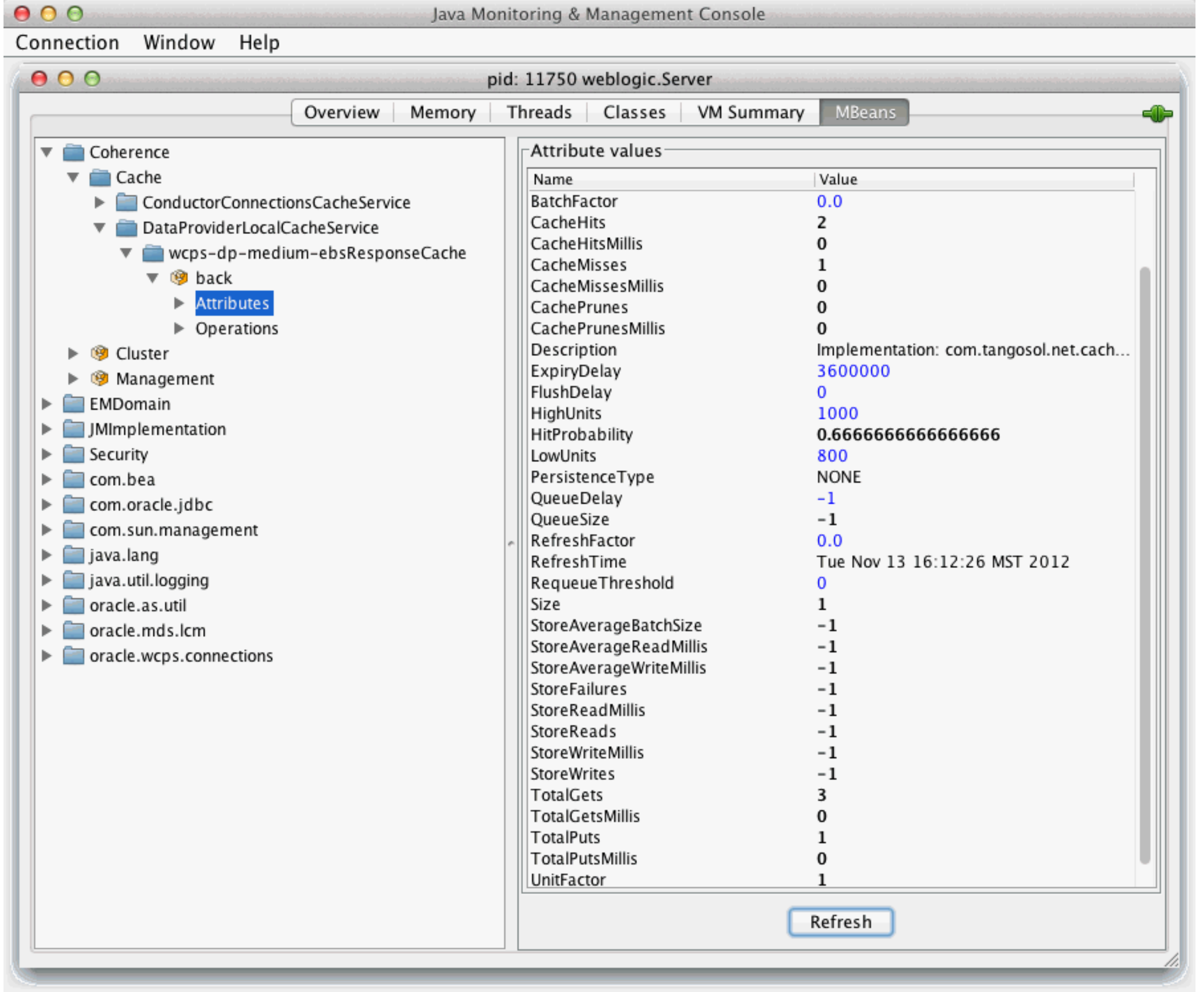
Example 73–6 Data Provider Connection Configuration

```
<connection>
        <connection-name>TestConnection</connection-name>
        <connection-type>my.test.connection</connection-type>
        <namespace>default</namespace>
        <properties>
            <property>
                <name>cacheName</name>
                <value>demo-cache</value>
            </property>
            <property>
                <name>configFileUri</name>
                <value>file:///Users/jpalmer/demo-cache.xml</value>
            </property>
        </properties>
    </connection>
```

73.6 Monitoring Oracle Coherence

Coherence provides an MBean console to monitor its caches. For information on how to set server properties to enable this feature, see *Using JMX to Manage Oracle Coherence*.

Figure 73–2 Coherence Monitoring Console



- Coherence
  - Cache
    - ConductorConnectionsCacheService
    - DataProviderLocalCacheService
      - wcps-dp-medium-ebsResponseCache
        - back
          - Attributes
          - Operations
  - Cluster
  - Management
- EMDomain
- JMImplementation
- Security
- com.bea
- com.oracle.jdbc
- com.sun.management
- java.lang
- java.util.logging
- oracle.as.util
- oracle.mds.lcm
- oracle.wcps.connections

Attribute values

Name	Value
BatchFactor	0.0
CacheHits	2
CacheHitsMillis	0
CacheMisses	1
CacheMissesMillis	0
CachePrunes	0
CachePrunesMillis	0
Description	Implementation: com.tangosol.net.cach...
ExpiryDelay	3600000
FlushDelay	0
HighUnits	1000
HitProbability	0.6666666666666666
LowUnits	800
PersistenceType	NONE
QueueDelay	-1
QueueSize	-1
RefreshFactor	0.0
RefreshTime	Tue Nov 13 16:12:26 MST 2012
RequeueThreshold	0
Size	1
StoreAverageBatchSize	-1
StoreAverageReadMillis	-1
StoreAverageWriteMillis	-1
StoreFailures	-1
StoreReadMillis	-1
StoreReads	-1
StoreWriteMillis	-1
StoreWrites	-1
TotalGets	3
TotalGetsMillis	0
TotalPuts	1
TotalPutsMillis	0
UnitFactor	1

Part XII

Completing Your WebCenter Portal Application

Part XII contains the following chapters:

74

Securing Your WebCenter Portal Framework Application

This chapter describes the security features and mechanisms provided in a WebCenter Portal Framework application, and how you can use Oracle ADF Security to handle authentication and authorization.

This chapter includes the following topics:

74.1 Introduction to Portal Framework Application Security

Portal Framework applications are dynamic and often involve input from users in the form of customizations and preferences, and consequently require a flexible security model. The WebCenter security model is based on the ADF security model rather than the more traditional J2EE security model. For more information on ADF security, see the "Enabling ADF Security in a Fusion Web Application" section in *Fusion Developer's Guide for Oracle Application Development Framework*.

By default, a Portal Framework application is configured with ADF security. A default username and password (weblogic/weblogic1) are created automatically for you, and you can use this username/password combination for testing purposes immediately. For more information about configuring ADF security, see Section 74.3, "Configuring ADF Security." Default login and logout pages are also provided with the Portal Framework application template.

Portal Framework applications can also use two out-of-the-box security tools: the *Role Manager* task flow, and *Page Hierarchy* security editor. The Role Manager task flow provides pre-defined runtime security administration functionality to define roles and permissions for users. Using the Page Hierarchy security editor provides a quick way to apply inherited and/or delegated security to application pages. These two security tools are described in Section 74.4, "Using the Role Manager Task Flow," and Section 74.6, "Using the Page Hierarchy Security Editor."

74.2 Creating an Application Role

There are three roles available out-of-the box:

- **Administrator** - the default member for the application Administrator role is the enterprise Administrator role, which has administrator privileges for the domain, and whose default member is `weblogic`
- **AppConnectionManager** - the default member for the AppConnectionManager role is the application Administrator role, which has administration privileges for the application
- **AppConnectionViewer** - the default member for the AppConnectionViewer role is the authenticated-role

The Administrator role is provided so that you can set up navigation and security for your application, and delegate permissions to other users.

The AppConnectionManager and AppConnectionViewer are roles that are defined for managing and viewing application connections respectively. Typically, application connections are configured and managed using Fusion Middleware Control or WLST commands. However, connections for portlet producers and external applications can be configured through the application's runtime Administration page (or the Role Manager taskflow if implemented separately). To manage or view these connections, you must be part of one of these roles. For more information about the default roles, see the "Understanding Application Roles" section in *Administering Oracle WebCenter Portal*.

You can add members at runtime for these roles using the Administrator page (or the Role Manager taskflow if implemented separately), and in JDeveloper using the JAZN Editor. Out-of-the-box, an administrator will be able to configure external application and portlet producer connections, and any other authenticated user will only be able to view these connections. Similarly, you can add users to the application by selecting the Users tab in the ADF Security Policy editor, clicking the Add (+) icon, and specifying a username and password.

To create an application role:

1. Access the ADF Security Policy editor using any of the following methods:
   - Navigate to the **jazn-data.xml** file in the Application Resources Panel, under the META-INF folder. Right-click **jazn-data.xml** and select **Open** from the context menu. Open the Application Roles tab.
   - Right-click the application name, select **Secure** and then **Application Roles**.
   - From the Application menu, select **Secure** and then **Application Roles**.
2. In the Application Roles editor, click the Add (+) icon and select **New Role**.
3. Enter a name, a display name, and description for the new role.
4. Save the file.

Similarly, you can add users to the application by opening the Users tab in the ADF Security Policy editor, clicking the Add (+) icon, and specifying a username and password.

74.3 Configuring ADF Security

ADF security is configured by default if you created your application using the Portal Framework application template. This section describes the Configure ADF security wizard, which you can use to override the default settings for a Portal Framework application, or if your application does not use the Portal Framework application template (i.e., you did not select the "Configure the application with standard portal features" checkbox when you created your application). This section also describes the grants that are generated when you create a Portal Framework application, and when components are consumed.

This section contains the following subsections:

- Section 74.3.1, "Configuring ADF Security Settings"
- Section 74.3.2, "Automated Security Grants for Portal Framework Applications"

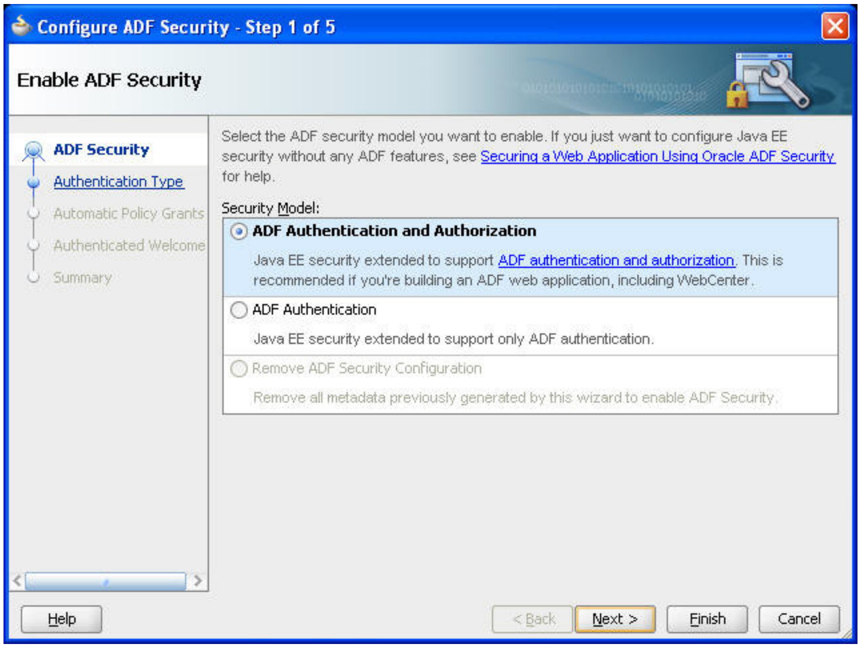
74.3.1 Configuring ADF Security Settings

This section describes the Configure ADF security wizard, which you can use to override the default settings for a Portal Framework application, or if your application does not use the Portal Framework application template (i.e., you did not select the "Configure the application with standard portal features" checkbox when you created your application).

To configure the ADF security settings:

1. Open your portal application.
2. Access the Configure ADF Security Wizard using one of the following methods:
   - From the **Application** menu, select **Secure** and then **Configure ADF Security**.
   - Right-click the application name, select **Secure** and then **Configure ADF Security**.
3. On the Enable ADF Security page, select **ADF Authentication and Authorization**, which is the typical choice for Portal Framework applications.

Figure 74–1 ADF Security Page of the ADF Security Wizard



Configure ADF Security - Step 1 of 5

Enable ADF Security

Select the ADF security model you want to enable. If you just want to configure Java EE security without any ADF features, see Securing a Web Application Using Oracle ADF Security for help.

Security Model:

● **ADF Authentication and Authorization**

Java EE security extended to support ADF authentication and authorization. This is recommended if you're building an ADF web application, including WebCenter.

○ ADF Authentication

Java EE security extended to support only ADF authentication.

○ Remove ADF Security Configuration

Remove all metadata previously generated by this wizard to enable ADF Security.

4. Click **Next**.

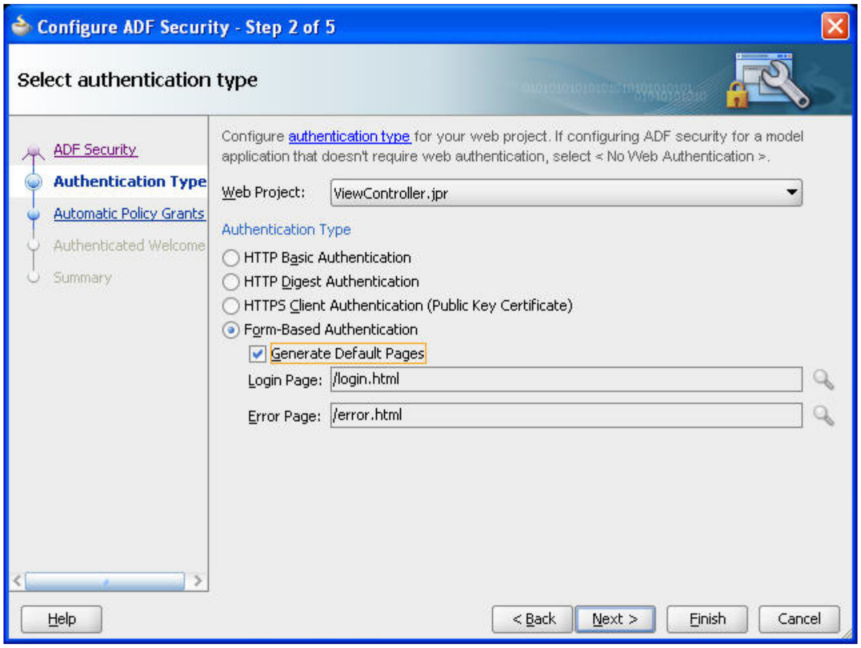
5. Notice that form-based authentication is selected by default.

   To make the process of securing your application easy, select **Form-Based Authentication** and then the **Generate Default Pages** option, as shown in Figure 74–2.

   > **Note:** Portal Framework applications provide default login and error pages. You should only select the **Generate Default Pages** option for applications not built using the Portal Framework application template.

   Alternatively, if you do not select Generate Default Pages, you can create custom login and error pages. For information about creating custom login pages, see Section 74.7, "Creating Login Pages and a Login Component."

Figure 74–2 Authentication Page of ADF Security Wizard



Configure ADF Security - Step 2 of 5

Select authentication type

Configure authentication type for your web project. If configuring ADF security for a model application that doesn't require web authentication, select < No Web Authentication >.

Web Project: ViewController.jpr

Authentication Type

○ HTTP Basic Authentication

○ HTTP Digest Authentication

○ HTTPS Client Authentication (Public Key Certificate)

● Form-Based Authentication

☑ Generate Default Pages

Login Page: /login.html

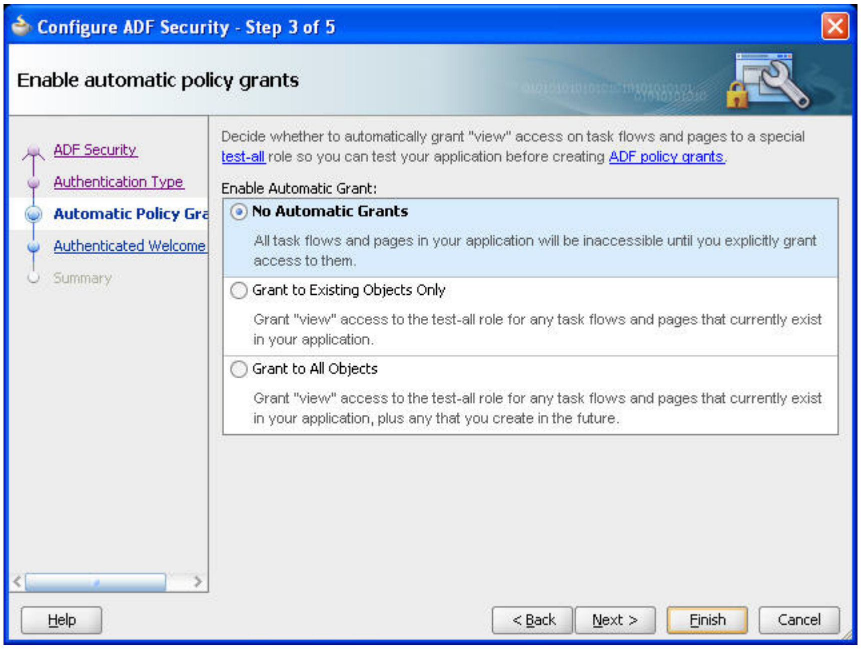
Error Page: /error.html

6. Click **Next**.

7. On the Enable automatic policy grants page, shown in Figure 74–3, select whether to make ADF resources public without requiring application developers to first define ADF policy grants. For a standard security implementation, you can select the **No Automatic Grant** option.

   However, in this case, you must individually grant permissions on each page in the application.

Figure 74–3 Automatic Policy Grants Page



Configure ADF Security - Step 3 of 5

Enable automatic policy grants

Decide whether to automatically grant "view" access on task flows and pages to a special test-all role so you can test your application before creating ADF policy grants.

Enable Automatic Grant:

● **No Automatic Grants**

All task flows and pages in your application will be inaccessible until you explicitly grant access to them.

○ Grant to Existing Objects Only

Grant "view" access to the test-all role for any task flows and pages that currently exist in your application.

○ Grant to All Objects

Grant "view" access to the test-all role for any task flows and pages that currently exist in your application, plus any that you create in the future.

When you enable automatic policy grants, a *View* grant for all ADF resources is made to the `test-all` application role, whose default member is the `public` role. This option provides a convenient way to run and test application resources without the restricted access that ADF authorization enforces. You can also disable automatic policy grants to secure all ADF resources by default.

Select **No Automatic Grant** when you want to explicitly configure a policy store to grant access to ADF resources. No automatic grants to the `test-all` application role are granted. However when WebCenter Portal task flows are consumed in an application, the WebCenter extension automatically adds appropriate grants for these task flows, giving View access to the role `authenticated-role`. For more information about the specific grants provided through task flows, see Section 74.3.2, "Automated Security Grants for Portal Framework Applications."

> **Note:** By default, `anonymous-user` is granted permission to access task flows. Anonymous access is also provided to the `resourceViewer` task flow that allows resources to be visible when looking at data through Activity Stream or Search. If you have no public or anonymous access to your functionality, all the grants that are currently given to `anonymous-role`, should be moved to `authenticated-role`. Also, grants made to `authenticated-role` are visible in the source view of the `jazn-data.xml` file.
>
> If the default grants to `anonymous-role` or `authenticated-role` are not appropriate to the application, you can change them by opening the source view of the application's the `jazn-data.xml` file and cutting and pasting the permissions to the appropriate role.

Select **Grant to Existing Objects Only** when you want JDeveloper to grant View privileges to the `test-all` (public) application role and you want this policy to apply to all your application's existing ADF task flows and web pages in the user interface project.

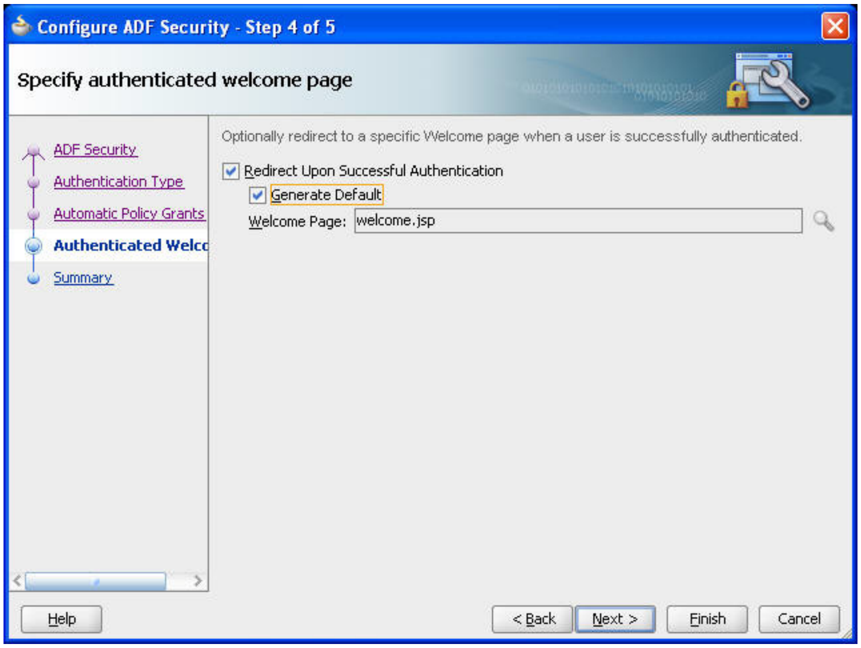
Select **Grant to All Objects** when you want JDeveloper to grant View privileges to the `test-all` application role and you want this policy to apply to all ADF task flows and web pages that developers create in the user interface project. Note that the **Grant to All Objects** option appears when you run the wizard for the first time. Subsequently, the **Grant to New Objects** option appears each time you run the wizard.

8. Click **Next**.

9. Optionally, if you want to display a specific welcome page upon authentication, then select the **Redirect Upon Successful Authentication** option as shown in Figure 74–4.

   You can either create a custom welcome page or let the wizard create a default one. To keep the process simple, select **Generate Default**.

Figure 74–4 Specify an Authenticated Welcome Page



Specify authenticated welcome page

Optionally redirect to a specific Welcome page when a user is successfully authenticated.

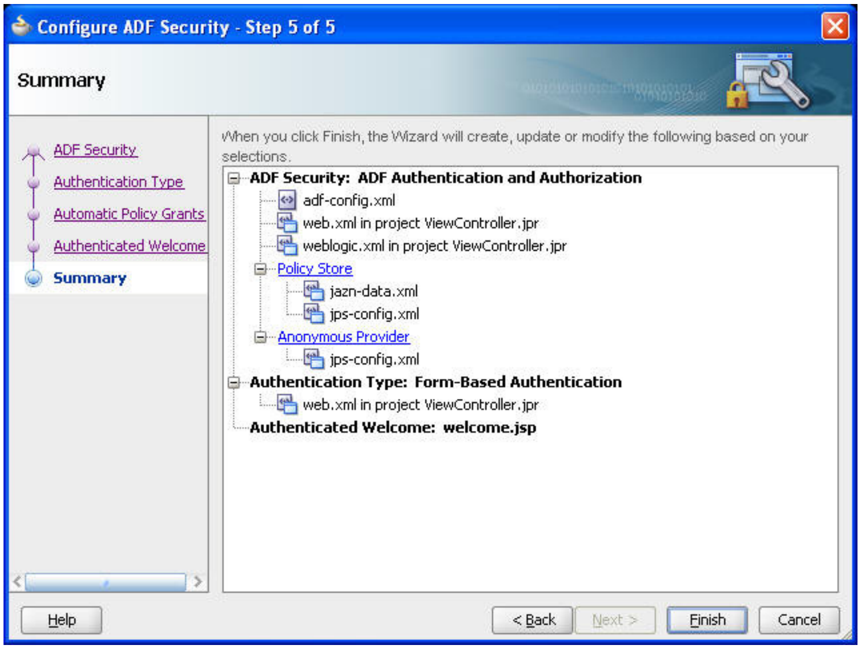
☑ Redirect Upon Successful Authentication

☑ Generate Default

Welcome Page: welcome.jsp

10. The Summary page opens, as shown in Figure 74–5.

Figure 74–5 Summary Page



Summary

When you click Finish, the Wizard will create, update or modify the following based on your selections.

```
⊟ ADF Security: ADF Authentication and Authorization
    adf-config.xml
    web.xml in project ViewController.jpr
    weblogic.xml in project ViewController.jpr
  ⊟ Policy Store
      jazn-data.xml
      jps-config.xml
  ⊟ Anonymous Provider
      jps-config.xml
⊟ Authentication Type: Form-Based Authentication
    web.xml in project ViewController.jpr
  Authenticated Welcome: welcome.jsp
```

11. Click **Finish**.

    It may take several moments for the wizard to complete.

12. On the Security Infrastructure Created dialog, click **OK**.

74.3.2 Automated Security Grants for Portal Framework Applications

Table 74–1 lists the security grants that are provided automatically in a Portal Portal Framework application configured with standard portal features.

Note: If you do not have public or anonymous access to your application, grants that are currently given to `anonymous-role` can be removed using the following WLST command:

```
revokePermission(appStripe="papp1#V2.0",principalClass=
"oracle.security.jps.internal.core.principals.JpsAnonymousRoleImpl"
,
principalName="anonymous-role",
permClass="oracle.adf.controller.security.TaskFlowPermission",
permActions="view", permTarget="/oracle/webcenter/.*")
```

Table 74–1 Automated Security Grants for Portal Framework applications

Role	Grant	Actions	Resource Name
anonymous-role	TaskflowPermission	View	/oracle/webcenter/siteresources/scopedMD/.* /oracle/webcenter/portalapp/.* /oracle/webcenter/navigationtaskflows/view/pagebreadcrumb-definition.xml#pagebreadcrumb-definition /oracle/webcenter/navigationtaskflows/view/pagemenu-definition.xml#pagemenu-definition /oracle/webcenter/navigationtaskflows/view/pagetree-definition.xml#pagetree-definition /oracle/webcenter/navigationtaskflows/view/.* /oracle/webcenter/.*
	RegionPermission	View	oracle.webcenter.siteresources.scopedMD.* oracle.webcenter.taskflow.view.ContainerPageDef oracle.webcenter.taskflow.view.ViewerPageDef oracle.webcenter.taskflowstyle.view.PreviewPageDef oracle.webcenter.page.pstemplates.* oracle.webcenter.portalapp.pagetemplates.* oracle.webcenter.portalapp.pages.loginPageDef oracle.webcenter.portalapp.pages.errorPageDef oracle.webcenter.portalapp.pages.navigation_rendererPageDef
	HierarchicalResource Permission	View	serviceID=oracle.webcenter.page,scopeID=s8bba98ff_4cbb_40b8_beee_296c916a23ed,resourceID=s8bba98ff_4cbb_40b8_beee_296c916a23ed
authenticated-role	RegionPermission	View	oracle.webcenter.portalwebapp.pages.adminPageDef oracle.webcenter.collab.* oracle.webcenter.doclib.* oracle.webcenter.tagging.*
	RegionPermission	Grant	oracle.webcenter.taskflow.view.ContainerPageDef
	HierarchicalResource Permission	Personalize, View	serviceID=oracle.webcenter.page,scopeID=s8bba98ff_4cbb_40b8_beee_296c916a23ed,resourceID=s8bba98ff_4cbb_40b8_beee_296c916a23ed

Table 74–1 (Cont.) Automated Security Grants for Portal Framework applications

Role	Grant	Actions	Resource Name
	CatalogPermission	Create, Edit	/oracle/webcenter/quicklinks/scopedMD/.*
Administrator	HierarchicalResource Permission	Create, Delete, Grant, Manage, Personalize, Update, View	serviceID=oracle.webcenter.page,scopeID=s8bba98ff_4cbb_40b8_beee_296c916a23ed,resourceID=s8bba98ff_4cbb_40b8_beee_296c916a23ed
	WebCenterResource Permission	Manage	oracle_webcenter_siteresource_s8bba98ff_4cbb_40b8_beee_296c916a23ed_contentpresenter_.* oracle_webcenter_siteresource_s8bba98ff_4cbb_40b8_beee_296c916a23ed_datacontrol_.* oracle_webcenter_siteresource_s8bba98ff_4cbb_40b8_beee_296c916a23ed_navigation_.* oracle_webcenter_siteresource_s8bba98ff_4cbb_40b8_beee_296c916a23ed_pagestyle_.* oracle_webcenter_siteresource_s8bba98ff_4cbb_40b8_beee_296c916a23ed_catalog_.* oracle_webcenter_siteresource_s8bba98ff_4cbb_40b8_beee_296c916a23ed_pagetemplate_.* oracle_webcenter_siteresource_s8bba98ff_4cbb_40b8_beee_296c916a23ed_skin_.* oracle_webcenter_siteresource_s8bba98ff_4cbb_40b8_beee_296c916a23ed_taskflow_.* oracle_webcenter_siteresource_s8bba98ff_4cbb_40b8_beee_296c916a23ed_taskflowstyle_.*

Table 74–2 lists the grants that are given when a service is consumed. A service is consumed whenever a component (from the Component Palette) or a task flow (from the Resource Palette) belonging to that service is added to a page.

Grants are added automatically to the `jazn-data.xml` file. They can be viewed and edited through the ADF Security Policy Editor. For more information, see Section 74.3.1, "Configuring ADF Security Settings."

> **Note:** When a Portal Framework application is created, the following element:
>
> `<name>resource=`*`MyApplicationName`*`</name>`
>
> (where *`MyApplicationName`* is the name of the application you created) is added to the `jazn-data.xml` file. If you modify the `jazn-data.xml` file, be sure that the application name matches the application name under the `jazn-data.xml` file's <policy-store> element. If these two application names do not match, any functionality that relies on WS-security identity propagation will not work.

If ADF security has not been configured for the application, then these grants are not added; however, if security is later configured, grants are added for all components that have been consumed in the application. Common grants are granted whenever any WebCenter Portal service is consumed.

Table 74–2 Automated Security Grants for Portal Framework Applications

Service	Role	Grant	Actions	Resource Name
Common	anonymous-role	TaskFlow Permission	View	/oracle/webcenter/framework/service/controller/taskflows/resourceViewer.xml#resourceViewer /oracle/webcenter/security/peoplepicker/jsf/taskflows/peoplepicker.xml#peoplepicker /oracle/webcenter/peopleconnections/personalweb/view/jsf/regions/profile-gallery.xml#profile-gallery /oracle/webcenter/peopleconnections/profile/view/jsf/regions/extended/extended-profile.xml#extended-profile /oracle/webcenter/peopleconnections/view/jsf/regions/profile-snapshot.xml#profile-snapshot /oracle/webcenter/peopleconnections/connections/controller/taskflows/connections-main-view-taskflow.xml#connections-main-view-taskflow /oracle/webcenter/peopleconnections/connections/controller/taskflows/connections-mini-view-taskflow.xml#connections-mini-view-taskflow /oracle/webcenter/peopleconnections/connections/controller/taskflows/table-of-connections-taskflow.xml#table-of-connections-taskflow /oracle/webcenter/peopleconnections/wall/controller/taskflows/WallDetailViewer.xml#WallDetailViewer /oracle/webcenter/peopleconnections/wall/controller/taskflows/WallViewer.xml#WallViewer /oracle/webcenter/peopleconnections/kudos/controller/taskflows/KudosDetailViewer.xml#KudosDetailViewer /oracle/webcenter/peopleconnections/kudos/controller/taskflows/KudosMiniViewer.xml#KudosMiniViewer /oracle/webcenter/activitystreaming/controller/taskflows/activity-streaming-mainview.xml#activity-streaming-mainview /oracle/webcenter/activitystreaming/controller/taskflows/activity-streaming-miniview.xml#activity-streaming-miniview /oracle/webcenter/peopleconnections/.* /oracle/webcenter/activitystreaming/.*
	authenticated-role	Region Permission	View	oracle.webcenter.security.peoplepicker.pageDefs.oracle_webcenter_security_peoplepicker_jsf_pages_PeoplePickerPagePageDef
	authenticated-role	CustomPage Permission	View	oracle.webcenter.framework.service.view.pageDefs.resourceExternalPageDef
	authenticated-role	Profile Permission	Edit, Share, View	/oracle/webcenter/peopleconnections/profile/s8bba98ff_4cbb_40b8_beee_296c916a23ed/.*
	Administrator	WCApp Permission	Manage	application
	Administrator	Profile Permission	Manage	/oracle/webcenter/peopleconnections/profile/s8bba98ff_4cbb_40b8_beee_296c916a23ed/.*

Table 74–2 (Cont.) Automated Security Grants for Portal Framework Applications

Service	Role	Grant	Actions	Resource Name
Announcement	anonymous-role	TaskFlow Permission	View	/oracle/webcenter/collab/announcement/view/taskflows/main-view-definition.xml#announcement-main-view
				/oracle/webcenter/collab/announcement/view/taskflows/mini-view-definition.xml#announcement-mini-view
				/oracle/webcenter/collab/announcement/view/taskflows/link-existing-view-definition.xml#link-existing-view-definition
				/oracle/webcenter/collab/announcement/view/taskflows/config-view-definition.xml#announcement-config-view
				/oracle/webcenter/collab/announcement/view/taskflows/announcement-view-definition.xml#announcement-resource-view
				/oracle/webcenter/collab/announcement/view/taskflows/.*
	authenticated-role	Region Permission	View	oracle.webcenter.collab.announcement.view.pageDefs.oracle_webcenter_collab_announcement_view_jsf_pages_AnnouncementLinkExistingViewPageDef
				oracle.webcenter.collab.announcement.view.pageDefs.oracle_webcenter_collab_announcement_view_jsf_pages_AnnouncementLinkResourceViewPageDef
Composer	anonymous-role	Taskflow Permission	View	/oracle/adfinternal/pageeditor/.*
Discussions	anonymous-role	Taskflow Permission	View	/oracle/webcenter/collab/forum/view/taskflows/main-task-flow.xml#forum-main
				/oracle/webcenter/collab/forum/view/taskflows/miniview-task-flow.xml#forum-miniview
				/oracle/webcenter/collab/forum/view/taskflows/popularTopic-task-flow.xml#forum-popularTopic
				/oracle/webcenter/collab/forum/view/taskflows/recentTopic-task-flow.xml#forum-recentTopic
				/oracle/webcenter/collab/forum/view/taskflows/watchedTopic-task-flow.xml#forum-watchedTopic
				/oracle/webcenter/collab/forum/view/taskflows/watchedForum-task-flow.xml#forum-watchedForum
				/oracle/webcenter/collab/forum/view/taskflows/config-task-flow.xml#forum-config-view
				/oracle/webcenter/collab/forum/view/taskflows/link-existing-task-flow.xml#forum-link-existing
				/oracle/webcenter/collab/forum/view/taskflows/link-new-task-flow.xml#forum-link-new
				/oracle/webcenter/collab/forum/view/taskflows/message-task-flow.xml#forum-message
				/oracle/webcenter/collab/forum/view/taskflows/resource-view-task-flow.xml#forum-resource-view
				/oracle/webcenter/collab/forum/view/taskflows/scope-config-task-flow.xml#forum-scope-config-view
				/oracle/webcenter/collab/forum/view/taskflows/.*

Table 74–2 (Cont.) Automated Security Grants for Portal Framework Applications

Service	Role	Grant	Actions	Resource Name
	authenticated-role	Region Permission	View	oracle.webcenter.collab.forum.view.pageDefs.oracle_webcenter_collab_forum_view_jsf_pages_ForumLinkExistingViewPageDef oracle.webcenter.collab.forum.view.pageDefs.oracle_webcenter_collab_forum_view_jsf_pages_ForumLinkNewViewPageDef oracle.webcenter.collab.forum.view.pageDefs.oracle_webcenter_collab_forum_view_jsf_pages_ForumLinkResourceViewPageDef
Documents	anonymous-role	Taskflow Permission	View	/oracle/webcenter/doclib/view/jsf/taskflows/presenter/contentPresenter.xml#doclib-content-presenter /oracle/webcenter/doclib/view/jsf/taskflows/docListViewer.xml#doclib-document-list-viewer /oracle/webcenter/doclib/view/jsf/taskflows/docViewer/docInfo.xml#doclib-document-information /oracle/webcenter/doclib/view/jsf/taskflows/explore/explorer.xml#doclib-explorer /oracle/webcenter/doclib/view/jsf/taskflows/treeNav/treeNavigator.xml#doclib-navigator /oracle/webcenter/doclib/view/jsf/taskflows/docViewer/documentViewer.xml#doclib-document-viewer /oracle/webcenter/doclib/view/jsf/taskflows/folderViewer/folderView.xml#doclib-folder-viewer /oracle/webcenter/doclib/view/jsf/taskflows/mainView.xml#doclib-document-library /oracle/webcenter/doclib/view/jsf/taskflows/miniProperties/miniProperties.xml#doclib-mini-properties /oracle/webcenter/doclib/view/jsf/taskflows/recentDocuments.xml#doclib-recent-documents /oracle/webcenter/doclib/view/jsf/taskflows/richTextEditor/editor.xml#doclib-richtext-editor /oracle/webcenter/doclib/view/jsf/taskflows/upload/uploader.xml#doclib-upload-document /oracle/webcenter/doclib/view/jsf/taskflows/versionHistory/history.xml#doclib-version-history /oracle/webcenter/blog/view/jsf/taskflows/blogDigestViewer/blog-main-view.xml#blog-main-view /oracle/webcenter/doclib/view/jsf/taskflows/.* /oracle/webcenter/blog/view/jsf/taskflows/.*
	authenticated-role	Region Permission	View	oracle.webcenter.doclib.view.jsf.* oracle.webcenter.blog.view.jsf.*
External Application	anonymous-role	Taskflow Permission	View	/oracle/adfinternal/extapp/view/fragments/extapp-credential-provisioning-taskflow.xml#extapp-credential-provisioning-taskflow /oracle/adfinternal/extapp/view/fragments/extapp-change-password-taskflow.xml#extapp-change-password-taskflow

Table 74–2 (Cont.) Automated Security Grants for Portal Framework Applications

Service	Role	Grant	Actions	Resource Name
Links	anonymous-role	Taskflow Permission	View	/oracle/webcenter/relationship/view/jsf/resources/links-detail.xml#links-detail /oracle/webcenter/relationship/view/jsf/resources/links-detail-popup.xml#links-detail-popup /oracle/webcenter/relationship/view/jsf/resources/links-to-service.xml#link-to-service /oracle/webcenter/relationship/view/jsf/resources/links-picker-popup.xml#links-picker-popup /oracle/webcenter/relationship/url/view/jsf/taskflows/linkToUrl.xml#link-to-url
	Administrator	Relationship Permission	Manage	*s8bba98ff_4cbb_40b8_beee_296c916a23ed/.*
Lists	anonymous-role	Taskflow Permission	View	/oracle/webcenter/list/view/jsf/regions/main-view-task-flow.xml#main-view-task-flow /oracle/webcenter/list/view/jsf/regions/list-instance-view-task-flow.xml#list-instance-view-task-flow /oracle/webcenter/list/view/jsf/regions/.*
	authenticated-role	Region Permission	View	/oracle/webcenter/list/templates/lists/.*
	Administrator	List Permission	View	/oracle/webcenter/list/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/lists/.*
Mail	anonymous-role	Taskflow Permission	View	/oracle/webcenter/collab/mail/view/jsf/regions/compose-task-flow.xml#mail-compose-view /oracle/webcenter/collab/mail/view/jsf/regions/content-view-definition.xml#mail-content-view /oracle/webcenter/collab/mail/view/jsf/regions/dl-config-definition.xml#dl-config-view /oracle/webcenter/collab/mail/view/jsf/regions/mini-view-definition.xml#mail-mini-view /oracle/webcenter/collab/mail/view/jsf/regions/.*
	authenticated-role	Region Permission	View	oracle.webcenter.collab.mail.view.pageDefs.oracle_webcenter_collab_mail_view_jsf_pages_ComposeviewPageDef oracle.webcenter.collab.mail.view.pageDefs.oracle_webcenter_collab_mail_view_jsf_pages_ContentViewPageDef
Notifications	anonymous-role	Taskflow Permission	View	/oracle/webcenter/notification/view/jsf/regions/SubscriptionPreferences.xml#SubscriptionPreferences /oracle/webcenter/notification/view/jsf/regions/SubscriptionsViewer.xml#SubscriptionsViewer

Table 74–2 (Cont.) Automated Security Grants for Portal Framework Applications

Service	Role	Grant	Actions	Resource Name
Page	anonymous-role	TaskFlow Permission	View	/oracle/webcenter/page/view/jsf/fragments/page-create-page.xml#page-create-page /oracle/webcenter/page/view/jsf/fragments/page-doc-prop-panel-definition.xml#page-doc-prop-panel-definition /oracle/webcenter/page/view/jsf/fragments/page-doc-sec-panel-definition.xml#page-doc-sec-panel-definition /oracle/webcenter/page/view/jsf/fragments/golink-prop-panel-definition.xml#golink-prop-panel-definition
	authenticated-role	Region Permission	Create	oracle_webcenter_page_scopedMD_s8bba98ff_4cbb_40b8_beee_296c916a23ed_.*
	Administrator	Region Permission	Customize, Edit, Grant, Personalize, View	oracle_webcenter_page_scopedMD_s8bba98ff_4cbb_40b8_beee_296c916a23ed_.*
Polls	anonymous-role	Taskflow Permission	View	/oracle/webcenter/collab/survey/view/jsf/taskflows/list-surveys-definition.xml#list-surveys /oracle/webcenter/collab/survey/view/jsf/taskflows/take-survey-definition.xml#take-survey /oracle/webcenter/collab/survey/view/jsf/taskflows/quick-poll-definition.xml#quick-poll /oracle/webcenter/collab/survey/view/jsf/taskflows/view-results-definition.xml#view-results /oracle/webcenter/collab/survey/view/jsf/taskflows/take-polls-definition.xml#take-polls /oracle/webcenter/collab/survey/view/jsf/taskflows/empty-definition.xml#empty-definition /oracle/webcenter/collab/survey/view/jsf/taskflows/.*
Recent Activities	anonymous-role	TaskFlow Permission	View	/oracle/webcenter/recentactivity/controller/taskflows/recent-activities.xml#recent-activities /oracle/webcenter/recentactivity/controller/taskflows/.*
RSS	anonymous-role	TaskFlow Permission	View	/oracle/webcenter/rssviewer/view/jsf/fragments/RSSViewerTaskFlow.xml#RSSViewerTaskFlow /oracle/webcenter/rssviewer/view/jsf/fragments/.*

Table 74–2 (Cont.) Automated Security Grants for Portal Framework Applications

Service	Role	Grant	Actions	Resource Name
Search	anonymous-role	TaskFlow Permission	View	/oracle/webcenter/search/controller/taskflows/searchResults.xml#search-view
				/oracle/webcenter/search/controller/taskflows/localToolbarSearch.xml#search-toolbar
				/oracle/webcenter/search/controller/taskflows/preferences.xml#search-preferences
				/oracle/webcenter/search/controller/taskflows/allSavedSearches.xml#all-saved-searches
				/oracle/webcenter/search/controller/taskflows/simpleSearchResults.xml#search-simple-view
				/oracle/webcenter/search/controller/taskflows/customize.xml#search-customize
				/oracle/webcenter/search/controller/taskflows/.*
Tags	anonymous-role	TaskFlow Permission	View	/oracle/webcenter/tagging/controller/taskflows/related-links.xml#tagging-related-links
				/oracle/webcenter/tagging/controller/taskflows/launch-dialog.xml#tagging-launch-dialog
				/oracle/webcenter/tagging/controller/taskflows/tagging-personal-view.xml#tagging-personal-view
				/oracle/webcenter/tagging/controller/taskflows/tag-selection.xml#tag-selection
				/oracle/webcenter/tagging/controller/taskflows/related-resources.xml#related-resources
				/oracle/webcenter/tagging/controller/taskflows/tag-center-task-flow.xml#tag-center
				/oracle/webcenter/tagging/controller/taskflows/tag-center-related-tags.xml#tag-center-related-tags
				/oracle/webcenter/tagging/controller/taskflows/tag-center-related-users.xml#tag-center-related-users
	authenticated-role	Region Permission	View	oracle.webcenter.tagging.view.pageDefs.oracle_webcenter_tagging_view_jsf_fragments_launch_dialogPageDef
				oracle.webcenter.tagging.view.pageDefs.oracle_webcenter_tagging_view_jsf_fragments_tag_centerPageDef
				oracle.webcenter.tagging.view.pageDefs.oracle_webcenter_tagging_view_jsf_fragments_tag_center_related_resourcesPageDef
				oracle.webcenter.tagging.view.pageDefs.oracle_webcenter_tagging_view_jsf_fragments_tag_center_related_tagsPageDef
				oracle.webcenter.tagging.view.pageDefs.oracle_webcenter_tagging_view_jsf_fragments_tag_center_related_usersPageDef
				oracle.webcenter.tagging.view.pageDefs.oracle_webcenter_tagging_view_jsf_fragments_tag_center_tag_selectionPageDef
Worklist	anonymous-role	TaskFlow Permission	View	/oracle/webcenter/worklist/view/jsf/taskFlowDefs/worklist.xml#worklist
				/oracle/webcenter/worklist/view/jsf/taskFlowDefs/.*

74.4 Using the Role Manager Task Flow

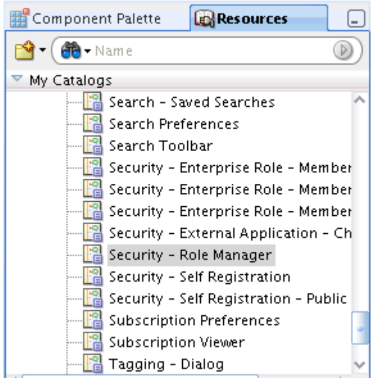
The Role Manager task flow lets administrators manage application roles, its memberships, and associate service permissions for the role. The Role Manager task flow is available out-of-the-box from the runtime Administration page's Security tab for applications built using the Portal Framework application template. For information on how to use the Role Manager runtime to manage and configure users and application roles, see the "Managing Users and Application Roles" section in *Administering Oracle WebCenter Portal*.

To prevent customizations from being overwritten during updates, the source for the Administration page should not be customized. You can, however, choose to write your own administration page if the default administration page is not sufficient, in which case you can use the Role Manager task flow as part of your application's runtime security administration. Follow the steps below to add it a JSF or JSP page and include it in your application.

To add the Role Manager task flow to your Portal Framework application:

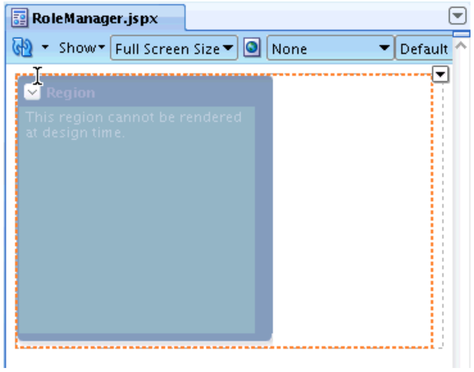
1. Create a new application choosing **Portal Framework application** as the application type.
2. Create the application adding any project technology libraries that the application may require. Do not uncheck the **Configure the application with standard Portal features** check box.
3. Create a new JSF or JSP page.
4. From the Resource Palette, expand WebCenter Portal - Services Catalog, and from the list of Task Flows, select the `Security - Role Manager` task flow.

Figure 74–6 Resource Palette - WebCenter Portal - Services Catalog


Component Palette
Resources
Name
My Catalogs
Search - Saved Searches
Search Preferences
Search Toolbar
Security - Enterprise Role - Member
Security - Enterprise Role - Member
Security - Enterprise Role - Member
Security - External Application - Ch
Security - Role Manager
Security - Self Registration
Security - Self Registration - Public
Subscription Preferences
Subscription Viewer
Tagging - Dialog

5. Drag the Role Manager task flow onto the page you created as a region.

Figure 74–7 Role Manager Task Flow



6. Build the application, log in as an administrator, and navigate to the page containing the role Manager task flow.

74.5 Using the Enterprise Role Member Task Flows

The Enterprise Role Member task flows provide additional task flows to the Role Manager task flow that you can add to a page to monitor enterprise users and roles. The members shown are both roles and users, with the result shown in a tree structure. Roles can be further expanded to see their members.

To add the task flows, follow the same steps as for the Role Manager task flow (see Section 74.4, "Using the Role Manager Task Flow"), substituting one of the task flows described below. Note that all of the Enterprise Role Members task flows take a single mandatory parameter which is the enterprise role name.

- **Security - Enterprise Role Members**

  This task flow shows a list of the members for a specified role.

- **Security - Enterprise Role - Members Search**

  This task flow does a nested search of members using a pattern for the specified role and shows the list of members.

- **Security - Enterprise Role - Members Viewer**

  This task flow shows the Members and Search tabs that are shown for the Enterprise Role Members and Members Search task flows in a single page.

74.6 Using the Page Hierarchy Security Editor

This section describes how to use page hierarchy security to provide inherited and delegated security for Portal Framework application pages. It includes the following sections:

- Section 74.6.1, "Introduction to Page Hierarchy Security"
- Section 74.6.2, "Building a Page Hierarchy"

74.6.1 Introduction to Page Hierarchy Security

This section describes the page hierarchy model and how page hierarchy security works within a Portal Framework application.

This section includes the following subsections:

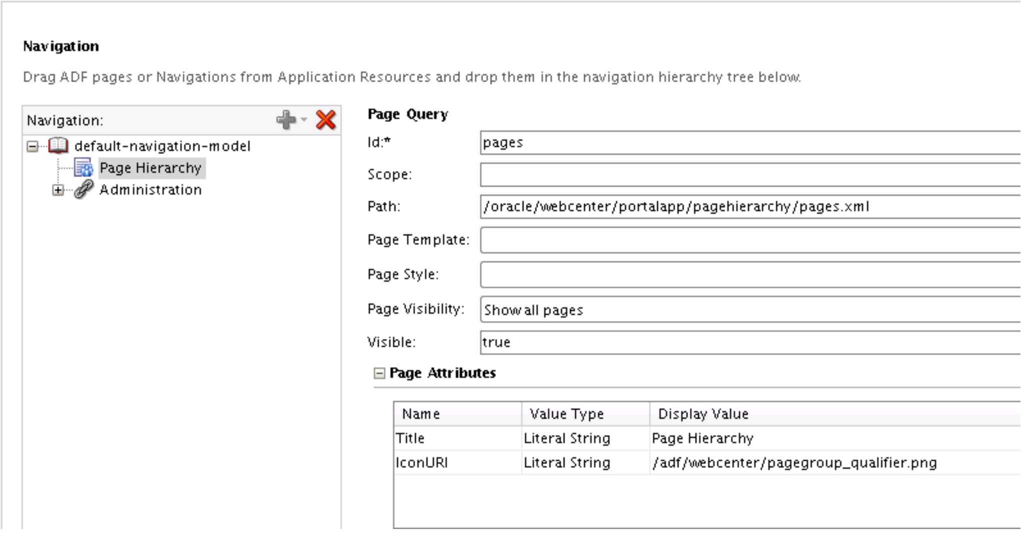
- Section 74.6.1.1, "Page Hierarchy Model"
- Section 74.6.1.2, "Page-level and Page Hierarchy Security"
- Section 74.6.1.3, "Inherited and Delegated Security"

74.6.1.1 Page Hierarchy Model

A page hierarchy has a default security policy that is set at the root of the hierarchy. Unless explicitly overridden, this policy applies to all pages underneath. At any page in the hierarchy, it is possible to override the inherited policy with a new overriding policy, allowing for delegated administration and modifying the policy at the subordinate pages. Once the policy is overridden for a particular page, the children of that page, by default, will inherit the new policy. The policy established at any node is a list of grants indicating what permissions each of the grantees has on that page and its children, if any.

When you create a Framework application, a default navigation model is created for you that also contains the root node of a page hierarchy. These two structures work independently and collectively to provide the navigation flow and secured access to pages for your application. Figure 74–8 shows the default navigation model (`default-navigation-model.xml`), which includes a node for the default page hierarchy (`pages.xml`).

Figure 74–8 Default Navigation Model



Navigation

Drag ADF pages or Navigations from Application Resources and drop them in the navigation hierarchy tree below.

Navigation:
- default-navigation-model
  - Page Hierarchy
  - Administration

Page Query

Id:*	pages
Scope:	
Path:	/oracle/webcenter/portalapp/pagehierarchy/pages.xml
Page Template:	
Page Style:	
Page Visibility:	Show all pages
Visible:	true

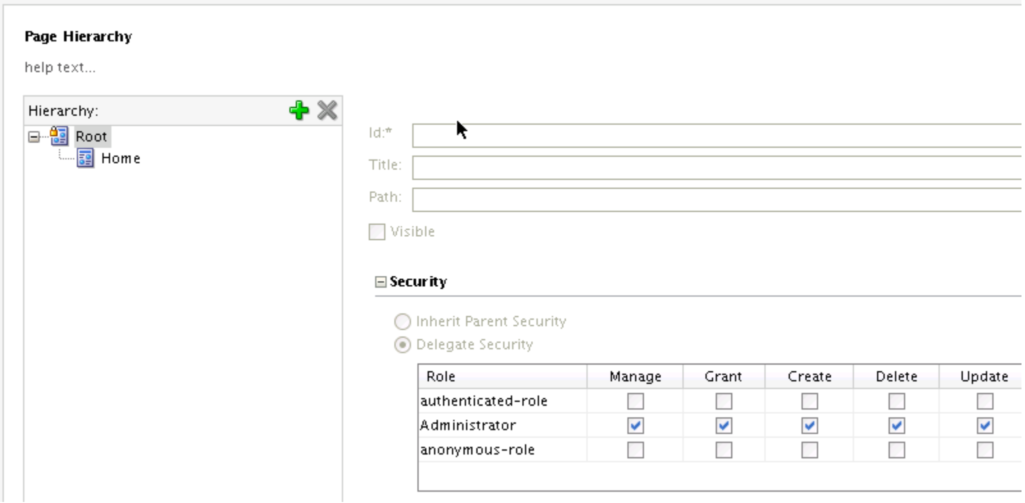
Page Attributes

Name	Value Type	Display Value
Title	Literal String	Page Hierarchy
IconURI	Literal String	/adf/webcenter/pagegroup_qualifier.png

You can add additional navigation models to, for example, provide different navigation views for specific user groups. For each navigation you can also add one or more page hierarchy nodes to provide a more granular navigation and security model. For more information about creating new navigation models, see Section 10.2, "Creating a Navigation Model." For more information about adding page hierarchies to a navigation, see Section 10.3.5, "How to Add Other Resources to a Navigation Model."

Although there is only a single page hierarchy within your application, any node within that hierarchy can be used as the root node in a navigation model. For example, you might have a page hierarchy that contains top level nodes for Human Resources, Support, Sales, Administration, and so forth. Each of these nodes can be added to the navigation model separately to create navigation only to that section of the page hierarchy.

Figure 74–9 Page Hierarchy Root Node Permissions



□ Visible

Security

○ Inherit Parent Security

● Delegate Security

Role	Manage	Grant	Create	Delete	Update
authenticated-role	□	□	□	□	□
Administrator	☑	☑	☑	☑	☑
anonymous-role	□	□	□	□	□

Figure 74–9 shows the page hierarchy root node and the associated permissions. From the root node you can start building your page hierarchy by adding or dragging pages into it. Note that the "Manage" permission appears only on the root node, and only for the administrator. This allows the administrator to delegate security and have full access to all pages within the hierarchy regardless of any security overrides downstream. In short, a user with "manage" permission on the root node is a "super admin" and has all access to all pages in the entire hierarchy.

74.6.1.2 Page-level and Page Hierarchy Security

A page hierarchy provides an alternative security mechanism to page-level security for your Portal Framework application. Although you can add pages to your application and provide security for them without making them a part of a page hierarchy, a page hierarchy provides a convenient and more manageable way to secure the content for large sites. By simply adding a hierarchy node to the hierarchy root or home node and dragging and dropping pages into it, you can very quickly provide basic security for them.

Note: Although page-level security can co-exist with page hierarchy security, you cannot apply both page-level and page hierarchy security to the same page. Note also that if you add a page to a hierarchy node, all previous page-level permissions are purged.

74.6.1.3 Inherited and Delegated Security

The page hierarchy model uses a node structure that provides cascaded, role-based security where each child node inherits its parent's security permissions. By adding pages to a node you can quickly configure security for your application pages.

To be able to perform any action at a particular node, you need to have the required permission at the node or its immediate parent that delegates (overrides) security. However in order to view a page, you need to have view access for all pages up the hierarchy right till the root page.

As well as providing basic security inherited from a node's parent, you can also apply delegated security to child nodes to limit or override the security that would otherwise have been inherited. These aspects of page hierarchy security are described in

Section 74.6.2, "Building a Page Hierarchy."

> **Note:** Inherited security is cascaded through a root node that can initially only be populated by an administrator. For other users to be able to create and delegate permissions the administrator must first delegate those permissions. In all cases, permissions are only cascaded down in the tree (that is, a user cannot change settings for a parent node). A user can also only delegate the rights they have themselves or a subset of those rights to another user.

74.6.2 Building a Page Hierarchy

This section explains how to use page hierarchy security to automatically cascade a parent page's role-based security settings to its child pages, and how to "delegate" security for individual page nodes.

This section contains the following subsections:

- Section 74.6.2.1, "Adding a Page Hierarchy to a Navigation"
- Section 74.6.2.2, "Adding Pages to a Page Hierarchy"
- Section 74.6.2.3, "Delegating Security"

74.6.2.1 Adding a Page Hierarchy to a Navigation

In addition to the default page hierarchy in the default navigation model, you can add page hierarchy nodes from the default page hierarchy to the navigations within your application as root nodes. For more information about adding a page hierarchy to a navigation, see Section 10.3.5, "How to Add Other Resources to a Navigation Model."

74.6.2.2 Adding Pages to a Page Hierarchy

This section describes how to add JSF or JSP pages to a page hierarchy.

> **Note:** To avoid issues with conflicting inherited security models, a page can only appear once in the page hierarchy.

To add a JSF or JSP page to a page hierarchy:

1. Open the page hierarchy editor in JDeveloper:
   - Right-click the `/oracle/webcenter/portalapp/pagehierarchy` folder

     or
   - Right-click any `.jspx` page under `/oracle/webcenter/portalapp` and select **Edit Page Hierarchy** from the context menu
2. Select the node to which you want to add pages, and either:
   - Click the **Add page** icon and use the browser to locate and add the page

     or
   - Drag and drop the page from the Navigator under the appropriate node
3. Continue by adding additional pages as required, or use the **Remove Page** icon to delete any unwanted pages.

74.6.2.3 Delegating Security

This section describes how to override inherited security by delegating permissions for a node and its child pages. You can also delegate security for pages using the runtime Administration page. For more information about delegating security using the runtime Administration page, see the "Managing Application Roles and Permissions" section in *Administering Oracle WebCenter Portal*.

To override inherited security with delegated security:

1. Open the page hierarchy (`pages.xml`) in JDeveloper.

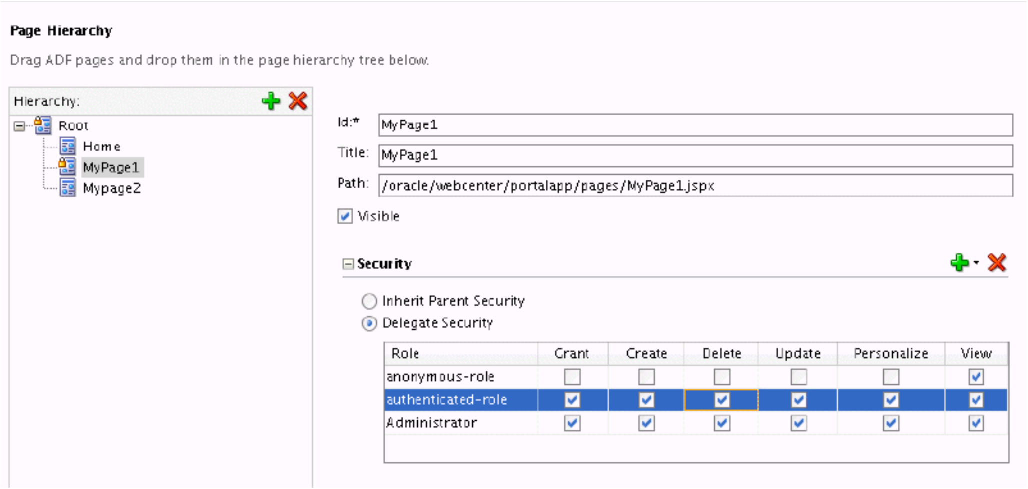
2. Select the node at which to begin overriding inherited security.

3. Check or uncheck the **Visible** checkbox to specify whether the page or resource is displayed. Check the checkbox if you want the resource to be displayed to all users at all times. Uncheck the checkbox to hide the resource from all users at all times.

4. Select **Delegate Security**.

   The Security options for delegating security displays (see Figure 74–10).

Figure 74–10 Page Hierarchy - Delegate Security



Page Hierarchy

Drag ADF pages and drop them in the page hierarchy tree below.

Id:* MyPage1

Title: MyPage1

Path: /oracle/webcenter/portalapp/pages/MyPage1.jspx

☑ Visible

Security

○ Inherit Parent Security

● Delegate Security

Role	Grant	Create	Delete	Update	Personalize	View
anonymous-role	☐	☐	☐	☐	☐	☑
authenticated-role	☑	☑	☑	☑	☑	☑
Administrator	☑	☑	☑	☑	☑	☑

5. Check or uncheck permissions for the roles for this page and its child pages.

6. To specify permissions for another available user role, click the **Add** icon (**+**) and select the desired role. A new row will be created in the table for this role. To remove the permissions for an existing role, select the corresponding row in the table and click the **Delete** (**X**) icon.

> **Note:** The role names in the Add list correspond to the application roles that have been defined in the policy store for the application. Delegating security is limited to only application roles at design time. You can, however, add user and enterprise roles at runtime using the runtime Administration page, as described in the "Managing Application Roles and Permissions" section in *Administering Oracle WebCenter Portal*.

74.7 Creating Login Pages and a Login Component

You can add login and logout links to your public welcome page or other page using a login backing bean (LoginBackingBean) so that users can explicitly log in and out while they are in the application. The bean provides methods that can be used by the user to log in and log out.

To use the bean, create a simple page and bind it to the bean to do the login and logout as described in the following steps:

1. Create a JSF page.
2. Add the LoginBackingBean to the faces-config.xml or taskflow.xml file.
3. Create a page with user name, password, login and logout links.
4. Bind the user name and password to the bean's user name and password.
5. Map the login and logout links to the doLogin and doLogout method respectively as shown in the example below:

```
           <af:subform id="pt_sf1" defaultCommand="pt_logincb"
                          rendered="#{attrs.showLogin and
!securityContext.authenticated}">
                <af:panelFormLayout id="pt_pfl1">
                  <af:panelLabelAndMessage id="pt_plam1" label="User Name"
                                           styleClass="NoLabelWrap"

labelStyle="font-size:small;color:white;">
                    <af:inputText id="pt_it1" simple="true"
                                  value="#{o_w_s_l_LoginBackingBean.userName}"
                                  columns="15"/>
                  </af:panelLabelAndMessage>
                  <af:panelLabelAndMessage id="pt_plam2" label="Password"
                                           styleClass="NoLabelWrap"

labelStyle="font-size:small;color:white;">
                    <af:inputText id="pt_it2" simple="true"
                                  value="#{o_w_s_l_LoginBackingBean.password}"
                                  columns="15" secret="true"/>
                  </af:panelLabelAndMessage>
                </af:panelFormLayout>
                <af:spacer width="3" height="3" id="pt_s2"/>
                <af:panelGroupLayout id="pt_pgl14" layout="horizontal"
                                     halign="end">
                  <af:commandLink id="pt_logincb" text="Login"
                                  action="#{o_w_s_l_LoginBackingBean.doLogin}"
                                  inlineStyle="font-size:small;color:white;"/>
                  <af:spacer id="pt_s3" width="5px"/>
                </af:panelGroupLayout>
              </af:subform>
```

The login and logout methods return values that can be mapped to actions and used in the navigation rules of faces-config.xml after a successful login and logout. The following entry in faces-config.xml is seeded by default in a Portal Framework application:

```
  <navigation-rule>
    <from-view-id>*</from-view-id>
    <navigation-case>
      <from-outcome>login_success</from-outcome>
      <to-view-id>/pages_home</to-view-id>
      <redirect/>
    </navigation-case>
    <navigation-case>
      <from-outcome>logout_success</from-outcome>
      <to-view-id>/pages_home</to-view-id>
      <redirect/>
    </navigation-case>
  </navigation-rule>
```

This defines where to go to after a successful login and logout (in this case, for both login and logout the user is returned to the home page). If you want to alter that behavior, you can edit these rules in faces-config.xml to, for example, redirect the user to a different page.

For reference information about other configuration elements you can use in the faces-config.xml file, see the "ADF Faces Configuration" section in *Fusion Developer's Guide for Oracle Application Development Framework.*

74.8 Creating a Login Portlet

Refer to *Fusion Developer's Guide for Oracle Application Development Framework* for information about creating a login portlet for your application.

74.9 Adding Portlets to a Login Page

Fusion Developer's Guide for Oracle Application Development Framework describes how you can create an ADF Faces-based login page for your application. In this section, you will add some portlets to such a login page so that the login page becomes indistinguishable from the other pages in your Framework application.

Make sure your portlet producers have been registered before proceeding. See Chapter 63, "Consuming Portlets" for details.

To add portlets to the login page, perform the following steps:

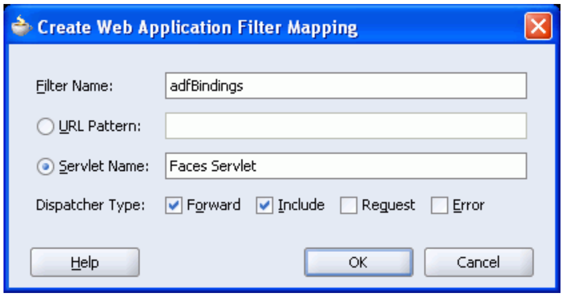
1. Drag a **PanelCustomizable** onto the h:form tag that is inside the first cust:panelCustomizable tag you added to the login page.
2. From the Component Palette, select **RichTextPortlet Producer**, then select the Rich Text portlet from the list and drag it onto the PanelCustomizable component.
3. From the Component Palette, select **ADF Faces Core** and drag an **ObjectSeparator** below the Rich Text portlet on the PanelCustomizable component.
4. From the Component Palette, select **OmniPortlet Producer**, then select the OmniPortlet from the list and drag it onto the PanelCustomizable component.
5. Save the page.

Because the login page is called from the container as part of the login process, the request must be forwarded to the ADF binding filter to establish the appropriate portlet and security context. To do this, you must configure a mapping for the ADF Binding filter in the web.xml file. To do this, perform the following steps:

1. In the Applications Navigator, expand the WEB-INF node, right-click **web.xml** and select **properties** to open the property palette.
2. Select **Filter Mappings** in the left panel and click **add** to define a new mapping for the adfBindings Filter. This displays the Create Web Application Filter Mapping dialog box.

3. Specify **adfBindings** for the filter name and click the Servlet Name option and specify **Faces Servlet** as the servlet name. Ensure that the Forward and Include dispatcher types are selected as shown in Figure 74–11.

Figure 74–11 Create Web Application Filter Mapping Dialog Box



Create Web Application Filter Mapping

Filter Name: adfBindings

○ URL Pattern:

● Servlet Name: Faces Servlet

Dispatcher Type: ☑ Forward ☑ Include □ Request □ Error

4. Click **OK**.

Follow the steps in *Fusion Developer's Guide for Oracle Application Development Framework* to complete the creation of the login page.

74.10 Creating a Self-Registration Page

You can create a self-registration page using the WebCenter Portal self-registration task flow, or build a custom self-registration page based on a provided sample that shows how to use the user and role APIs provided in `CreateUserHelper`. This type of self-registration provides a way for public users to create their own login and password for your application.

You can also invite users who may, for example, be outside your organization to self-register using the WebCenter Portal public invitation task flow. For more information about these two types of self-registration pages and their runtime behavior, see the "Enabling Self-Registration" section in *Administering Oracle WebCenter Portal*.

This section contains the following subsections:

- Section 74.10.1, "Integrating the WeBCenter Portal Self-Registration Task Flow"
- Section 74.10.2, "Building a Custom Self-Registration Page"

74.10.1 Integrating the WeBCenter Portal Self-Registration Task Flow

You can integrate the self-registration page provided in WebCenter Portal in a Framework application as described below. For information about the runtime behavior of the task flow, see the "Enabling Anyone to Self-Register" section in *Administering Oracle WebCenter Portal*.

To consume the WebCenter Portal self-registration task flow:

1. Open or create a Portal Framework application in JDeveloper.
2. Create a JSPX page.
3. From the Resource Palette, expand the task flows and drag and drop the self-registration task flow onto the page.
4. Create a mail connection and an external application with public credentials and connect the external application to the mail connection. Make this the mail default

connection. For information on how to set up a mail connection, see the "Managing Mail" chapter in *Administering Oracle WebCenter Portal*.

5. Run the page with the self-registration task flow to see the runtime self-registration page.

> **Caution:** If you are using a login attribute other than cn, such as uid or mail, then your jps-config.xml file must contain the properties user.login.attr and username.attr, and these must be set to the corresponding login attribute (mail, for example). Modify jps-config.xml file as shown in the example below:
>
> ```
> <serviceInstance provider="idstore.ldap.provider"
> name="idstore.ldap.0">
>      <!-- existing props ... ->
>      <property name="user.login.attr" value="mail"/>
>      <property name="username.attr"  value="mail"/>
>      <extendedProperty>
>       ......
>       </extendedProperty>
> </serviceInstance>
> ```
>
> After making the change, restart the WebCenter Portal server (WC_Spaces).

74.10.2 Building a Custom Self-Registration Page

The example self-registration page described below provides a simple page that accepts the user's firstname, lastname, mailid, login name and password. Use the sample files as a starting point for use within your local environment, or build your own self-registration page and logic using the user and role APIs provided in CreateUserHelper. You can use the property set of the user profile attributes provided in the sample and add more attributes to the user as required.

To create the sample self-registration page:

1. Unzip the security samples files in security-samples.zip found in the webcenter/customportal directory in the WebCenter extension bundle.
2. Copy the CreateUserBean.java and CreateUserHelper.java files into the application sources folder for your Framework application.
3. Copy the TestCreateUserPage.jspx file into the public-html folder.
4. Edit the TestCreateUserPage.jspx file to suit the local environment and local requirements.
5. Run the TestCreateUserPage.jspx page to view the self-registration page.

74.10.3 Creating a Self-Registration Invitation Page

You can create a public invitation to self-register page in your Portal Framework application using the WebCenter Portal public invitation task flow. For information about the runtime behavior of the task flow, see the "Enabling Self-Registration By Invitation-Only" section in the *Administering Oracle WebCenter Portal*.

To consume the self-registration invitation task flow:

1. Open or create a Portal Framework application in JDeveloper.
2. Create a JSPX page.

3. From the Resource Palette, expand the task flows and drag and drop the self-registration invitation task flow onto the page.
4. Grant the following `CredentialAccessPermission` in `jazn-data.xml` to `oracle.webcenter.framework.view/-`

   The `jazn-data.xml` file should like the following:

   ```
   <permission>
   <class>oracle.security.jps.service.credstore.CredentialAccessPermission</class>
   <name>context=SYSTEM,mapName=o.webcenter.security.selfreg,keyName=o.webcenter.s
   ecurity.selfreg.hmackey</name>
   <actions>read,write</actions>
   </permission>
   ```

5. Run the page with the self-registration task flow to see the runtime self-registration invitation page.

74.11 Creating a Reset Password Page

The following example provides a simple reset password page that accepts a username and new password. Use the sample files as a starting point for use within your local environment, or build your own reset password page and logic using the user and role APIs provided in `ResetPasswordHelper` to change the password.

To create the sample reset password page:

1. Unzip the security samples files in `security-samples.zip` found in the `webcenter/customportal` directory in the WebCenter extension bundle.
2. Copy the `ResetPasswordBean.java` and `ResetPasswordHelper.java` files into the application sources folder for your Portal Framework application.
3. Copy the `TestResetPasswordPage.jspx` file into the public-html folder.
4. Edit the `TestResetPasswordPage.jspx` file to suit the local environment and local requirements.
5. Run the `TestResetPasswordPage.jspx` page to view the reset password page.

74.12 Configuring Basic Authentication for Testing Portlet Personalization

Portlet personalizations are tied to particular, authenticated users. Hence, when running a portlet that has an Edit mode, the Personalize option in the portlet's dropdown menu only appears to authenticated users of the application. Anonymous or public users will not have the option to personalize the portlet. If you are a developer creating portlets and pages, then you may want to quickly test the Edit mode of your portlet without creating a complete security model for your application. To perform this sort of testing, you can easily configure some very basic authentication for your application and then remove it when you have finished testing:

> **Note:** This procedure is useful for any portlet that has an Edit mode (Omniportlet, JPS, and PDK-Java).

1. Create a user `sking` and the role `manager`. See *Fusion Developer's Guide for Oracle Application Development Framework* for information about creating users and roles.

2. Secure your application using the ADF Security Wizard. See *Fusion Developer's Guide for Oracle Application Development Framework* for the steps to be performed. On the Login page of the wizard, select **HTTP Basic Authentication (RFC 2617)**. This specifies that the application will use basic authentication.
3. Run the page in the integrated WLS and log in as a valid user and test your portlet's edit mode.

When you are done testing your portlet's Edit mode, you can quickly remove this test security by do the following:

1. In the Applications Navigator, click the project that contains a page with the portlet you want to test.
2. From the **Tools** menu, choose **ADF Security Wizard**.
3. If the Welcome page appears, then click **Next**.
4. Choose **Remove All ADF Security Settings**.
5. Click **Next** until you come to the Finish page of the wizard. Click **Finish**. The security is removed. If you want to ensure that the security has been removed, then exit your browser and rerun the application. When you access the page, you are not prompted to login and the personalize option no longer available from the portlet's dropdown menu.

74.13 Working with External Applications

The Oracle WebCenter Framework defines an external application as any application that implements its own authentication process. That is, an application that does not take part in the Portal Framework application's single sign-on process. In some cases, the identity management solution may be the same, but the authentication process can be different.

When WebCenter Framework Service interacts with an application that handles its own authentication, you can associate that service with an external application to allow for credential provisioning. Therefore, the use of an external application definition provides a means of accessing content from these independently authenticated applications.

To replicate a single sign-on experience from the end user's perspective, the external application service captures the username and password, and any other credentials for the external application, and supplies it to the WebCenter service requiring it. The WebCenter service then uses this and logs in on behalf of the end user. This username and password combination is securely stored in a credential store configured for the WebLogic domain where the application is deployed.

The user provides login credentials when prompted, and these credentials are mapped to the Portal Framework application user and stored in the credential store configured for the domain. The credential store subsequently supplies that information during authentication to the external application. Unless the external application's credentials change, the user supplies the credentials only once as the mapped information is read from the credential store for future requests.

> **Note:** When logging in to an external application, if you clear the **Remember My Login Information** checkbox, then the credentials provisioned for that user session are lost if there is a failover in a high availability (HA) environment. You are prompted to specify the credentials again if you try to access the external application content in the same user session.

The external applications that are to be used by the Portal Framework application can be specified before deployment through a wizard in Oracle JDeveloper, or post-deployment through the application server management interfaces (WebLogic Scripting Tool and Oracle Enterprise Manager). See *Administrator's Guide* for more information.

This section contains the following:

- Section 74.13.1, "Using External Applications"
- Section 74.13.2, "Supplying User Credentials"
- Section 74.13.3, "Managing External Applications"

74.13.1 Using External Applications

The WebCenter External Application Service provides a way for mapped user identities to be passed to a web application that requires its own authentication. The support for external applications and credential mapping provided by the WebCenter External Application Service can be used to set up a secured service connection and to provide a seamless automated single sign-on experience for the user.

This is described in the following sections:

- Section 74.13.1.1, "Secured Service Connections"
- Section 74.13.1.2, "Automated Single Sign-On"

74.13.1.1 Secured Service Connections

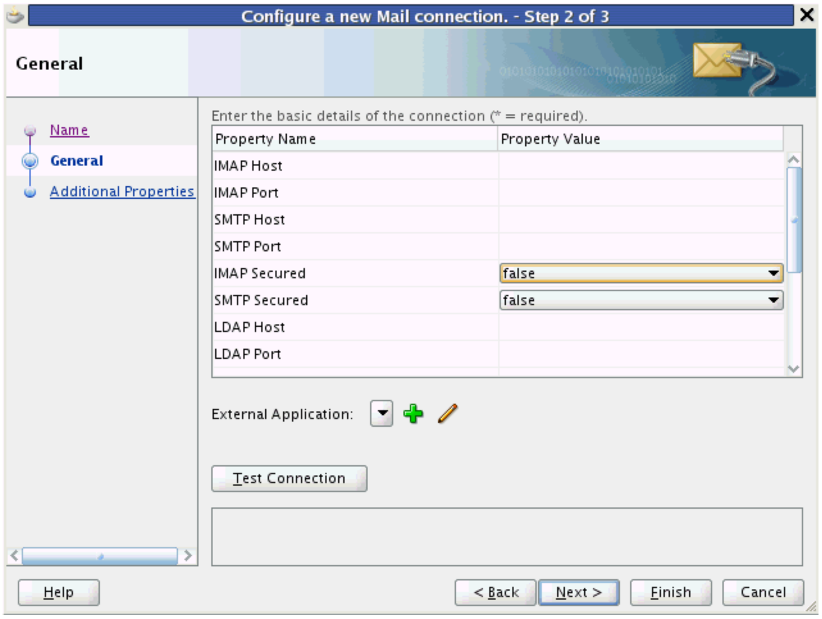
To use an external application definition with a secured service (such as a mail server or portlet producer) you associate the named external application with the connection configuration to the required service. For example, the connection to a mail server requires the user to supply a valid username and password to see their mail. Therefore, by associating an external application to the IMAP server connection definition, the user's credentials are automatically passed as part of the mail request as shown in Figure 74–12.

Note: The following WebCenter Portal components must be configured with external applications for credential mapping support to be available:

- Instant Messaging and Presence (IMP)
- Mail
- Documents
- RSS

For more information about the identity propagation mechanisms used by WebCenter Portal, see Section 74.16, "Identity Propagation Mechanisms".

Figure 74–12 Configure a New Mail Connection Page

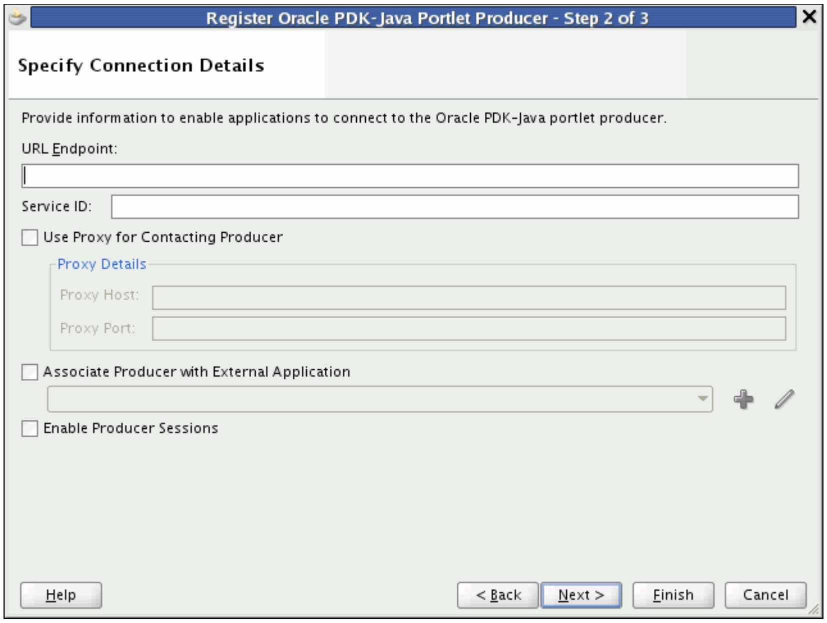


Enter the basic details of the connection (* = required).

Property Name	Property Value
IMAP Host	
IMAP Port	
SMTP Host	
SMTP Port	
IMAP Secured	false
SMTP Secured	false
LDAP Host	
LDAP Port	

When a portlet producer depends on an application that handles its own authentication, you can associate the producer with an external application so that when you register the producer it is a simple task to select the appropriate external definition that maps to the application that is exposed within the portlet, as shown in Figure 74–13.

Figure 74–13 External Application URL



Register Oracle PDK-Java Portlet Producer - Step 2 of 3

Specify Connection Details

Provide information to enable applications to connect to the Oracle PDK-Java portlet producer.

URL Endpoint:

Service ID:

□ Use Proxy for Contacting Producer

Proxy Details

Proxy Host:

Proxy Port:

□ Associate Producer with External Application

□ Enable Producer Sessions

At run time, the producer uses the information associated with the external application to authenticate the user to the application, and consequently consume its portlets. The producer code is responsible for actually performing the authentication interaction with the external application. The external application support provided with the WebCenter Portal Framework simply provides the information needed for authentication to the portlet producer. The use of external applications is supported for both Oracle PDK-Java as well as WSRP producers.

For example, a producer provides a stock portfolio portlet from a portlet-producing application that has its own authentication mechanism. In this case the developer:

- Defines the external application. This can be done through the Oracle JDeveloper wizard or through Oracle Enterprise Manager.
- Associates the external application with the portlet producer.

74.13.1.2 Automated Single Sign-On

With automated single sign-on, the user directly links to the application and is automatically authenticated to the secured web application, as their credentials are retrieved from the credential store. This provides the end user with a seamless single sign-on experience.

Note: Automated login is not supported for:

- External applications using BASIC authentication.
- External applications configured for SSO.
- External applications with a customized login form (built using ADF Faces) that does not implement the J2EE security container login method `j_security_check` for authentication.
- External sites that do not support UTF8 encoding

Rather than using a URL directly to the web application, links to the application are proxied through the external application's automated login servlet (adfextapplogin). If the user is not authenticated to the external application and they have not previously stored their credentials in the credential store, they will be challenged for their password through the credential provisioning page discussed below. If, however, the user has previously defined credentials, they will be returned from the credential store and the user will automatically be logged on to the application.

The proxy URL references the external application in question and redirects to the URL that is specified in the external application definition.

```
/adfextapplogin?extappid=<extappid>
```

For example, if you had a Framework application in which you defined an external application that represented the myoracle.com web site (external application identifier is "myoracle"), the proxy URL would look like this:

```
/adfextapplogin?extappid=myoracle
```

The link's target attribute should also be set appropriately. For example, if you use <a href=>, then set the target attribute appropriately in addition to specifying the target in the href. The target attribute specified for the servlet will determine how the Cancel button functions as described below.

```
/adfextapplogin?extappid=<extappid> [target= _self | _blank]
```

If you specify target=_blank the link opens in new window. If you specify target=_self the link opens in current window. If the target parameter is not specified the link opens in current window.

This parameter also affects how the **Cancel** button on the credential provisioning page works. If _blank is specified, the new window is closed when **Cancel** is clicked; if _self is specified (or the target parameter is not used), the user is returned to the calling page.

> **Note:** Automated login for external sites is not supported for sites that do not support UTF8 encoding.

74.13.2 Supplying User Credentials

How you allow an end user to define their credentials for an external application depends on the use of the external application. For most components, the credential provisioning screen is incorporated into the task flow that the component exposes and for these no further configuration steps are required. You can, however, add the External Application - Change Password task flow component to applications using these components thereby allowing the end user to preemptively set the appropriate user name and password for each of the external applications that is registered with your WebCenter Portal Framework application.

The External Application - Change Password task flow displays all external applications defined in the application that do not specify shared credentials (for more information about shared credentials, see Section 74.13.3, "Managing External Applications"). Note that the user must to be authenticated to view this task flow.

For the Instant Messaging and Presence service, however, you must explicitly add the External Application - Change Password task flow component to your application from the Resource Palette or Component Palette. For step-by-step instructions on how to configure security for the Instant Messaging and Presence service using the

`External Application - Change Password` task flow component, see Section 34.2.2, "Adding IMP Functionality at Design Time".

At run time, the credential provisioning screen displays login data fields composed of the data fields specified through external application registration. Users fill in the data fields with their login information for the specified external application and that login information is passed to the external application or service. Entering the credentials in the provisioning screen also results in the credentials being persisted in the credential store configured for the WebLogic domain.

By default, the login information the user entered is preserved in a credential store, which handles logins for future sessions. The user does not have to enter login information again (unless the user's credentials change). However, the end user can choose to use the information for the current session by deselecting the **Remember my Login Information** checkbox on the credential provisioning page.

74.13.3 Managing External Applications

This section provides information about registering external applications. Additionally, it describes the process of editing and deleting registration details. It contains the following subsections:

- Section 74.13.3.1, "Adding External Application Task Flows"
- Section 74.13.3.2, "Working with External Applications in Oracle JDeveloper"
- Section 74.13.3.3, "Working with External Applications in Enterprise Manager"
- Section 74.13.3.4, "Working with External Applications Using WLST"

74.13.3.1 Adding External Application Task Flows

The External Application task flow enables users to manage external application connections at runtime. This task flow provides an interface for users to update their credentials for all external applications as and when these credentials are changed at the back end. That is, users do not need to update credentials through the runtime Administration Console's Tools and Services tab if they use this task flow.

The external application task flows that you can add using Oracle JDeveloper are:

- **External Application**: This task flow enables users to register, modify, and delete connections at runtime.
- **External Application - Change Password**: This task flow enables users to change external application passwords at runtime.

For applications created using the Portal Framework application template, both these task flows are available out-of-the-box through Portal Framework application Administration page (Tools and Services tab). For details, see the "Configuring Services, Portlet Producers, and External Applications for Portal Framework Applications" section in *Administering Oracle WebCenter Portal*.

In addition, just like other task flows, you can add external application task flows to your application pages. This may be especially useful if you are not using the Portal Framework application template and the Administration pages are therefore not part of your project.

Special permissions are required to manage or view external application connections through these task flows:

- **AppConnectionManager** - Users with this role can register, modify, and delete external application connections at runtime.

- **AppConnectionViewer** - Users with this role can view external application connections at runtime. By default, any user who is logged in (that is, has the authenticated-role) is granted this role.

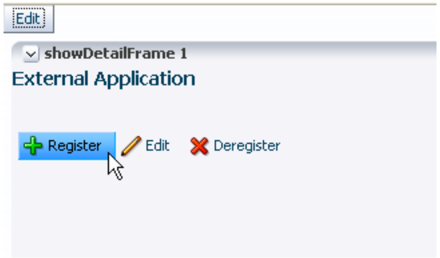
By default, users with the Administrator role can manage external applications. If you want other users to manage connection through these task flows you must grant them the AppConnectionManager role.

To add the external application task flows:

1. Create or open a JSF page in your application where you want the task flow to be added (see Section 15.2, "Creating Pages in a WebCenter Portal Framework Application").
2. In the Resource Palette, expand **My Catalogs**, **WebCenter Portal - Services Catalog**, and **Task Flows**.
3. Drag **External Application** from the Resource Palette and drop it onto the page inside of the `af:form` begin and end tags.
4. Drag **External Application - Change Password** from the Resource Palette and drop it onto the page inside of the `af:form` begin and end tags after the **External Application** task flow (`af:region - # {bindings.extapp1.regionModel}`).
5. Grant the AppConnectionManager role to one or more test users, if required:
   - Add the test user `TEST_EXTAPP`.
   - Grant the AppConnectionManager role.

   For information about how to add a user and grant this role, see the "Creating Test Users" section in *Fusion Developer's Guide for Oracle Application Development Framework*.
6. Save and run your page. Log in as an administrator or the `TEST_EXTAPP` user defined in the previous step. The screen shown in Figure 74–14 appears.

Figure 74–14 External Application Task Flow in a Browser



Note: At runtime, application administrators can grant users the AppConnectionManager and AppConnectionViewer roles through WebCenter Portal administration (see the "Adding Members to Application Roles" section in *Administering Oracle WebCenter Portal*). Alternatively, system administrators can grant AppConnectionManager and AppConnectionViewer roles through Fusion Middleware Control (see the "Granting Application Roles Using Fusion Middleware Control" section in *Administering Oracle WebCenter Portal*).

74.13.3.2 Working with External Applications in Oracle JDeveloper

This section provides information about registering external applications and editing and deleting registration details in Oracle JDeveloper. It contains the following subsections:

- Section 74.13.3.2.1, "Registering an External Application in Oracle JDeveloper"
- Section 74.13.3.2.2, "Editing External Application Registration Details in Oracle JDeveloper"
- Section 74.13.3.2.3, "Deleting External Application Registration Details in Oracle JDeveloper"

74.13.3.2.1 Registering an External Application in Oracle JDeveloper

Use the Register External Application Wizard to identify and store information about the type of data required to authenticate to an external application, such as the names of login fields.

To register an external application in Oracle JDeveloper:

1. In the Applications Navigator, right-click a WebCenter Portal Framework application or project and select **New** from the context menu.
2. In the New Gallery, select **External Applications** under the **General** node.
3. In the right pane, select **External Application**, and click **OK**.

   This displays the Register External Application Wizard.
4. On the Name page, use the **Create external application in** option to specify whether the external application can be reused in other Portal Framework applications. Select **Application Resources** to make the external application available only in the Portal Framework application in which it is registered, or select **Resource Palette** to make the external application available from the Resource Palette to any new Portal Framework applications you create in Oracle JDeveloper.

   If you choose **Resource Palette**, then the external application connection will be visible under IDE connections in the Resource Palette. If you want to use it in an application, you can right click the external application from resource palette and click **Add to Application**.
5. In the **Name** field enter a unique name to identify the application.

   This name must be unique within the WebCenter Portal Framework application, and among other connections as well. Note that you cannot edit this field afterward.
6. In the **Display Name** field enter a name for the application that end users will see in the credential provisioning screens.

   You can modify the Display Name at any time as described in Section 74.13.3.2.2, "Editing External Application Registration Details in Oracle JDeveloper". If you leave the field blank the display name is set to the value of the Name field by default.
7. Click **Next**.
8. On the General page, in the **Login URL** field enter the URL to which the HTML login page is submitted.

   View the HTML source of the application's login form to retrieve this URL.

Note: The fields on the General pane are only required if the external application being defined participates in click-through login as described in Section 74.13.2, "Supplying User Credentials".

9. In the **User Name/ID FieldName** field, enter the label that the application uses for the user name field, for example, `User Name`.
10. In the **Password FieldName** field, enter the label that the application uses for the password field, for example `Password`.
11. From the **Authentication Method** list, select the application's login method.

    Choose from the following:

    - **GET**

      Presents a page request to a server. Submits the login credentials as part of the login URL.

    - **POST**

      Submits login credentials within the body of a form.

12. Click **Next**.
13. On the Additional Fields page, enter the names and values of any additional fields that are submitted with the external application's login form:

    Click the **Add Field** button to create an input field:

    - **Field Name**

      Enter a unique name for any additional field that requires user input on the external application HTML login form.

    - **Field Value**

      Enter a default value for the corresponding field name.

    - **Display to User**

      Select to display the field on the external application login screen. If the field is not displayed (unchecked), then a default value must be specified, which will be used to login into the external application for all users. If the value is user-specific, then the field must be displayed to the user provisioning page.

    Note: The Delete Field option can be used to delete selected rows.

14. Click **Next**.
15. On the Shared Credentials page, select the **Specify Shared Credentials** check box and specify a **Username** and **Password** if you want all authenticated users to access the external application using this credential. Authenticated users will not be challenged to provide their credentials when they access the external application.
16. Click **Next**.
17. On the Public Credentials page, select the **Specify Public Credentials** check box and specify a **Username** and **Password** to be used for all unauthenticated (public) users accessing the external application. This is required when the external application content is accessed through one of the WebCenter Portal components

(such as Document Library, or Instant Messaging and Presence), and the taskflow is placed on a public page.

18. Click **Finish** to register the external application.

After registering your external application, you must configure the application to allow the end user to define the username and password. You can do this by dropping an `External Application - Change Password` task flow component into your application. This allows the end user to preemptively set the appropriate username and password for each of the external applications that is registered with your WebCenter Portal Framework application.

To configure the application to allow the end user to define the username and password, perform the following steps:

1. Open a JSF Page in your ViewController project.
2. From the Resource Palette, under My Catalogs, WebCenter Portal - Services Catalog, expand **Task Flows**.
3. Drag an `External Application - Change Password` task flow component onto your page.
4. When prompted, choose **Region** as the way to create the task flow.
5. Secure the page as this taskflow is accessible only to authenticated users

74.13.3.2.2 Editing External Application Registration Details in Oracle JDeveloper Use the Edit External Application Registration Information Wizard to revise the registration details provided for an external application.

To edit external application registration details:

1. In the Application Navigator, from the Application Resources pane under the Connections node, right-click an external application and select **Properties** from the context menu.
2. In the Edit External Application Wizard, click a link to show a page and revise its values.

   Choose from the following:

   - **Name**
   - **General**
   - **Additional Fields**
   - **Shared Credentials**
   - **Public Credentials**

   For more information, see Section 74.13.3.2.1, "Registering an External Application in Oracle JDeveloper".
3. Click **OK** to save your changes and exit the wizard, or click **Cancel** to exit the wizard without saving.

74.13.3.2.3 Deleting External Application Registration Details in Oracle JDeveloper To delete external application registration information, perform the following steps:

1. In the Application Navigator, from the Application Resources pane under the Connections node, right-click an external application and select **Delete** from the context menu.

Alternatively, you can select an external application in the Applications Navigator and from the Edit menu, select **Delete**.

2. In the External Application Delete dialog box, select **Yes**.

Oracle recommends that you remove any references to components, such as a portlet producer, with which the external application is associated. Failing to do so will likely result in runtime errors, because the components will attempt to communicate with the external application.

74.13.3.3 Working with External Applications in Enterprise Manager

Just as you can create, edit, and delete external application registration details in Oracle JDeveloper, you can also do this in Enterprise Manager. See the "Working with External Applications" chapter in the *Using Oracle WebCenter Portal*.

74.13.3.4 Working with External Applications Using WLST

As well as Oracle JDeveloper and Enterprise Manager, you can also use WebLogic Scripting Tool (WLST) commands to create, edit, and delete external application registration details. See the "Working with External Applications" chapter in the *Using Oracle WebCenter Portal*.

74.14 Registering Custom Certificates with the Keystore

Secure Sockets Layer (SSL) Communication requires the use of trusted certificates issued by a certificate authority, which vouches for the authenticity of the certificates that it issues or signs. Widely accepted certificate authorities are listed in the keystore, the `cacerts` file, available in the `<`*`JDEV_HOME`*`>\jdk\jre\lib\security` directory. If a portlet producer uses a security certificate issued by a non-widely accepted certificate authority and you try to access portlets from this producer, a security alert is displayed informing you that the security certificate was issued from a certificate authority you do not trust. This means the certificate is not available in the keystore. To avoid being prompted each time you access such portlets, you must register this certificate with the keystore.

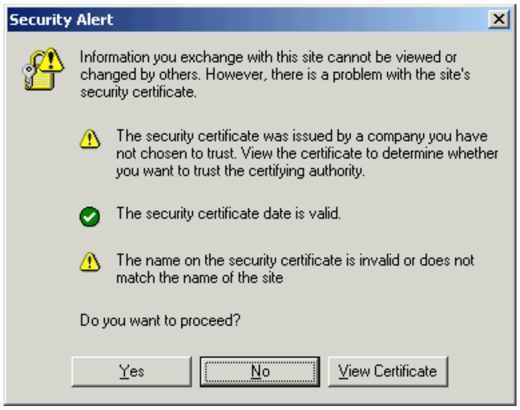
To register a certificate with the keystore, perform the following steps:

1. Navigate to *`JDEV_HOME`*`\jdk\jre\lib\security`.
2. Back up the `cacerts` file.
3. Access the producer URL in Internet Explorer to get the certificate.

> **Note:** Recent versions of FireFox do not provide a means to export certificates.

4. In the Security Alert dialog box, shown in Figure 74–15, click **View Certificate**.

Figure 74–15 Security Alert Dialog Box



Security Alert

Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.

⚠ The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.

✓ The security certificate date is valid.

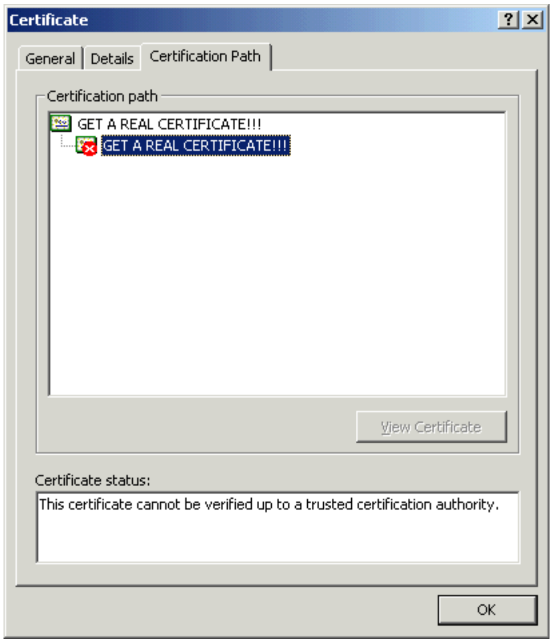
⚠ The name on the security certificate is invalid or does not match the name of the site

Do you want to proceed?

5. In the Certificate dialog box, click the **Certification Path** tab.

6. The dummy child certificate is selected by default as shown in Figure 74–16. Select the root certificate and click **View Certificate**.

Figure 74–16 Certificate Dialog Box



GET A REAL CERTIFICATE!!!

GET A REAL CERTIFICATE!!!

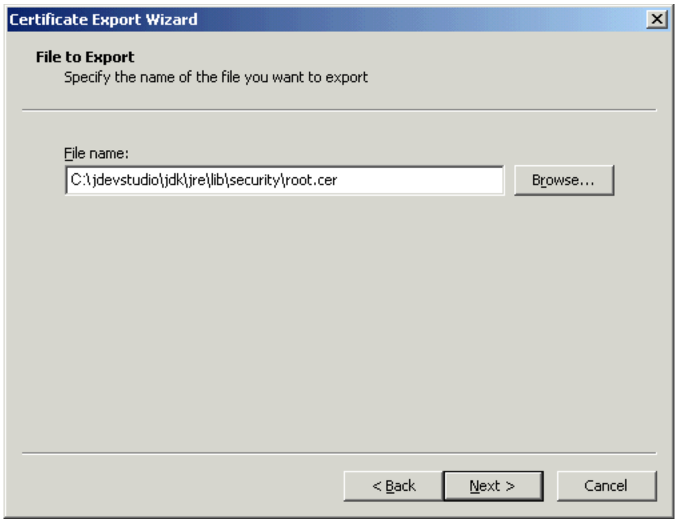
Certificate status:

This certificate cannot be verified up to a trusted certification authority.

7. Click the **Details** tab, and click **Copy to File**.

8. In the Certificate Export Wizard, accept the default settings and click **Next** until you reach the File to Export screen, shown in Figure 74–17.

Figure 74–17 File to Export Screen of the Certificate Export Wizard


Certificate Export Wizard
File to Export
Specify the name of the file you want to export
File name:
C:\jdevstudio\jdk\jre\lib\security\root.cer
Browse...
< Back
Next >
Cancel

9. In the File Name field, enter <*JDEV_HOME*>`\jdk\jre\lib\security\root.cer` and click **Next**.
10. Click **Finish**.
11. In the command prompt, set your default directory to <*JDEV_HOME*>`\jdk\jre\lib\security` and run the following command:

    ```
    keytool -import -file root.cer -keystore cacerts -storepass changeit
    ```

    By running this command, the `root.cer` certificate is imported into the keystore.
12. Enter `y` at the prompt to confirm that you trust this certificate.
13. Verify that the `cacerts` file is updated with the certificate.

74.15 Overriding Inherited Security on Portlets and Customizable Components

Individual actions on portlets and customizable components are not secured by default. Rather, the ability to customize a portlet or customizable component as a whole is inherited from the page permissions. If you want to grant more granular activities within a portlet or customizable component, then you can override the page-level security inheritance and define security directly on the required actions.

The ability of a user to perform actions on portlets and customizable components is inherited from the page security based on the value of the application-wide switch, `enableSecurity`, in the `adf-config.xml` file. If you selected the WebCenter Portal Framework application template while creating your application, then the `adf-config.xml` file is located in the <*APPLICATION_NAME*>`/.adf/META-INF` directory. The `enableSecurity` element is not available by default in `adf-config.xml`. To override or extend the page-level security inheritance for portlets and customizable components, you must add the portlets security and customizable components security sections in the `adf-config.xml` file, as shown in Example 74–1 and Example 74–2 and set the `enableSecurity` element in those sections to `true`.

Example 74–1 enableSecurity Element in the Portlet Security Section in adf-config.xml

```
<!--
```

```
==============================================================================
PORTLETS ACTIONS SECURITY
==============================================================================
-->
<adfp:adf-config-child xmlns:adfp="http://xmlns.oracle.com/adfp/portlet">
  <adfp:enableSecurity value="true"/>
    <adfp:actionsCategory>
       ..........................................
</adfp:adf-config-child>
```

Example 74–2 enableSecurity Element in the Customizable Components Security Section in adf-config.xml

```
<!--
==============================================================================
CUSTOMIZABLE COMPONENTS ACTIONS SECURITY
==============================================================================
-->
<cust:customizableComponentsSecurity
xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable/config">
  <cust:enableSecurity value="true"/>
    <cust:actionsCategory>
       ..........................................
</cust:customizableComponentsSecurity>
```

Security for actions on portlets and customizable components can be implemented at the following levels:

- Page level: You can define security for portlets and customizable components such that page-level privileges are inherited by these components. This is the default behavior.

  By default, portlets and customizable components inherit allowable actions from the defined page-level permissions such as personalize or customize. That is, a user who has *customize* privileges on the page has permission on the customize action for the components on that page. The `enableSecurity` element enables you to override the security inheritance behavior and can take either of the following values:

  - `true`: If set to `true` (the default), then the ability for a user to modify a component will first be determined from the page permissions and then adjusted according to the current set of actions defined for that type of permission. If a user has customize permission, then the actions that constitute the customize category (move, customize, and so on) are available to the user, but they will be overridden by the actions that are defined in the `adf-config.xml` file. For example, a page designer wants to allow the end user to be able to customize portlets, but not customize the page layout. By setting `enableSecurity` to `true`, the page designer enforces that users must first have customize permission on the page. Setting `customizeActionsCategory` to `false` for customizable components will prevent the customization of the page layout, yet still allowing portlet customization. (As the default for `customizeActionsCategory` is `true`, it does not need to be set explicitly for portlets.).
  - `false`: If set to `false`, then all the actions are available to users. The user's page permissions and actions configured in `adf-config.xml` are ignored.

- Actions category level: You can define security on all actions for portlets or customizable components that belong to a named category.

You can add an actionsCategory element in the adf-config.xml file to define security on multiple actions simultaneously. Depending on the actionCategory attributes that you enable, appropriate privileges are provided on the portlets or customizable components.

- Actions level: You can define security on individual actions for portlets or customizable components.

  You can use the actions element in the adf-config.xml file to enable or disable individual actions. Depending on the actions attributes that you enable, appropriate privileges are provided on the portlets or customizable components.

Notes:

- Privileges can be inherited from the parent only. Inheritance from a component in any other position in the hierarchy is not supported
- Although the security override implementation for portlets and customizable components is similar, they are independent from each other. Therefore, if you place a portlet inside a customizable component (for example, in a PanelCustomizable component), the portlet will not inherit override settings from the customizable component. Instead it will use the security override settings that are defined for portlets.
- Settings made at the actions category level or actions level are applicable for all component instances in the application. These settings cannot be made for a single instance of a portlet or customizable component.

Section 74.15.1, "Portlets Security" describes how you can implement security on portlets at the actions category level and actions level. For information on how to define security for actions on customizable components at the application level, see Section 22.5, "Applying Action-Level Restrictions on Panel Customizable and Show Detail Component Actions."

74.15.1 Portlets Security

You can define portlet security if actions on portlets are inherited from the page at the application level by setting enableSecurity to true in the portlets security section of the adf-config.xml file. A value of true implies that the user's permissions are determined from the page permission and then augmented according to the actionsCategory and actions elements specified. By defining actions categories and individual actions, you can control the exposure of the individual actions available within the given page permissions.

To implement security for actions on portlets at various levels as described earlier, you must define security settings at the following sections:

- Defining Security at the Actions Category Level
- Defining Security at the Actions Level

74.15.1.1 Defining Security at the Actions Category Level

You can add an actionsCategory element in the portlets security section in the adf-config.xml file to define the group of actions that are exposed on the portlets within the application. Depending on the actionsCategory attributes that you enable, appropriate privileges are provided on the portlets. Table 74–3 describes the different actionsCategory attributes and the portlet actions they support by default.

Table 74–3 actionsCategory Attributes and Portlets Actions Mapping

Attribute Value	Actions Supported
viewActionsCategory	Render isHelpModeAvailable isNormalModeAvailable isAboutModeAvailable isPreviewModeAvailable isDetailModeAvailable isLinkModeAvailable isPrintModeAvailable
customizeActionsCategory	showMoveAction showRemoveAction isCustomizeModeAvailable showMinimizeAction showMaximizeAction isConfigModeAvailable
personalizeActionsCategory	isPersonalizeModeAvailable

Example 74–3 shows the actionsCategory entry that you can add to the portlets security section in the adf-config.xml file. In this example, customizeActionsCategory is set to false to prevent customization. You can use Expression Language (EL) for the values of these elements.

Example 74–3 actionsCategory Element in the Portlets Security Section

```
<!--
==============================================================================
PORTLETS ACTIONS SECURITY
==============================================================================
-->
<adfp:adf-config-child xmlns:adfp="http://xmlns.oracle.com/adfp/portlet">
  <adfp:enableSecurity value="true"/>
    <adfp:actionsCategory>
      <adfp:actionCategory name="viewActionsCategory" value="true"/>
      <adfp:actionCategory name="customizeActionsCategory" value="false"/>
      <adfp:actionCategory name="personalizeActionsCategory" value="true"/>
    </adfp:actionsCategory>

    <adfp:actions>
    ..........................................
    </adfp:actions>

</adfp:adf-config-child>
```

74.15.1.2 Defining Security at the Actions Level

You can use the actions element in the portlets security section of the adf-config.xml file to enable or disable individual portlet actions. Depending on the action attributes that you enable, appropriate privileges are provided on the portlets.

Example 74–4 shows an example of an actions entry that you can add to the portlets security section in the adf-config.xml file. You can use EL for the values of these elements. In this case you prevent customization by setting isCustomizeModeAvailable to false.

Example 74–4 actions Element in the Portlets Security Section

```
<!--
==============================================================================
PORTLETS ACTIONS SECURITY
==============================================================================
-->
<adfp:adf-config-child xmlns:adfp="http://xmlns.oracle.com/adfp/portlet">
  <adfp:enableSecurity value="true"/>
    <adfp:actionsCategory>
    ........................................
    </adfp:actionsCategory>

    <adfp:actions>
      <adfp:action name="Render" value="true"/>
      <adfp:action name="showMoveAction" value="true"/>
      <adfp:action name="isCustomizeModeAvailable" value="false"/>
      <adfp:action name="isPersonalizeModeAvailable" value="true"/>
    </adfp:actions>

</adfp:adf-config-child>
```

Using EL to Prevent Customization of Portlets Outside of Business Hours

An example to show when you may need to override inherited portlet security is an application that is configured to disable portlet customization outside of standard business hours. For this, you must first create a managed bean (for example, a managed bean called appBusinessRules), containing the method shown in Example 74–5.

Example 74–5 InsideBizHours Method Defined in appBusinessRules Managed Bean

```
public boolean isInsideBizHours()
  {
    Calendar rightNow = Calendar.getInstance();
    int      currentHr = rightNow.get(rightNow.HOUR_OF_DAY);

    // Do not allow customize operation outside of standard business hours

    if ((currentHr > 9) && (currentHr < 17))
       return true;
    else
       return false;
  }
```

You can then reference this managed bean from the actionsCategory element in the portlet security section of the adf-config.xml file, as shown in Example 74–6.

Example 74–6 InsideBizHours Method Referenced in the adf-config.xml File

```
<adfp:adf-config-child xmlns:adfp="http://xmlns.oracle.com/adfp/portlet">
  <adfp:enableSecurity value="true"/>

    <adfp:actionsCategory>
      <adfp:actionCategory name="customizeActionsCategory"
      value="#{appBusinessRules.InsideBizHours?"true":"false"}"/>
    </adfp:actionsCategory>

</adfp:adf-config-child>
```

In this example, the `customizeActionsCategory` will be set to `true` only if the application is run within business hours. Outside of these hours, the portlet cannot be customized even if the user had that permission granted on the page. All other categories that are not explicitly defined, will be inherited from the page.

Using EL to Prevent Personalization and Customization of Portlets Outside the Corporate Network

In this example the managed bean checks the IP address of the request to determine whether the user has accessed the application through the corporate proxy server or from within the corporate network. In this simple example, assume that if the request has the proxy server's IP address, then it is coming from outside the corporate network. In general it is not advised to base security strictly on IP addresses, because these can be compromised. For this, you must add the method shown in Example 74–7 to the managed bean:

Example 74–7 InsideCorpNetwork Method Defined in appBusinessRules Managed Bean

```
public boolean isInsideCorpNetwork()
  {
    // Do not allow personalize and customize operations
    // for requests that go through the corporate proxy

    FacesContext       ctx = FacesContext.getCurrentInstance();
    ExternalContext    ectx = ctx.getExternalContext();
    HttpServletRequest myrequest = (HttpServletRequest) ectx.getRequest();
    String             currentIP = myrequest.getRemoteAddr();

    if (currentIP.equals(getProxyServerIP()))
        return false;
    else
        return true;
  }
```

You can then reference this managed bean from the `actionsCategory` element in the portlet security section of the `adf-config.xml` file, as shown in Example 74–8.

Example 74–8 InsideCorpNetwork Method Referenced in the adf-config.xml File

```
<adfp:adf-config-child xmlns="http://xmlns.oracle.com/adfp/portlet">
  <adfp:enableSecurity value="true"/>

    <adfp:actionsCategory>
      <adfp:actionCategory name="customizeActionsCategory"
                    value="#{appBusinessRules.InsideCorpNetwork?"true":"false"}"/>
      <adfp:actionCategory name="personalizeActionsCategory"
                    value="#{appBusinessRules.InsideCorpNetwork?"true":"false"}"/>
    </adfp:actionsCategory>
```

```
</adfp:adf-config-child>
```

In this example, the `customizeActionsCategory` and the `personalizeActionsCategory` will be set to `true` only if the IP address of the request for the application does not match that of the corporate proxy. The assumption is that the internal requests would have a valid client IP address. All other categories that are not explicitly defined, will be inherited from the page.

74.16 Identity Propagation Mechanisms

The following table lists the identity propagation mechanisms employed by WebCenter Services for propagating the end-user's identity to the various information sources from which content is being integrated into the Portal Framework application.

Whenever possible, WS-Security is the preferred means of identity propagation. Where WS-Security cannot be used due to legacy restrictions or pre-defined store-specific standards or specifications, the primary mechanism used is the credential mapping capability provided by the External Applications service to obtain the user's credentials for a remote application using a distinct security provider. For more information about WS-Security, see the *Security and Administrator's Guide for Web Services*. For more information about External Applications, see Section 74.13, "Working with External Applications".

Table 74–4 Identity Propagation Mechanisms

Service	Connection Type	Identity Propagation Mechanism
Discussions	Jive	Oracle WS-Security
Announcements	see Discussion Forum	
Documents	Content Server	Proprietary ID propagation mechanism through socket connection. Can use SSL with mutual authentication, or clear socket with IP authorization (or use External Application option)
	File System	N/A
	Portal 10g/11g	JSR-170 (External Application)
	Day Adapters	JSR-170 (External Application)
EMail	EMail Connection	External Application
	LDAP Connection	External Application
Events - Personal	Exchange Server Connection	External Application
External Application	HTTP Request from Browser	External Application
IMP	Microsoft Live Communication Server (LCS)	SOAP, Web Services calls. External Application
Portlet Producers	WSRP Producer (Secure)	Oracle WS-Security (Recommended by WSRP Specification)
	WSRP Producer (Non-Secure)	WSRP userContext in SOAP message (WSRP Specification)

Table 74–4 (Cont.) Identity Propagation Mechanisms

Service	Connection Type	Identity Propagation Mechanism
	JPDK Producer (External App)	External Application JPDK payload includes the user information and is conveyed to the producer in the ProviderUser. The information also includes a mapped username and password. (Proprietary, Legacy)
	JPDK Producer (Non-Secure)	Username in render request (Proprietary, Legacy)
Search	Secure Enterprise Search (SES)	Web Service Call
Wiki	Browser Connection	SSO mechanisms - OSSO/OAM or other WLS supported SSO mechanism
Worklist Service	BPEL Connection	Web Service call Oracle WS-Security

74.17 Securing Identity Propagation Through WSRP Producers with WS-Security

The Web Services for Remote Portlets (WSRP) specification indicates that Web Services Security (WS-Security) can be leveraged for providing secure identity propagation between the consumer and the portlet producer. However, WSRP in and of itself does not provide secure identity propagation of the end user's identity to the portlet producer. The WSRP specification explicitly defers to other security standards for secure identity propagation and does not go into the specific WS-Security profiles or options that may be employed. In the absence of a secure mechanism, WSRP defines the concept of *user categories*, which can be mapped to security roles like the ones used by the JSR168 portlets. By using a combination of WSRP and WS-Security, you can ensure end-to-end security.

This section covers the following:

- Section 74.17.1, "Identity Propagation Without WS-Security"
- Section 74.17.2, "Identity Propagation with WS-Security"
- Section 74.17.3, "Configuring Security for WSRP Portlets"

74.17.1 Identity Propagation Without WS-Security

When using WSRP without WS-Security, the `userContext` structure within the SOAP message contains user profile information and user category information. This information is not considered secure and should only be used for personalization and customization functionality. It should not be used for authorization of sensitive resources. This information is also exposed in the JSR168 APIs, `isUserInRole(`*`role`*`)` and `getUserPrincipal`. The code in Example 74–9 shows how a sample portlet's markup rendering code uses the `isUserInRole` API to decide what content to display.

Example 74–9 isUserInRole (role) API

```
private void doViewHtml(RenderRequest
request, RenderResponse response)
```

```
throws PortletException, IOException
{
// To do: markup the required content.
PrintWriter out = response.getWriter();
out.print("<p>Welcome");
out.println("</p>");
if (request.isUserInRole("moderator"))
   {out.println("<p>MODERATOR</p>" );}
else
   {out.println("<p>not moderator</p>" );}
if (request.isUserInRole("participant"))
   {out.println("<p>PARTICIPANT</p>" );}
else
   {out.println("<p>not participant</p>" );}
if (request.isUserInRole("viewer"))
   {out.println("<p>VIEWER</p>" );}
else
   {out.println("<p>not viewer</p>" );}
    }
```

74.17.2 Identity Propagation with WS-Security

When WS-Security is leveraged with WSRP, the user's identity is propagated outside of the SOAP message body in the WS-Security header. This is a user assertion, using the Username Token format, and is digitally signed to authenticate the consumer and to ensure the integrity of the assertion.

When this mechanism is used, the JSR 168 APIs `isUserInRole` and `getUserPrincipal` are established based on the security context resulting from the WS-Security authentication, rather than the information in the SOAP message's `userContext`.

Also, when an Anonymous (i.e., PUBLIC) client is mapped to a default user using the producer's Default User connection parameter, the WSRP producer must be configured with `strict-authentication` and a grant must be added to the Policy store. For more information, see the "Registering Oracle PDK-Java Producers" section in the *Administering Oracle WebCenter Portal*.

The use of WS-Security adds some complexity to the configuration and management of the Framework application and the set of producers it consumes. However, when the situation warrants its use, it becomes an important ingredient of the SOA architecture that ensures the security of the information being published by the Framework application.

The Oracle WebCenter Framework supports the following token profiles (to digitally sign the security token and message body to ensure authenticity and integrity):

- Username token without password
- Username token with password
- SAML token (uses the *sender vouches* method that the producer uses to confirm the subject assertion)

Digitally signing the security token and the SOAP message body accomplishes the following objectives:

- Consumer Authentication
- Assertion and Message Integrity
- Supported Producers
- Security Domain Implication

Consumer Authentication

When a portlet producer is generating sensitive information, for example paystub information, it is imperative that it only responds to requests to show the information from a legitimate consumer.

By using WS-Security, and having the consumer digitally sign the security token and the message body, the producer can verify the signature using the public key of the legitimate consumer. If the signature cannot be verified, then it means that the request may have come from a fraudulent consumer. By requiring the verification of the digital signature, the sensitive information will only be sent to the legitimate consumer.

Assertion and Message Integrity

In addition to verifying the identity of the consumer making the Web Service requests, digitally signing the security token and the message body also ensures that the token and the message have not been tampered with. This prevents such problems as man-in-the-middle attacks where a legitimate request might be intercepted and the user name in the security token replaced with another user name to see the paystub information coming back for the other user. By digitally signing the token, it cannot be tampered with. Any modification to the token would result in the inability to verify the signature on the producer end, and would result in a SOAP fault to be returned instead of the requested paystub information.

Supported Producers

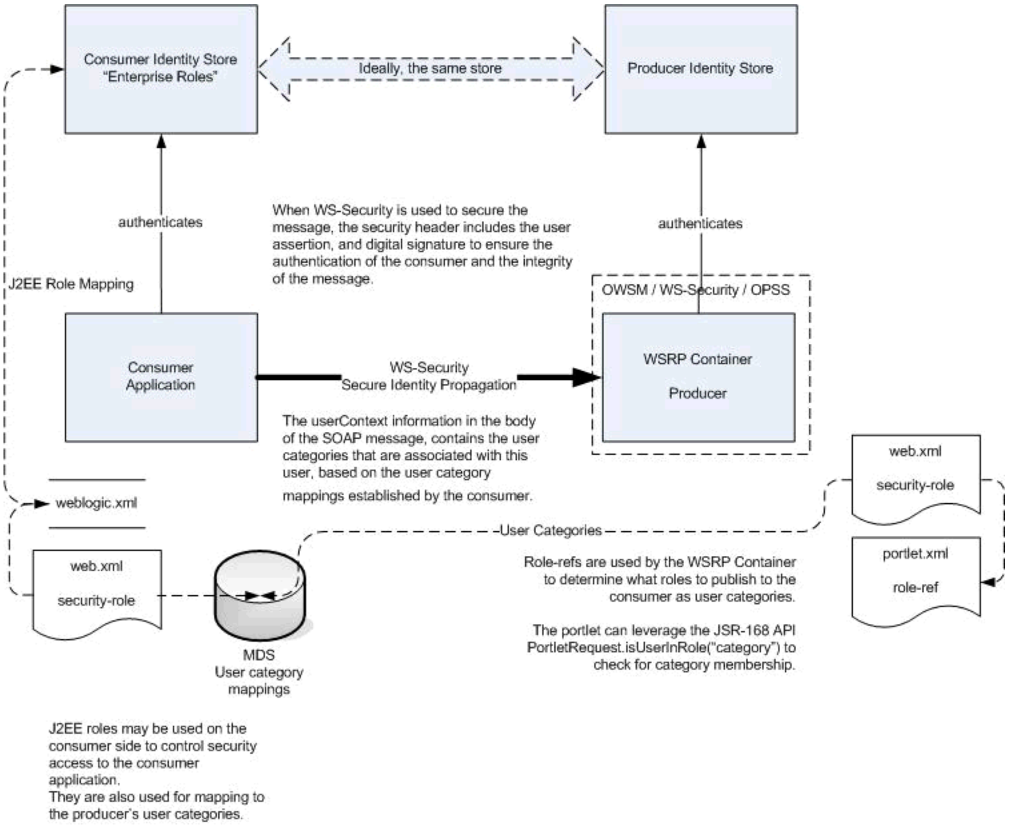
WS-Security implementation is supported by the Oracle WebCenter Suite WSRP container. Other WSRP vendors may also be able to support the WS-Security configuration of Username Token without password, with XML digital signature on the Username Token and the SOAP Message body.

Security Domain Implication

When using secure identity propagation as described in this section, the user name of the user authenticated to the consumer (the Framework application) is propagated to the producer without any remapping or providing any credentials. There is an inherent assumption that the producer understands this user name and can locate this user in its associated security domain. Consequently, it is highly desirable to ensure that the consumer and producer share the same security provider (identity store) to simplify the management of this configuration.

Figure 74–18 summarizes the overall WSRP portlet security architecture.

Figure 74–18 WSRP Portlet Security Architecture


Consumer Identity Store "Enterprise Roles"
Ideally, the same store
Producer Identity Store
authenticates
When WS-Security is used to secure the message, the security header includes the user assertion, and digital signature to ensure the authentication of the consumer and the integrity of the message.
authenticates
J2EE Role Mapping
OWSM / WS-Security / OPSS
Consumer Application
WS-Security Secure Identity Propagation
WSRP Container
Producer
The userContext information in the body of the SOAP message, contains the user categories that are associated with this user, based on the user category mappings established by the consumer.
web.xml
security-role
weblogic.xml
User Categories
web.xml
security-role
portlet.xml
role-ref
Role-refs are used by the WSRP Container to determine what roles to publish to the consumer as user categories.
The portlet can leverage the JSR-168 API PortletRequest.isUserInRole("category") to check for category membership.
MDS
User category mappings
J2EE roles may be used on the consumer side to control security access to the consumer application.
They are also used for mapping to the producer's user categories.

74.17.3 Configuring Security for WSRP Portlets

Before you configure the producer for WS-Security, you must first deploy your standards-compliant portlet producer to the Oracle WebCenter Suite WSRP Container by performing the steps described in Chapter 61, "Deploying Portlet Producers."

After you have deployed the producer, configure the producer for WS-Security by performing the following steps:

- Attaching a policy to the producer endpoint
- Creating the keystores
- Configuring the producer
- Configuring the consumer

These steps are described in the "Configuring WS-Security" chapter in *Administering Oracle WebCenter Portal*.

74.18 Implementing PDK-Java Portlet Security

This section describes the available security services for your PDK-Java portlet.

More On OTN

For more detailed information about the PDK classes referred to in this section, see the JavaDoc on OTN by clicking **Java Doc API** on the Portlet Development page available at

`http://www.oracle.com/technology/products/ias/portal/portlet_development_10g1014.html`

74.18.1 Assumptions

The following assumptions are made to perform the tasks in this section:

1. You have followed through and understood Section 60.2, "Creating a PDK-Java Portlet."
2. You built a portlet using the wizard and successfully added it to a page.

74.18.2 Introduction to PDK-Java Portlet Security Features

This section introduces the major features that are available to secure your PDK-Java portlet producers.

74.18.2.1 Identity Propagation

When a user first logs in, they must enter their password to verify their identity and obtain access.

Once the user is authenticated, the producer code has access to the authenticated user's identity from the `PortletRenderRequest` that is available from the `HttpServletRequest` object as follows:

```
PortletRenderRequest pr = (PortletRenderRequest)request.getAttribute
   (HttpCommonConstants.PORTLET_RENDER_REQUEST);
   String userName = pr.getUser().getName();
```

When using this user identity for sensitive operations, it is important to ensure that you have configured this producer to use basic message authentication to secure the integrity of the identity assertion.

74.18.2.2 Authorization

Authorization determines if a particular user may view or interact with a portlet. For information about how to restrict access to portlets, see Section 74.18.4, "Portlet Security Managers."

74.18.2.3 Message-level Security

To this point, user authentication and authorization are covered, which do not check the authenticity of messages received by a producer. To completely secure your producers, you should also secure the communication with a producer. If the communication is not secured, then it is possible for someone to imitate an application instance and fool the producer into returning sensitive information. There are three types of communication security:

- **Server Authentication** restricts access to a producer to a small number of recognized computers. This method compares the IP address or the host name of an incoming HTTP message with a list of trusted hosts. If the IP address or host name is in the list, then the message is passed to the producer. If not, it is rejected before reaching the producer.
- **Message Authentication** provides consumer authentication and message integrity. It uses a shared key known to the client (Portal Framework application) and the producer to digitally sign messages. See Section 74.18.5, "Message Authentication" for more information.
- **Message Encryption** relies on the use of the HTTPS protocol for communication between applications and producers. Messages are strongly encrypted to protect the data therein. Encryption provides a high level of security, but it incurs a performance penalty due to the additional processing required for each message.

- **User Input Escape** causes the application to escape any user input strings and treat them as text only to protect against XSS attacks, where an attacker attempts to pass in malicious scripts through user input forms. For example, if a portlet title is customizable, then an attacker might attempt to pass scripts or commands to the portlet through the title parameter entry. For this reason, the default behavior is to escape user input and thus disable any incoming scripts. See Section 74.18.6, "User Input Escape" for more information.

74.18.3 Single Sign-On

Portlets may act as windows into an application. They display summary information and provide a way to access the full functionality of the application. Portlets display some portions of the application in the Framework application and typically enable the user to perform some application tasks.

An application may need to authenticate the user accessing the application through the portlet. The following are the possible application authentication methods:

- External Application. In this case, the Oracle Portal (Oracle Portal) user is different from the application user, but the application user name and password are managed by the Oracle Portal user.
- No Application Authentication. In this case, the communication between producer and consumer is not protected at all.

74.18.3.1 External Application

An external application uses a different authentication server than the Framework application. This means that when a user is logged into the Framework application, you want to also log them into the external application without having to type in their user name or password.

Applications that manage the authentication of users can be loosely integrated with the WebCenter Framework if the administrator registers them as external applications. When a user who was previously authenticated by the WebCenter Framework accesses an external application for the first time, WebCenter Framework attempts to authenticate the user with the external application. The authentication process submits an HTTP request that combines the registration information and the user's user name and password for the application. If the user has not yet registered their user name and password for the external application, then the user is prompted for the required information before making the authentication request. When a user supplies a user name and password for an external application, WebCenter Framework maps the new user name and password to the Framework application user name and stores them. They will be used the next time the user needs authentication with the external application.

The advantages of an external application implementation are as follows:

- Provides a single sign-on experience for users. However, users still must maintain different user names and passwords. In addition, the external application user name mapping must be maintained.
- Allows integration with multiple portals independent of their user repositories and Oracle Single Sign-On.
- Avoids the requirement of having access to the application source code.

The disadvantages of an external application implementation are as follows:

- Does not share the same user repository as the portal, which requires additional maintenance of user information by the end user.

- Transmits the user name and password to the producer in plain text, unless you implement Secure Sockets Layer (SSL).

74.18.3.2 No Application Authentication

The producer trusts the Framework application instance sending the request completely. The producer can determine if the user is logged in and the portal user name, but the application has not authenticated the user.

The advantages of no application authentication are as follows:

- Provides the easiest form of integration and the fastest to implement.

The disadvantages of no application authentication are as follows:

- Provides the least security.
- Provides the weakest integration with the WebCenter Portal Framework application.

74.18.4 Portlet Security Managers

Portlet security managers may be implemented within a producer to restrict access to portlets depending on the user details. When a user views a page with a portlet instance on it, security managers determine whether the user has the appropriate privileges to see the portlet. Implementing access control methods in the producer restricts the retrieval of content from a portlet (that is, hides the portlet) from users without the appropriate privileges. Only if the specified characteristics, such as user details and preferences, pass the authorization logic will the content be retrieved for the user. If no portlet security methods are implemented in the producer, then any user name may be passed in, even fictitious, unauthenticated ones.

`AuthLevelSecurityManager` has access to the following information about authorization level:

- Strongly authenticated.

  The user has signed into the Portal Framework application, and requested the portlet in the context of that session.

- Public or not authenticated.

  The user has not logged in within the context of the current session, and does not have a persistent cookie to indicate that such a state previously existed.

To incorporate these security services into your Java portlet, you must update `provider.xml` and set the security level to strong, weak, or public. Place the following XML right before the `</portlet>` tag in `provider.xml`:

```
<securityManager class="oracle.portal.provider.v2.security.AuthLevelSecurityManager">
   <securityLevel>strong</securityLevel>
</securityManager>
```

After you make this change to `provider.xml`, refresh the producer.

More On OTN

For more information about the syntax of `provider.xml`, see the producer JavaDoc on OTN:

http://www.oracle.com/technology/products/ias/portal/html/javadoc/xml_tag_reference_v2.html

74.18.4.1 Implementing Your Own Security Manager

If your portlet requires special security arrangements which are not provided by the implementations shipped with the PDK, then you must supply your own custom `PortletSecurityManager` controller class. To do this, extend the `oracle.portal.provider.v2.security.PortletSecurityManager` class and supply implementations for the two methods specified by the interface. Then replace the class attribute of the `securityManager` controller element in the XML producer definition with you new class name and configure child elements appropriately.

74.18.5 Message Authentication

Message authentication uses a digital signature. The signature is generated using a Hashed Message Authentication Code (HMAC) algorithm and is based on user information, the shared key, and a UTC (Universal Time, Coordinated) timestamp. The producer authenticates the message using its own copy of the shared key. This technique can be used in Secure Sockets Layer (SSL) communication with a producer instead of client certificates.

For caching purposes, show request signatures are calculated each time a session is set up so producers using message authentication must always have Producer Sessions enabled. This also means that there is a trade-off between performance and security. Shorter session timeouts mean less chance of a message being re-sent illegally, but there is a performance overhead associated with reestablishing a provider session.

A single producer instance cannot support multiple shared keys because it could cause security and administration problems. For instance, if one copy of the shared key is compromised in some way, then the producer administrator has to create a key and distribute it to all of the application clients, who then must update their producer definitions. The way around this problem is to deploy different producer services, specifying a unique shared key for each service. Each producer service has its own deployment properties file so that each service is configured independently of the others. The overhead of deploying multiple producer services within the same producer adapter is relatively small.

While the signature element provides protection against interception and resending of messages, it does nothing to prevent interception and reading of message contents. Messages are still transmitted in plain text. If you are concerned about the content of messages being read by unauthorized people, then this must used in conjunction with SSL to encrypt the message.

The advantage of message authentication is as follows:

- Ensures that the message received by a producer comes from a legitimate Framework application instance.

The disadvantages of message authentication are as follows:

- Causes administration problems if a producer serves multiple portals.
- Entails performance implications if made very secure by having a short session timeout.

74.18.6 User Input Escape

By accepting user input without escaping it to text, you run the risk of an XSS attack, where an attacker attempts to pass in malicious scripts through user input forms. For example, if a portlet title is customizable, then an attacker might attempt to pass scripts or commands to the portlet through the title string. PDK-Java provides the following features to ensure that you can protect your portlets from such attacks:

- Default Container Encoding
- Escape Methods

74.18.6.1 Default Container Encoding

To prevent any script inside a portlet title from being executed, the framework default container renderer class encodes any script characters. This default behavior is controlled through a JNDI variable, `escapeStrings`. When set to `true`, the markup tags in portlet titles are rendered as visible tag characters. For example, a title customization of `<i>title</i>` will be rendered as `<i>title</i>` not *title*. This mode is secure, but, if it is not the desired behavior, then you can set `escapeStrings` to `false` for that producer.

`escapeStrings` applies to all logical producers within a producer. You can set the value of `escapeStrings` from the Fusion Middleware Control Console as you would any other JNDI variable. See Section 60.3.5.2, "Setting JNDI Variable Values" for more information.

74.18.6.2 Escape Methods

If you have code that renders customized values, then you must ensure that you escape those input values appropriately to avoid XSS attacks. This requirement applies to code for rendering pages in any mode. PDK-Java supplies two new static methods for this purpose. They are in the Java class `oracle.portal.provider.v2.url.UrlUtils`, and can be described as follows:

- `public static escapeString(`*`string_text`*`)` escapes any script characters in a given string. For example, less than < becomes `&lt`. This method is unaffected by the `escapeStrings` JNDI variable and is the secure, recommended method to use.
- `public static escapeStringByFlag(`*`string_text`*`)` escapes any script characters in a given string. This method is controlled by the `escapeStrings` JNDI variable and is therefore less secure and not the recommended method to use.

For example:

```
title = UrlUtils.escapeString(data.getPortletTitle());
```

74.19 Using WebCenter Portal Impersonation ELs and APIs

WebCenter Portal Impersonation offers a set of Expression Language expressions (ELs) and matching Java APIs that can be used to customize impersonation sessions. For more information about managing WebCenter Portal Impersonation, see the "Managing Impersonation" chapter in *Administering Oracle WebCenter Portal*. For instructions on how to initiate an impersonation session (by the impersonator) and how to allow an Impersonation session (by the impersonatee), see the "Using WebCenter Portal Impersonation" chapter in *Using Oracle WebCenter Portal*.

The following ELs are exposed:

- `#{WCSecurityContext.impersonationConfigured}` - returns whether or not impersonation has been enabled for the current domain

  This EL can be useful when determining if an error was caused by an impersonation session ending prematurely, or to provide an additional indicator that a session has ended.

- `#{WCSecurityContext.userInImpersonationSession}` - returns whether the current user is in an impersonation session or not.

You can use this EL to protect content and render it inaccessible during an impersonation session. For example, you could map the rendered attribute of an administration taskflow on a page to this EL only rendering the taskflow if the user is not viewing the taskflow in an impersonation session.

- `#{WCSecurityContext.currentImpersonator}` - returns the current impersonator, if any.

  This EL could be used to modify the page template to display the impersonator or render content accessible only to a particular impersonator.

For more information about impersonation and other ELs, refer to Appendix G, "Expression Language Expressions."

The following public APIs are exposed in `oracle.webcenter.security.common.WCSecurityUtility`:

- `isImpersonationConfigured()` - returns whether or not impersonation has been enabled for the current domain.

  This API can be useful to determine if an error was caused by an impersonation session ending prematurely, or to provide an additional indicator that a session has ended.

- `isUserInImpersonationSession()` - returns whether the current user is in an impersonation session or not.

  This API is recommended for use to protect content and render it inaccessible during an impersonation session. For example, you could map the rendered attribute of an administration taskflow on a page to this API throwing an authorization exception or returning an empty list if the user is viewing the taskflow in an impersonation session.

- `getCurrentImpersonatorId()` - returns the current impersonator, if any.

  This API could be used to modify the page template to display the impersonator (as shown in Example 74–10), or render some content accessible only to a particular impersonator.

For more information about these and other APIs, refer to *Java API Reference for Oracle WebCenter Portal*.

Example 74–10 getCurrentImpersonatorId API

```
import oracle.webcenter.security.common.WCSecurityUtility;
if (WCSecurityUtility.isUserInImpersonationSession())
{
  String impersonator = WCSecurityUtility.getCurrentImpersonatorId();
  String currentUser = ADFContext.getCurrent().getSecurityContext().getUserName();
  //Code to be executed when the user is in an impersonation session.
  ..log("User " + impersonator + " is impersonating as user " + currentUser);
}
```

74.20 Troubleshooting Security Issues

This section provides troubleshooting information to help diagnose security related issues for Portal Framework applications.

This section includes the following troubleshooting notes:

- Section 74.20.1, "Error Message Appears When Running a Page with a Content Repository Data Control Method Being Consumed"

74.20.1 Error Message Appears When Running a Page with a Content Repository Data Control Method Being Consumed

Problem

When you run a page containing a content repository data control method, the following error message appears:

```
"Unable to locate the credential for key extapp in JPS credential store."
```

Cause

Credentials need to be provisioned explicitly using the change password task flow before you access the page that uses the data control method.

Solution

Since the data control is only a model and cannot do anything at the user interface level to allow credential provisioning, you must write an error handler that takes care of the redirection in the user interface. For information about writing an error handler, see the "Customizing Error Handling" section in the *Oracle Application Development Framework Developer's Guide*.

The following is a sample error handler:

```
public class ErrorHandler
  extends DCErrorHandlerImpl
{
  public ErrorHandler(boolean b)
  {
    super(b);
  }

  public ErrorHandler()
  {
    super(true);
  }

@Override
  public void reportException(DCBindingContainer formBnd, Exception ex)
  {
   if (ex instanceof AdapterException)
    {
      AdapterException ae = (AdapterException) ex;
      if (ae.getCause() != null &&
          ae.getCause() instanceof ExtAppLoginException)
      {
        ExtAppLoginException eale = (ExtAppLoginException) ae.getCause();
        Throwable t = eale.getCause();
         if (t != null &&
            (t instanceof ExtAppCredentialNotFoundException) ||
            (t instanceof ExtAppInvalidUserCredential))
        {
          String extAppId = eale.getExternalAppId();
          showCredentialsProvisioningDialog(extAppId);
          return;
        }
      }
    }
    super.reportException(formBnd, ex);
  }
  private void showCredentialsProvisioningDialog(String extAppId)
  {
    FacesContext context = FacesContext.getCurrentInstance();
    // Create the dialog UIViewRoot
    ViewHandler viewHandler = context.getApplication().getViewHandler();
    UIViewRoot dialog =
      viewHandler.createView(context,
      "/oracle/adfinternal/extapp/view/pages/CredentialProvisionerDialog.jspx");

     HashMap<String, Object> properties = new HashMap<String, Object>();
     properties.put("width", new Integer(500));
     properties.put("height", new Integer(350));

     HashMap<String, Object> parameters = new HashMap<String, Object>();
     parameters.put("oracle.extapp.id", extAppId);

     RequestContext reqContext = RequestContext.getCurrentInstance();
     //launched from the button, need to specify this for the return listener
     //to be called.
     reqContext.launchDialog(dialog, parameters, null, true, properties);
  }
}
```

75

Building Multilanguage Portals

This chapter describes how to configure your application to display text in the correct language of a user's browser.

This chapter includes the following topics:

- Section 75.1, "Guidelines for Building Multilanguage Portals"
- Section 75.2, "Adding Support for a New Language"
- Section 75.3, "Language Support in ADF Faces Components"
- Section 75.4, "Using Resource Bundles to Support Multiple Languages"

75.1 Guidelines for Building Multilanguage Portals

When your application will be viewed by users in multiple countries, you can configure your JSF page or application to use different locales so that it displays the correct language for the language setting of a user's browser. For example, if you know your page will be viewed in Italy, you can localize your page so that when a user's browser is set to use the Italian language, text strings in the browser page appear in Italian.

Additionally, locale selection applies special formatting considerations applicable to the selected locale. For example, whether information is typically viewed from left to right or right to left, how numbers are depicted (such as monetary information), and the like.

When you develop a multi-language portal:

- Make use of the inherent multi-language support in Oracle WebCenter Portal tools and services. For more information, see Section 75.3, "Language Support in ADF Faces Components."
- Put all resources in resource bundles, provide alternate-language resource bundles, and code your application to respond to users' language selection. For more information, see Section 75.4, "Using Resource Bundles to Support Multiple Languages."
- Make sure your database character set supports all required languages.

  For more information, see the "Choosing a Character Set" chapter in *Oracle Database Globalization Support Guide*.
- Use number, date, and time formatting that supports all required locales.

  For more information, see the "Setting Up a Globalization Support Environment" chapter in *Oracle Database Globalization Support Guide*.

- Use linguistic sort parameters to get the correct sort ordering for locale.

  For example, the same characters have different sort ordering in French and Canadian-French.

  For more information, see the "Linguistic Sorting and Matching" chapter in *Oracle Database Globalization Support Guide*.

- Write web pages that correctly render left to right or right to left (for example, if Arabic languages must be supported).

For more guidelines on globalization, see the "Internationalizing and Localizing Pages" chapter in *Web User Interface Developer's Guide for Oracle Application Development Framework* or refer to *Oracle Database Globalization Support Guide*.

75.2 Adding Support for a New Language

Oracle WebCenter Portal provides run-time translations for 28 languages and 100 different locales. If you want to support a language that is not supported out-of-the-box, you need to provide string files for the new language, and add a `<language>` tag for the new language in the `supported-languages.xml` configuration file.

For information about adding support for a new language, see the "Using WebCenter Spaces Extension Samples" white paper on the *Oracle WebCenter Portal White Papers and Technical Notes* page on Oracle Technology Network.

For a WebCenter Portal Framework application, there may be a need to verify or add the entry for the new language, if not present, in the `web.xml` file of the application.

For example, to add portuguese as a language (Portugal & Brazil), ensure the following entry is present in `web.xml`:

```
...
    <locale-config>
...
      <supported-locale>pt</supported-locale>
      <supported-locale>pt-BR</supported-locale>
      <supported-locale>pt-PT</supported-locale>
...
    </locale-config>
...
```

75.3 Language Support in ADF Faces Components

Some ADF Faces components include text that is part of the component, for example the `af:table` component uses the resource string `af_table.LABEL_FETCHING` for the message text that is displayed in the browser while the table is fetching data during the initial load of data or while the table is being scrolled. Oracle JDeveloper provides translations of these text resources into 28 languages. Therefore, when using the supplied components, you do not need to perform additional steps to translate the text in the components.

75.4 Using Resource Bundles to Support Multiple Languages

For any text you add to a component, for example if you define the label of an `af:commandButton` component by setting the text attribute, you must provide a resource bundle that holds the actual text, create a version of the resource bundle for each locale, and add a `<locale-config>` element to define default and support locales in the application's faces-config.xml file. You must also add a `<resource-bundle>` element to your application's faces-config.xml file to make the resource bundles available to all the pages in your application. Once you have configured and registered a resource bundle, the Expression Language (EL) editor displays the key from the bundle, making it easier to reference the bundle in application pages.

To simplify the process of creating text resources for text you add to ADF components, JDeveloper supports automatic resource bundle synchronization for any translatable string in the visual editor. When you edit components directly in the visual editor or in the Property Inspector, text resources are automatically created in the base resource bundle.

For more information about automatic resource bundles, see the "Using Automatic Resource Bundle Integration in JDeveloper" section in *Web User Interface Developer's Guide for Oracle Application Development Framework*.

For more information about manually defining resource bundles, see the "Manually Defining Resource Bundles and Locales" section in *Web User Interface Developer's Guide for Oracle Application Development Framework*.

Part XIII

Appendixes

Part XIII contains the following appendixes:

A

WebCenter Portal Files

This appendix describes the files that are created and modified as you build up your WebCenter Portal Framework application.

This appendix includes the following topics:

- Section A.1, "About Files"
- Section A.2, "Files Overview"
- Section A.3, "Files Related to WebCenter Portal Framework Applications"
- Section A.4, "Files Related to JSR 286 Portlets"
- Section A.5, "Files Related to PDK-Java Portlets"
- Section A.6, "System Files"
- Section A.7, "Files Related to Security"
- Section A.8, "Oracle JDeveloper Files"
- Section A.9, "Files Related to WebCenter Portal Tools and Services"

For a complete reference for the Oracle Application Development Framework (Oracle ADF) metadata files that you create in your data model and user interface projects, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

A.1 About Files

When you use Oracle WebCenter Portal to build applications and components, several files are created as you perform such actions as building and consuming portlets. As you work with your application, you may find it useful to know a little bit about each of these files and how they relate to your application. You can group the files affected by Oracle WebCenter Portal into two broad categories as follows:

- Files that are common to any Oracle ADF application, such as `web.xml`. For these files, it is useful to know what specific additions and changes are made for Portal Framework applications. Those modifications are described in this appendix, but for more complete descriptions of these common files, see the *Fusion Developer's Guide for Oracle Application Development Framework*.
- Files that are unique to Portal Framework applications, such as `portlet.xml`. For these files, it is useful to know what the file is for and what it contains. These files are described completely in this appendix.

A.2 Files Overview

The files that are created and modified are closely associated with the objects that you create as part of your Portal Framework application. Hence, the easiest way to discuss these files is by object:

- Files Related to WebCenter Portal Framework Applications
- Files Related to JSR 286 Portlets
- Files Related to PDK-Java Portlets
- System Files
- Files Related to Security
- Oracle JDeveloper Files
- Files Related to WebCenter Portal Tools and Services

A.3 Files Related to WebCenter Portal Framework Applications

This section describes the files that are created for you when you create an application using WebCenter Portal's Portal Framework application template. It includes the following topics:

- Section A.3.1, "catalog-registry.xml"
- Section A.3.2, "default-catalog.xml"
- Section A.3.3, "default-navigation-model.xml"
- Section A.3.4, "index.html"
- Section A.3.5, "navigation-registry.xml"
- Section A.3.6, "pages.xml"
- Section A.3.7, "error.jspx"
- Section A.3.8, "home.jspx"
- Section A.3.9, "login.jspx"
- Section A.3.10, "navigation-renderer.jspx"
- Section A.3.11, "pageTemplate_globe.jspx"
- Section A.3.12, "pageTemplate_swooshy.jspx"

There are also image files created that are used in the application.

A.3.1 catalog-registry.xml

`catalog-registry.xml` is a catalog registry file. It is used by the runtime administration console when a user creates or edits a resource catalog. The registry defines the superset of all items that are available to be included in a catalog that you create or edit. You can create multiple catalogs for an application, but an application can only have one catalog registry file.

A.3.2 default-catalog.xml

`default-catalog.xml` is a default resource catalog. When a user edits pages at runtime using Composer, the default catalog file specifies all of the items that are available to be added to a page.

A.3.3 default-navigation-model.xml

`default-navigation-model.xml` is the navigation model file, which incorporates navigation structures in portal site. For more information, see Chapter 10, "Developing a Navigation Model."

A.3.4 index.html

`index.html` contains a redirect statement that refers to the portal navigation model, including an URL element, `pages_home`, which refers to the "home" page specified in the page hierarchy. For more information, see Section 5.11, "Changing the Default Home Page and Login/Logout Target Pages."

A.3.5 navigation-registry.xml

`navigation-registry.xml` is used by the runtime administration console when a user creates or edits a navigation model. The registry defines the superset of all items that are available to be included in a model that you create or edit. You can create multiple navigation models for an application, but an application can only have one navigation registry file. For more information, see Chapter 10, "Developing a Navigation Model."

A.3.6 pages.xml

`pages.xml`, or the *page hierarchy file*, organizes pages into a tree structure, with a parent-child relationship between pages. This hierarchical structure allows the convenient propagation or inheritance of security settings from pages to sub pages. For more information, see Section 5.3.2, "Understanding Pages, Page Templates, and the Portal Page Hierarchy."

A.3.7 error.jspx

`error.jspx` is the default error page displayed to users when Oracle WebCenter Portal encounters an error.

A.3.8 home.jspx

`home.jspx` is the default Home page, providing users access to features such as the documents, links, tags, and discussions.

A.3.9 login.jspx

`login.jspx` is the default login page that provides login/logout functionality to users. For information on customizing the login page, see Section 74.9, "Adding Portlets to a Login Page."

A.3.10 navigation-renderer.jspx

`navigation-renderer.jspx` is responsible for rendering non-page resources that appear in a navigation, such as portlets, content, and task flows. For more information, see Section 10.8, "Editing the Navigation Renderer."

A.3.11 pageTemplate_globe.jspx

`pageTemplate_globe.jspx` is one of two seeded page templates created when you select the **Configure the application with standard Portal features** option when creating an application. This template offers essentially the same functionality as pageTemplate_swooshy.jxpx but with different graphics. For more information, see Chapter 11, "Developing Page Templates."

A.3.12 pageTemplate_swooshy.jspx

pageTemplate_swooshy.jspx is one of two seeded page templates created when you select the **Configure the application with standard Portal features** option when creating an application. This template offers essentially the same functionality as pageTemplate_globe.jxpx but with different graphics. For more information, see Chapter 11, "Developing Page Templates."

A.4 Files Related to JSR 286 Portlets

This section describes the files that are created for you when you build a JSR 286 portlet. It includes the following topics:

- Section A.4.1, "portlet.xml"
- Section A.4.2, "oracle-portlet-tags.jar"
- Section A.4.3, "portlet_mode.jsp"
- Section A.4.4, "portlet_name.java"
- Section A.4.5, "portlet_nameBundle.jar"
- Section A.4.6, "web.xml"

A.4.1 portlet.xml

portlet.xml defines the characteristics of your JSR 286 portlet. For complete details on portlet.xml, you should see the Java Portlet Specification available at:

http://jcp.org/en/jsr/detail?id=168

Example A–1 provides a sample fragment from a portlet.xml file. Note that this example does not include all of the available elements of portlet.xml.

Example A–1 portlet.xml Sample

```
<portlet>
   <description xml:lang="en">JSR 286 map portlet </description>
   <portlet-name>portlet1</portlet-name>
   <display-name xml:lang="en">Map Portlet</display-name>
   <portlet-class>jsrportlet.MapPortlet</portlet-class>
   <expiration-cache>0</expiration-cache>
   <supports>
      <mime-type>text/html</mime-type>
      <portlet-mode>edit</portlet-mode>
      <portlet-mode>help</portlet-mode>
      <portlet-mode>about</portlet-mode>
   </supports>
   <supported-locale>en</supported-locale>
   <resource-bundle>jsrportlet.resource.MapPortletBundle</resource-bundle>
   <portlet-info>
      <title>Map Portlet</title>
      <short-title>Map</short-title>
      <keywords/>
   <portlet-preferences>
      <preference>
         <name>portletTitle</name>
      </preference>
   </portlet-preferences>
   <security-role-ref>
      <role-name>viewer</role-name>
   </security-role-ref>
</portlet>
```

For JSR 286 portlets, the `portlet.xml` file contains all information related to portlets and their settings. Note that not all of these settings are used in the previous sample.

- `<description>` describes the portlet, providing details to the end user.
- `<portlet-name>` uniquely identifies the portlet within the Portlet Producer application.
- `<display-name>` is used when presenting a list of available portlets to the user.
- `<portlet-class>` contains the fully qualified class name of the class implementing the `javax.portlet.Portlet` interface or extending the `GenericPortlet` abstract class that becomes the entry point for the portlet logic. The portlet container uses this class when it invokes the portlet life cycle methods. For JSF portlets created using the Oracle JSF Portlet Bridge, this is `oracle.portlet.bridge.adf.application.ADFBridgePortlet`.
- `<expiration-cache>` the default duration (in seconds) of the expiration cache.
- `<init-param>` defines initialization parameters for configuring the behavior of the portlet. The Oracle JSF Portlet Bridge uses initialization parameters to identify the entry points for the different portlet modes supported by the portlet, for example, for View mode:

  ```
  <init-param>
    <name>javax.portlet.faces.defaultViewId.view</name>
    <value>/myPage.jspx</value>
  </init-param>
  ```

  Initialization parameters for other WebCenter Portal-supported modes are:

  – Edit mode: `javax.portlet.faces.defaultViewId.edit`

  – Help mode: `javax.portlet.faces.defaultViewId.help`

  – About mode: `javax.portlet.faces.defaultViewId.about`

  – Config mode: `javax.portlet.faces.defaultViewId.config`

  – Edit Defaults mode: `javax.portlet.faces.defaultViewId.edit_defaults`

  – Preview mode: `javax.portlet.faces.defaultViewId.preview`

  – Print mode: `javax.portlet.faces.defaultViewId.print`

  Note: The value for the `defaultViewId` is relative to the application context root and must always start with a `/`. In the example provided, the value for `defaultViewId.view` is `/myPage.jspx`.

  If you add a `defaultViewId` for other portlet modes, then you must also add the mode to the `<supports>` tag. For example, `<portlet-mode>HELP</portlet-mode>`.

- `<supports>` provides information about the portlet modes supported for each content type. Portlet modes supported by WebCenter Portal include: `edit`, `help`, `about`, `config`, `edit_defaults`, `preview`, and `print`.
- `<supported-locale>` lists the locales supported by the portlet at runtime.
- `<resource-bundle>` is the fully qualified class name of the resource bundle used to provide language specific portlet information, such as title and keywords.
- `<title>` is the static title of the portlet, usually displayed in the portlet decoration on the portlet window.
- `<short-title>` is the title that is used on devices (such as mobile phones) that have limited display capabilities.
- `<keywords>` are used by applications that offer search capabilities for their users.
- `<portlet-preferences>` are preference attribute definitions.
- `<supported-processing-event>` are events that the portlet can receive.
- `<supported-publishing-event>` are events that the portlet raises.
- `<supported-public-render-parameter>` is a public render parameter supported by the portlet.
- `<container-runtime-option>` an option for defining additional runtime behavior.
- `<security-role-ref>` maps a role name to a security role in `web.xml`. The list of roles in `web.xml` that the `<security-role-ref>` maps to is published to the consumer as the producer's user categories. In `web.xml`, `<security-role>` appears similar to the following:

```
<security-role>
   <description>Viewer role</description>
   <role-name>viewer</role-name>
</security-role>
```

A.4.2 oracle-portlet-tags.jar

`oracle-portlet-tags.jar` is the Oracle implementation of the JSP tag library defined by the Java Portlet Specification.

A.4.3 portlet_mode.jsp

Depending on the implementation style of the portlet mode that you choose to create for your portlet, a corresponding JSP file is created in your *`portlet_name`*`\html` directory to define that mode. For example, if you choose to have View and Edit modes for your portlet, then you need `view.jsp` and `edit.jsp` in your *`portlet_name`*`\html` directory. For JSR 286 portlets, you can have the following JSP files for your portlet modes:

- `about.jsp`
- `config.jsp`
- `edit_defaults.jsp`
- `edit.jsp`
- `help.jsp`
- `preview.jsp`
- `print.jsp`

- `view.jsp`

For further explanation of portlet modes, see Section 57.4.2, "Portlet Modes."

A.4.4 portlet_name.java

`portlet_name.java` is the class that acts as the entry point for the portlet logic. This class must implement the `javax.portlet.Portlet` interface or extend the `GenericPortlet` abstract class. The portlet container uses this class when it invokes the portlet lifecycle methods.

A.4.5 portlet_nameBundle.jar

`portlet_nameBundle.jar` is a resource bundle class, containing translation of the strings used by the portlet.

A.4.6 web.xml

`web.xml` is a Java EE standard descriptor that contains details about Web applications. For more information about `web.xml`, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

A.5 Files Related to PDK-Java Portlets

This section describes the files that are created for you when you build a PDK-Java portlet. It includes the following topics:

- Section A.5.1, "producer_name.properties"
- Section A.5.2, "_default.properties"
- Section A.5.3, "index.jsp"
- Section A.5.4, "portlet_name_modePage.jsp"
- Section A.5.5, "provider.xml"
- Section A.5.6, "web.xml"

A.5.1 producer_name.properties

`producer_name.properties` specifies deployment details about the producer, such as the location of the `provider.xml` file. For example, this file is used if the registration URL to the PDK-Java samples is of the form:

```
http://host:port/jpdk/provider/samples
```

or:

```
http://host:port/jpdk/provider
```

where the service ID field contains `samples`. See also Section A.5.2, "_default.properties".

A.5.2 _default.properties

`_default.properties` specifies deployment details about the producer, such as the location of the `provider.xml` file. For example, this file is used if the registration URL to the PDK-Java samples is of the form:

```
http://host:port/jpdk/provider
```

Note that the producer name is not supplied here so it has to default. See also Section A.5.1, "producer_name.properties".

A.5.3 index.jsp

`index.jsp` serves as a convenient starting point when testing PDK-Java producers from Oracle JDeveloper. This file lists all of the producers available in the application.

A.5.4 portlet_name_modePage.jsp

Depending on the implementation style of the portlet mode that you choose to create for your portlet, a corresponding JSP file is created in your `\htdocs\`*`portlet_name`* directory to define that mode. For example, if you choose to have View and Edit modes for a portlet named `portletOne`, then you need `portletOneShowPage.jsp` and `PortletOneEditPage.jsp` in your `\htdocs\portletOne` directory. For PDK-Java portlets, you can have the following JSP files for your portlet modes:

- `portlet_nameAboutPage.jsp`
- `portlet_nameEditDefaultsPage.jsp`
- `portlet_nameEditPage.jsp`
- `portlet_nameHelpPage.jsp`
- `portlet_nameShowDetailsPage.jsp`
- `portlet_nameShowPage.jsp`

For further explanation of portlet modes, see Section 57.4.2, "Portlet Modes".

A.5.5 provider.xml

`provider.xml` is the definition file for your PDK-Java producer.

Example A–2 provides a sample `provider.xml` file.

Example A–2 provider.xml Sample

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<?providerDefinition version="3.1"?>
<provider class="oracle.portal.provider.v2.DefaultProviderDefinition">
 <localePersonalizationLevel>none</localePersonalizationLevel>
 <session>true</session>
 <defaultLocale>en</defaultLocale>
 <preferenceStore
  class="oracle.portal.provider.v2.preference.FilePreferenceStore">
  <name>prefStore1</name>
  <useHashing>true</useHashing>
 </preferenceStore>
 <portlet class="oracle.portal.provider.v2.DefaultPortletDefinition">
  <id>1</id>
  <name>SampleRenderer</name>
  <title>SampleRenderer example</title>
  <shortTitle>SampleRenderer</shortTitle>
  <description>Example portlet rendered using the SampleRenderer</description>
  <timeout>40</timeout>
  <timeoutMessage>SampleRenderer example timed out</timeoutMessage>
  <acceptContentType>text/html</acceptContentType>
  <showEdit>true</showEdit>
  <showEditToPublic>false</showEditToPublic>
  <showEditDefault>true</showEditDefault>
  <showPreview>true</showPreview>
  <showDetails>true</showDetails>
  <hasHelp>true</hasHelp>
  <hasAbout>true</hasAbout>
  <renderer
   class="oracle.portal.sample.v2.devguide.samplerenderer.SampleRenderer"/>
   <personalizationManager
   class="oracle.portal.provider.v2.personalize.PrefStorePersonalizationManager">
   <dataClass>oracle.portal.provider.v2.personalize.
     NameValuePersonalizationObject
   </dataClass>
   </personalizationManager>
 </portlet>
</provider>
```

A.5.6 web.xml

`web.xml` is a Java EE standard descriptor that contains details about Web applications. For more information about `web.xml`, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

A.6 System Files

This section describes the files that are created or modified when you create or modify pages, deploy your application, or consume JSR 268 portlets. It includes the following topics:

- Section A.6.1, "adf-config.xml"
- Section A.6.2, "DataBindings.cpx"
- Section A.6.3, "faces-config.xml"
- Section A.6.4, "page_name.jspx"
- Section A.6.5, "PageDef.xml"
- Section A.6.6, "trinidad-config.xml"
- Section A.6.7, "trinidad-skins.xml"
- Section A.6.8, "web.xml"
- Section A.6.9, "weblogic-application.xml"
- Section A.6.10, "mds Subdirectory"
- Section A.6.11, "wsdl Subdirectory"

A.6.1 adf-config.xml

The `adf-config.xml` file is an extensible configuration file used by any ADF component. This file is used by the various WebCenter Portal tools and services, including pages, portlets, and all the tools and services such as search, worklist, discussions, and so on, to set configuration information. This file, with `connections.xml`, contains the configuration information required for most of the tools and services to function.

For more information, see:

- Section 19.2.1.3, "Registering Add-Ons in adf-config.xml"

- Section 21.2.1.1, "Updating Your Application's adf-config.xml File" (for information on configuring sandbox creation)
- Section 22.5.1, "How to Add an enableSecurity Section to adf-config.xml"
- Section 63.3.5, "How to Edit Portlet Client Configuration"
- Section B.2.2, "adf-config.xml" (for information on Composer-specific settings)

A.6.2 DataBindings.cpx

`DataBindings.cpx` is a file common to web applications. For more information about `DataBindings.cpx`, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

A.6.3 faces-config.xml

`faces-config.xml` is a file common to JSF applications. It describes the page flow of your application. For more information about `faces-config.xml`, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

A.6.4 page_name.jspx

`page_name``.jspx` is the JSP file for your page. Whenever you add or remove components, such as portlets or data controls from the page, this file is updated.

A.6.5 PageDef.xml

`PageDef.xml` is a file common to Oracle ADF applications. This file holds information about portlet bindings. Also, portlet parameters can be tied to page variables in this file.

For more information about `PageDef.xml`, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

PageDef.xml Sample

Example A–3 provides a sample `PageDef.xml` file.

Example A–3 PageDef.xml Sample

```
<?xml version="1.0" encoding="UTF-8" ?>
<pageDefinition xmlns="http://xmlns.oracle.com/adfm/uimodel"
   version="10.1.3.37.97" id="app_SRFeedbackPageDef"
   Package="oracle.srdemo.view.pageDefs">
  <parameters/>
  <executables>
    <methodIterator id="findAllServiceRequestIter"
                    Binds="findAllServiceRequest.result"
                    DataControl="SRPublicFacade" RangeSize="4"
                    BeanClass="oracle.srdemo.model.entities.ServiceRequest"/>
    <variableIterator id="variables">
      <variable Name="portlet1_Param1" Type="java.lang.Object"
      DefaultValue="
      ${bindings.findAllServiceRequestIter.currentRow.dataProvider['svrId']}"/>
      <variable Name="portlet1_Param2" Type="java.lang.Object"/>
      <variable Name="portlet1_Param3" Type="java.lang.Object"/>
      <variable Name="portlet1_Param4" Type="java.lang.Object"/>
      <variable Name="portlet1_Param5" Type="java.lang.Object"/>
    </variableIterator>
    <methodIterator id="findServiceRequestByIdIter"
                    Binds="findServiceRequestById.result"
                    DataControl="SRPublicFacade" RangeSize="10"
                    BeanClass="oracle.srdemo.model.entities.ServiceRequest"/>
    <portlet id="portlet1"
      portletInstance="/oracle/adf/portlet/OmniProducer_1150310748178/
      applicationPortlets/Portlet100_eebc7f18_010b_1000_8001_82235f640cea"
      class="oracle.adf.model.portlet.binding.PortletBinding"
        xmlns="http://xmlns.oracle.com/portlet/bindings">
      <parameters>
        <parameter name="Param1" pageVariable="portlet1_Param1"/>
        <parameter name="Param2" pageVariable="portlet1_Param2"/>
        <parameter name="Param3" pageVariable="portlet1_Param3"/>
        <parameter name="Param4" pageVariable="portlet1_Param4"/>
        <parameter name="Param5" pageVariable="portlet1_Param5"/>
      </parameters>
    </portlet>
  </executables>
  <bindings>
    <methodAction id="findAllServiceRequest"
                  InstanceName="SRPublicFacade.dataProvider"
                  DataControl="SRPublicFacade"
                  MethodName="findAllServiceRequest" RequiresUpdateModel="true"
                  Action="999" IsViewObjectMethod="false"
                  ReturnName="SRPublicFacade.methodResults.
                     SRPublicFacade_dataProvider_findAllServiceRequest_result"/>
    <table id="findAllServiceRequest1" IterBinding="findAllServiceRequestIter">
      <AttrNames>
        <Item Value="assignedDate"/>
        <Item Value="problemDescription"/>
        <Item Value="requestDate"/>
        <Item Value="status"/>
        <Item Value="svrId"/>
        <Item Value="custComment"/>
        <Item Value="custCommentDate"/>
        <Item Value="custCommentContactBy"/>
        <Item Value="mgrNotes"/>
        <Item Value="mgrNotesDate"/>
      </AttrNames>
    </table>
    <methodAction id="findServiceRequestById"
                  InstanceName="SRPublicFacade.dataProvider"
                  DataControl="SRPublicFacade"
                  MethodName="findServiceRequestById" RequiresUpdateModel="true"
                  Action="999" IsViewObjectMethod="false"
                  ReturnName="SRPublicFacade.methodResults.
                     SRPublicFacade_dataProvider_findServiceRequestById_result">
      <NamedData NDName="svrIdParam"
         NDValue=
          "${bindings.findAllServiceRequestIter.currentRow.dataProvider['svrId']}"
         NDType="java.lang.Integer"/>
    </methodAction>
    <attributeValues id="svrId" IterBinding="findServiceRequestByIdIter">
      <AttrNames>
        <Item Value="svrId"/>
      </AttrNames>
    </attributeValues>
    <attributeValues id="custComment" IterBinding="findServiceRequestByIdIter">
      <AttrNames>
        <Item Value="custComment"/>
      </AttrNames>
    </attributeValues>
    <attributeValues id="mgrNotes" IterBinding="findServiceRequestByIdIter">
      <AttrNames>
        <Item Value="mgrNotes"/>
      </AttrNames>
    </attributeValues>
    <list id="ServiceRequestcustCommentContactBy"
          IterBinding="findServiceRequestByIdIter" ListOperMode="0"
          StaticList="true" NullValueFlag="1">
      <AttrNames>
        <Item Value="custCommentContactBy"/>
      </AttrNames>
      <ValueList>
        <Item Value=" "/>
        <Item Value="Phone"/>
        <Item Value="Email"/>
        <Item Value="SMS"/>
      </ValueList>
    </list>
    <methodAction id="mergeEntity" InstanceName="SRPublicFacade.dataProvider"
                  DataControl="SRPublicFacade" MethodName="mergeEntity"
                  RequiresUpdateModel="true" Action="999"
                  IsViewObjectMethod="false"
                  ReturnName="SRPublicFacade.methodResults.
                              SRPublicFacade_dataProvider_mergeEntity_result">
      <NamedData NDName="entity"
         NDValue=
         "${bindings.findServiceRequestByIdIter.currentRow.dataProvider}"
         NDType="java.lang.Object"/>
    </methodAction>
  </bindings>
</pageDefinition>
```

A.6.6 trinidad-config.xml

In JDeveloper, when you create a Portal Framework application, a `trinidad-config.xml` file is automatically created in the `/WEB-INF` directory. Example A–4 shows this seeded `trinidad-config.xml` file.

Example A–4 Seeded trinidad-config.xml File Created by JDeveloper

```
<?xml version="1.0" encoding="US-ASCII"?>
<trinidad-config xmlns="http://myfaces.apache.org/trinidad/config">
  <skin-family>#{preferenceBean.defaultTrinidadSkin}</skin-family>
</trinidad-config>
```

In the `trinidad-config.xml`, you can set `<skin-family>`, which determines which skin to use, and if necessary, under what conditions. The `trinidad-config.xml` file has a simple XML structure that enables you to define element properties using the JSF Expression Language (EL) or static values.

> **Note:** The default value of `<skin-family>` is `#{preferenceBean.defaultTrinidadSkin}`. If you change the default value, your application users cannot set skins at runtime.

Additionally, `trinidad-config.xml` can contain information about the level of page accessibility support, page animation, time zone, enhanced debugging output, and the URL for Oracle Help for the Web (OHW).

For more information, see the "Configuration in trinidad-config.xml" section in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

A.6.7 trinidad-skins.xml

`trinidad-skins.xml` is required for any skin that is provided as a JAR. The file is usually bundled with each skin JAR to provide a lookup between skin ID and the actual path of the skin. However, for a skin created as a portal resource in a Portal Framework application, a separate runtime API is used to lookup the location of a skin. Therefore, this file is not needed for such skins.

For more information, see the "Customizing the Appearance Using Styles and Skins" chapter in the *Web User Interface Developer's Guide for Oracle Application Development Framework*.

A.6.8 web.xml

`web.xml` is a Java EE standard descriptor that contains details about web applications. For more information about `web.xml`, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

A.6.9 weblogic-application.xml

`weblogic-application.xml` is a deployment descriptor (a server configuration file that defines the application configuration) for Oracle WebLogic Server deployment.

A.6.10 mds Subdirectory

When you deploy a WebCenter Portal Framework application, an `mds` subdirectory is created in your project directory. This subdirectory contains other subdirectories and metadata files, such as portlet customizations and personalizations.

A.6.11 wsdl Subdirectory

When you consume JSR 286 portlets in an application, a `wsdl` subdirectory is created in the `WEB-INF` directory. The files in this subdirectory are internal files created for portlets from a WSRP producer.

A.7 Files Related to Security

This section describes the files that are created or modified when you implement or modify security. It includes the following topics:

- Section A.7.1, "connections.xml"
- Section A.7.2, "jazn-data.xml"
- Section A.7.3, "cwallet.sso"
- Section A.7.4, "jps-config.xml"
- Section A.7.5, "adf-config.xml"

A.7.1 connections.xml

`connections.xml` contains portlet producer connection information. Example A–5 shows a sample `connections.xml` file.

Example A–5 connections.xml

```
<?xml version = '1.0' encoding = 'UTF-8'?>
<References xmlns="http://xmlns.oracle.com/adf/jndi">
  <Reference name="SampleWSRPProducer-wsconn"

className="oracle.adf.model.connection.webservice.impl.WebServiceConnectionImpl"
xmlns="">
     <Factory
className="oracle.adf.model.connection.webservice.api.WebServiceConnectionFactory"
/>
     <RefAddresses>
        <XmlRefAddr addrType="WebServiceConnection">
           <Contents>
              <wsconnection
description="http://portlet.example.com:9999/portletapp/portlets/wsrp2?WSDL">
                 <model name="{urn:oasis:names:tc:wsrp:v2:wsdl}WSRP_v2_Service"
xmlns="http://oracle.com/ws/model">
                    <service name="{urn:oasis:names:tc:wsrp:v2:wsdl}WSRP_v2_
Service">
                       <port name="WSRP_v2_PortletManagement_Service"
binding="{urn:oasis:names:tc:wsrp:v2:bind}WSRP_v2_PortletManagement_Binding_SOAP">
                          <soap
addressUrl="http://host:port/portletapp/portlets/WSRP_v2_PortletManagement_
Service"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                          <operation name="setPortletProperties">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:setPortletProperties"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="setPortletProperties"/>
                             <output name="setPortletPropertiesResponse"/>
                          </operation>
                          <operation name="getPortletProperties">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:getPortletProperties"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="getPortletProperties"/>
                             <output name="getPortletPropertiesResponse"/>
                          </operation>
                          <operation name="importPortlets">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:importPortlet"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="importPortletsResponse"/>
                             <input name="importPortlets"/>
                          </operation>
                          <operation name="destroyPortlets">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:destroyPortlets"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="destroyPortlets"/>
                             <output name="destroyPortletsResponse"/>
                          </operation>
                          <operation name="exportPortlets">
                             <soap
```

```
soapAction="urn:oasis:names:tc:wsrp:v2:exportPortlet"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="exportPortletsResponse"/>
                             <input name="exportPortlets"/>
                          </operation>
                          <operation name="releaseExport">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:importPortlet"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="releaseExport"/>
                             <output name="releaseExportResponse"/>
                          </operation>
                          <operation name="getPortletsLifetime">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:getPortletsLifetime"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="getPortletsLifetimeResponse"/>
                             <input name="getPortletsLifetime"/>
                          </operation>
                          <operation name="copyPortlets">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:copyPortlets"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="copyPortletsResponse"/>
                             <input name="copyPortlets"/>
                          </operation>
                          <operation name="getPortletPropertyDescription">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:getPortletPropertyDescription"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="getPortletPropertyDescription"/>
                             <output
name="getPortletPropertyDescriptionResponse"/>
                          </operation>
                          <operation name="clonePortlet">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:clonePortlet"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="clonePortletResponse"/>
                             <input name="clonePortlet"/>
                          </operation>
                          <operation name="setPortletsLifetime">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:setPortletsLifetime"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="setPortletsLifetimeResponse"/>
                             <input name="setPortletsLifetime"/>
                          </operation>
                          <operation name="getPortletDescription">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:getPortletDescription"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="getPortletDescription"/>
                             <output name="getPortletDescriptionResponse"/>
                          </operation>
                          <operation name="setExportLifetime">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:setExportLifetime"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="setExportLifetime"/>
                             <output name="setExportLifetimeResponse"/>
                          </operation>
                       </port>
                       <port name="WSRP_v2_Markup_Service"
binding="{urn:oasis:names:tc:wsrp:v2:bind}WSRP_v2_Markup_Binding_SOAP">
                          <soap
addressUrl="http://host:port/portletapp/portlets/WSRP_v2_Markup_Service"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                          <operation name="initCookie">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:initCookie"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="initCookieResponse"/>
                             <input name="initCookie"/>
                          </operation>
                          <operation name="getMarkup">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:getMarkup"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="getMarkupResponse"/>
                             <input name="getMarkup"/>
                          </operation>
                          <operation name="releaseSessions">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:releaseSessions"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="releaseSessions"/>
                             <output name="releaseSessionsResponse"/>
                          </operation>
                          <operation name="performBlockingInteraction">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:performBlockingInteraction"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="performBlockingInteraction"/>
                             <output name="performBlockingInteractionResponse"/>
                          </operation>
                          <operation name="getResource">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:getResource"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="getResourceResponse"/>
                             <input name="getResource"/>
                          </operation>
                          <operation name="handleEvents">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:handleEvents"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="handleEvents"/>
                             <output name="handleEventsResponse"/>
                          </operation>
                       </port>
                       <port name="WSRP_v2_Registration_Service"
binding="{urn:oasis:names:tc:wsrp:v2:bind}WSRP_v2_Registration_Binding_SOAP">
                          <soap
addressUrl="http://host:port/portletapp/portlets/WSRP_v2_Registration_Service"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                          <operation name="register">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:register"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
```

```
                             <input name="register"/>
                             <output name="registerResponse"/>
                          </operation>
                          <operation name="getRegistrationLifetime">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:getRegistrationLifetime"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <output name="getRegistrationLifetimeResponse"/>
                             <input name="getRegistrationLifetime"/>
                          </operation>
                          <operation name="setRegistrationLifetime">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:setRegistrationLifetime"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="setRegistrationLifetime"/>
                             <output name="setRegistrationLifetimeResponse"/>
                          </operation>
                          <operation name="deregister">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:deregister"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="deregister"/>
                             <output name="deregisterResponse"/>
                          </operation>
                          <operation name="modifyRegistration">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:modifyRegistration"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="modifyRegistration"/>
                             <output name="modifyRegistrationResponse"/>
                          </operation>
                       </port>
                       <port name="WSRP_v2_ServiceDescription_Service"
binding="{urn:oasis:names:tc:wsrp:v2:bind}WSRP_v2_ServiceDescription_Binding_
SOAP">
                          <soap
addressUrl="http://host:port/portletapp/portlets/WSRP_v2_ServiceDescription_
Service"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                          <operation name="getServiceDescription">
                             <soap
soapAction="urn:oasis:names:tc:wsrp:v2:getServiceDescription"
xmlns="http://schemas.xmlsoap.org/wsdl/soap/"/>
                             <input name="getServiceDescription"/>
                             <output name="getServiceDescriptionResponse"/>
                          </operation>
                       </port>
                    </service>
                 </model>
              </wsconnection>
           </Contents>
        </XmlRefAddr>
     </RefAddresses>
  </Reference>
  <Reference name="SampleWSRPProducer"
className="oracle.portlet.client.connection.wsrp.WSRPProducerConnection" xmlns="">
     <Factory
className="oracle.portlet.client.connection.wsrp.WSRPProducerConnectionFactory"/>
     <RefAddresses>
        <XmlRefAddr addrType="connectionDesc">
```

```
           <Contents>
              <wsrpproducerconnection wsConnection="SampleWSRPProducer-wsconn"
timeout="30"/>
           </Contents>
        </XmlRefAddr>
     </RefAddresses>
  </Reference>
</References>
```

A.7.2 jazn-data.xml

When you implement or modify security for your application, the jazn-data.xml file is created or modified.

The jazn-data.xml file is used to facilitate the deployment of realm and policy information for your application. In your development environment (JDeveloper), jazn-data.xml is located in your application's *workspacedir*/src/META-INF directory. After deployment, the contents of this file are merged in domain-level identity or policy stores. This file contains the policies that are created at design time, and is merged at deployment by JpsApplicationLifecycleListener into the system-jazn-data.xml file (or appropriately configured policy store) for the deployment target.

When you migrate security information with JpsApplicationLifecycleListener, the jazn-data.xml file can be used as the source file for the migration. For more information about migrating roles, see the *Fusion Developer's Guide for Oracle Application Development Framework*.

jazn-data.xml Sample

Example A–6 provides a sample jazn-data.xml file.

Example A–6 jazn-data.xml Sample

```
<?xml version = '1.0' encoding = 'UTF-8'?>
<jazn-data>
   <jazn-realm>
      <realm>
         <name>jazn.com</name>
      </realm>
   </jazn-realm>
   <policy-store>
      <applications>
         <application>
            <name>mdsapp-secure</name>
            <app-roles>
               <app-role>
                  <name>unauthenticated-role</name>
                  <display-name>anonymous-role</display-name>

<class>oracle.security.jps.service.policystore.ApplicationRole</class>
               </app-role>
               <app-role>
                  <name>authenticated-role</name>
                  <display-name>authenticated-users</display-name>

<class>oracle.security.jps.service.policystore.ApplicationRole</class>
               </app-role>
               <app-role>
```

```
                  <name>approle</name>
                  <display-name>approle</display-name>
                  <description>approle</description>
                  <guid/>

<class>oracle.security.jps.service.policystore.ApplicationRole</class>
                  <members>
                     <member>

<class>oracle.security.jps.internal.core.principals.JpsXmlUserImpl</class>
                        <name>orcladmin</name>
                     </member>
                  </members>

               </app-role>
            </app-roles>
            <jazn-policy>
<grant>
<grantee>
 <principals>
     <principal>
<class>oracle.security.jps.internal.core.principals.JpsAuthenticatedRoleImpl</clas
s>
<name>authenticated-role</name>
     </principal>
 </principals>
</grantee>
<permissions>
 <permission>
<class>oracle.adf.share.security.authorization.RegionPermission</class>
<name>project1.pageDefs.securePageDef</name>
<actions>view</actions>
 </permission>
</permissions>
</grant>
<grant>
<grantee>
 <principals>
     <principal>
<class>oracle.security.jps.internal.core.principals.JpsAnonymousRoleImpl</class>
         <name>anonymous-role</name>
     </principal>
 </principals>
</grantee>
<permissions>
 <permission>
<class>oracle.adf.share.security.authorization.RegionPermission</class>
<name>project1.pageDefs.publicPageDef</name>
<actions>view</actions>
 </permission>
</permissions>
</grant>
            </jazn-policy>
         </application>
      </applications>
   </policy-store>
   <jazn-policy/>
</jazn-data>
```

A.7.3 cwallet.sso

`cwallet.sso` contains external application credentials, if any, and the connection's secure data such as database password. The `cwallet.sso` file is located in the *`workspaceroot`*`/src/META-INF` directory.

A.7.4 jps-config.xml

`jps-config.xml` is located at *`workspaceroot`*`/src/META-INF`. The `jps-config.xml` file packaged with the application is used only at design time. At runtime, the configurations stored in the domain-level `jps-config.xml` file become functional.

`jps-config.xml` configures OPSS services. For more information on the element hierarchy and attributes of `jps-config.xml`, see the "OPSS Configuration File Reference" appendix in the *Securing Applications with Oracle Platform Security Services*.

The recommendation for migration is to create a new `jps-config.xml` file with the source and destination contexts defined as required by the migration commands. For details on migrating identities, see the "Migrating Identities Manually" section in the *Securing Applications with Oracle Platform Security Services*.

The policy store is migrated in the following ways: entire policy store, application-specific policies, and global polices. For details, see the "Migrating Policies Manually" section in the *Securing Applications with Oracle Platform Security Services*.

The credential store is migrated in the following ways: entire credential store or application-specific credentials. When migrating application-specific credentials, ensure that `srcFolder` and `targetFolder` are the same. `srcFolder` and `targetFolder` can be determined from `appUID` in the `adf-config.xml` file, see Example A–7. For details, see the "Migrating Credentials Manually" section in the *Securing Applications with Oracle Platform Security Services*.

Example A–7 appUID in the adf-config.xml file

```
<adf:adf-properties-child xmlns="http://xmlns.oracle.com/adf/config/properties">
  <adf-property name="adfAppUID" value="Application1-1167"/>
</adf:adf-properties-child>
```

A.7.5 adf-config.xml

Security configurations are stored in `adf-config.xml`. This file is located at *`workspaceroot`*`/.adf/META-INF/adf-config.xml`. See Example A–8.

Example A–8 adf-config.xml

```
<adf-security-child xmlns="http://xmlns.oracle.com/adf/security/config">
        <JaasSecurityContext
initialContextFactoryClass="oracle.adf.share.security.JAASInitialContextFactory"
jaasProviderClass="oracle.adf.share.security.providers.jps.JpsSecurityContext"
             authorizationEnforce="true"
             authenticationRequire="true"/>
    <CredentialStoreContext
credentialStoreClass="oracle.adf.share.security.providers.jps.CSFCredentialStore"
             credentialStoreLocation="../../src/META-INF/jps-config.xml"/>
</adf-security-child>
```

Note: The `credentialStoreLocation` entry in the sample is valid at design time only.

A.8 Oracle JDeveloper Files

This section describes the `pagetemplate-metadata.xml` file that is created or modified when you create a page template.

`pagetemplate-metadata.xml` keeps track of all the page templates you create in a project.

A.9 Files Related to WebCenter Portal Tools and Services

This section includes sample `connections.xml` and `adf-config.xml` files for some WebCenter Portal tools and services.

Example A–9 shows the minimum required configuration for the SES web service connection.

Example A–9 SES Web Service Sample Connection

```
<Reference name="GenericSesConnection"
className="oracle.adf.mbean.share.connection.webcenter.search.SesConnectionReferen
ceable"
credentialStoreKey="GenericSesConnection" xmlns="">
      <Factory
className="oracle.adf.mbean.share.connection.webcenter.search.SesConnectionFactory
"/>
      <RefAddresses>
         <XmlRefAddr addrType="SesConfig">
            <Contents>
               <SesConfig>
                  <AttributeMap>
                     <Attribute name="date">
                        <SesAttribute>LastModifiedDate</SesAttribute>
                     </Attribute>
                     <Attribute name="person">
                        <SesAttribute>Author</SesAttribute>
                     </Attribute>
                  </AttributeMap>
                  <SoapUrl>http://host:port/search/query/OracleSearch</SoapUrl>
               </SesConfig>
            </Contents>
         </XmlRefAddr>
         <StringRefAddr addrType="appUsername">
            <Contents>wpadmin</Contents>
         </StringRefAddr>
         <SecureRefAddr addrType="appPassword"/>
      </RefAddresses>
   </Reference>
```

Example A–10 shows a sample `adf-config.xml` for documents.

Example A–10 ADF Configuration for the Documents

```
<doclibC:adf-doclib-config xmlns="http://xmlns.oracle.com/webcenter/doclib/config"
   primaryConnectionName="Oracle_Content_Server">
    <doclibC:spaces-repository
    spacesRoot="/repositoryPath"
    adminUserName="sysadmin"
    applicationName="application_name" />
</doclibC:adf-doclib-config>
```

Example A–11 shows a sample `adf-config.xml` for worklists.

Example A–11 ADF Configuration for Worklists

```
<worklistC:adf-worklist-config>
  <worklistC:ConnectionName>WebCenter-Worklist</worklistC:ConnectionName>
</worklistC:adf-worklist-config>
```

B

Composer Component Properties and Files

This appendix provides reference information about Composer-specific tags, configuration files, and style properties.

This appendix includes the following topics:

- Section B.1, "Composer Component Properties"
- Section B.2, "Composer-Specific Files and Configurations"
- Section B.3, "Composer Default Add-Ons and Property Panels"
- Section B.4, "Composer Components Style-Specific Properties"
- Section B.5, "Customizable Components (HTML) Properties"

The information provided in this chapter is useful while performing the tasks described in Chapter 18, "Enabling Runtime Editing of Pages Using Composer" and Chapter 19, "Extending Runtime Editing Capabilities Using Composer."

B.1 Composer Component Properties

This section is a quick reference for all Composer tags. When you add Composer components to a page, default values are assigned to certain attributes. You can change these default values and define values for the remaining attributes in JDeveloper.

For information about adding these components to the page, see Section 18.1, "Designing Editable Pages Using Composer Components."

> **Note:** The Property Inspector in JDeveloper displays certain extended metadata attributes under the Customization Attributes category. You can use these properties to provide additional metadata information. For more information, see the "Extended Metadata Properties" section in *Fusion Developer's Guide for Oracle Application Development Framework*.

This section contains the following subsections:

- Section B.1.1, "Page Customizable Component"
- Section B.1.2, "Change Mode Link and Change Mode Button"
- Section B.1.3, "Layout Customizable Component"
- Section B.1.4, "Panel Customizable Component"
- Section B.1.5, "Show Detail Frame Component"

- Section B.1.6, "Custom Action"
- Section B.1.7, "Show Property"

B.1.1 Page Customizable Component

Use the `Page Customizable` component to enable page editing at runtime. The `Page Customizable` component denotes the customizable part of a page and shows the Composer toolbar in Edit mode at runtime. When you enclose components within a `Page Customizable` component, Composer is enabled in the application page at runtime, allowing the user to customize and edit the components.

In large applications, where you want to enable runtime page editing on multiple pages, you can include the `Page Customizable` component in the page template, somewhere in the top of the hierarchy. This way, all pages created using the template are editable at runtime.

Geometry Management

View mode: The `Page Customizable` component can be stretched by a parent layout component that stretches its children, for example, a `Panel Stretch Layout` or `Panel Splitter` component. If the `Page Customizable` component is stretched, it in turn stretches its child component to fill the space available to it. However, if the `Page Customizable` component is not stretched, its size is determined by the child component.

Edit mode: The `Page Customizable` component stretches its child component to fill the space available to it.

Attributes

Table B–1 describes the attributes of a `Page Customizable` component.

Table B–1 Attributes of a Page Customizable Component

Attribute	Type	Supports EL	Description
Common Attributes			
id	String	No	The identifier for the component. The identifier must follow a subset of the syntax allowed in HTML: ▪ Must not be a zero-length String. ▪ First character must be an ASCII letter (A-Za-z) or an underscore ('_'). ▪ Subsequent characters must be an ASCII letter or digit (A-Za-z0-9), an underscore ('_'), or a dash ('-').
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`.

Table B–1 (Cont.) Attributes of a Page Customizable Component

Attribute	Type	Supports EL	Description
Appearance Attributes			
sourceViewPosition	String	Yes	The position of the Structure view pane displaying components in a tree structure. Valid values are `bottom`, `end`, `start`, and `top`. Default value is `top`. For more information, see the section, Section 16.6, "Editing Capabilities in Structure View in Page Edit Mode.".
sourceViewSize	String	Yes	The height or width of the Structure view pane in pixels. Use this to specify height if the `sourceViewPosition` is set to `top` or `bottom`, or to specify width if `sourceViewPosition` is set to `start` or `end`. Since the default for `sourceViewPosition` is `top`, the pane has a default height of `200` pixels. Alternatively, the resize handler on the edge of the Structure view pane enables users to alter the height or width of the pane at runtime.
editModeView			Specifies the default view in which to open a page in Composer. Valid options are `design` and `source`. Default value is `design`. If you select `source`, the page is opened in Structure view in Composer. If you select `design`, the page is opened in Design view in Composer if the value `design` or `all` is specified for the `designViews` attribute. Else the page is displayed in Add Content view.
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`.
toolbarLayout	String	Yes	The elements to be displayed on the Composer toolbar. This attribute can take a space-separated list of elements. The built in strings the component recognizes are `message`, `stretch`, `statusindicator`, `newline`, `menu`, `addonpanels`, `stretch`, `help`, and `button`. For more information about using this attribute, see Section 19.10, "Customizing the Composer Toolbar."
Style Attributes			
styleClass	String	Yes	The CSS style class to use for this component. The style class can be defined in your JSPX page or in a skinning CSS file, for example.

Table B–1 (Cont.) Attributes of a Page Customizable Component

Attribute	Type	Supports EL	Description
inlineStyle	String	Yes	The CSS styles to use for this component. This is intended for basic style changes. The `inlineStyle` is a set of CSS styles that are applied to the root DOM element of the component. If the `inlineStyle`'s CSS properties do not affect the DOM element you want affected, then you must create a skin and use the skinning keys which are meant to target particular DOM elements, like `::label` or `::icon-style`.
Advanced Attributes			
binding	`oracle.adf.view.page.editor.component.PageCustomizable`	Supports only EL	An EL reference that stores the component instance on a bean. This can be used to give programmatic access to a component from a backing bean, or to move creation of the component to a backing bean.
sourceViewNodeActions	String	Yes	The name of the JPSX file to be called if you want to display custom actions against task flows in the component navigator in Composer Structure view. The `sourceViewNodeAction` attribute can take the name of a JSPX file or an EL value that evaluates to a JSPX file name. For information about using this attribute, see Section 20.4, "Enabling Custom Actions that Display on Task Flows in the Component Navigator."
allowLabel	Boolean	Yes	Specifies whether label creation must be enabled in the Customization Manager. When `allowLabel` is set to `true`, a Save and Label button is displayed on the Composer toolbar. For more information, see Section 16.5.15, "Manage Application Customizations." This attribute is relevant only if you have configured sandbox support in your application.
catalog	String	Yes	The resource catalog to be used as the default one for the application page. Provide the catalog definition file name. For more information about using multiple resource catalogs, see Chapter 14, "Developing Resource Catalogs."
allowEL	Boolean	No	Specifies whether or not EL can be run in application pages. Default is true. This setting overrides the `<pe:allow-el>` setting in adf-config.xml. For more information, see Section 19.4.2, "How to Protect Expression Language."
protectEL	Boolean	No	Specifies whether or not EL in form elements is read-only. Default is false. This setting overrides the `<pe:protect-el>` setting in adf-config.xml. For more information, see Section 19.4.2, "How to Protect Expression Language."

Table B–1 (Cont.) Attributes of a Page Customizable Component

Attribute	Type	Supports EL	Description
designViews	String	Yes	Specifies the views available to a user in Composer. By default, Add Content and Structure views are available for backward compatibility. This attribute can take a space-separated list of elements. Available options are `design`, `add-content`, `source`, `select`, `preview`, and `all`. If you set the value as `all`, all the views are rendered except Add Content, and Design view becomes the default view in Composer. If the `designViews` attribute is set, it overrides the `designViews` setting in `adf-config.xml`. However, if this attribute is set to an EL that returns null, then the `adf-config.xml` setting for `designViews` is used. For more information see Section 19.11, "Enabling Direct Select in Design or Add Content View."
Customization Attributes			
customizationAllowed	Boolean		Specifies whether customizations are allowed on this component. Available values are `true` and `false`. The default value is `true`.
customizationAllowedBy	String		Specifies the roles for which customization is enabled.

Supported Facets

The `Page Customizable` component provides an `editor` facet, which is prepopulated with a `Page Editor Panel` component. To ensure that Composer works properly, the `editor` facet must contain the `Page Editor Panel` component.

B.1.2 Change Mode Link and Change Mode Button

Use the `Change Mode Button` or `Change Mode Link` to enable switching to Edit mode of the page at runtime.

The `Change Mode Link` and `Change Mode Button` components share a common set of attributes. Table B–2 describes the attributes of a `Change Mode Link` or `Change Mode Button` component.

Table B–2 Attributes of a Change Mode Link or Change Mode Button Component

Attribute	Type	Supports EL?	Description
Common Attributes			
id	String	Yes	The identifier for the component. The identifier must follow a subset of the syntax allowed in HTML: - Must not be a zero-length String. - First character must be an ASCII letter (A-Za-z) or an underscore ('_ '). - Subsequent characters must be an ASCII letter or digit (A-Za-z0-9), an underscore ('_'), or a dash ('-').
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`. In a secured application, to enable the Edit link or button only for selected users based on specific criteria, you can specify an EL value for the `rendered` attribute. **Note**: In a secured application, it is recommended that you check all users' privileges and enable the Edit link or button only for privileged users. Unauthenticated users who stumble into page Edit mode can change component properties.
Behavior Attribute			
immediate	Boolean	Yes	Specifies whether data validation - client-side or server-side - must be skipped when events are generated by this component. When `immediate` is `true`, the command's action and ActionListeners, including the default ActionListener provided by the JavaServer Faces implementation, is executed during the Apply Request Values phase of the request processing lifecycle, rather than waiting until the Invoke Application phase. Because validation runs during Process Validators (after Apply Request Values, but before Invoke Application), setting `immediate` to `true` skips validation.
Advanced Attributes			

Table B–2 (Cont.) Attributes of a Change Mode Link or Change Mode Button Component

Attribute	Type	Supports EL?	Description

binding	`oracle.adf.view.page.editor.component.ChangeModeLink`
	or
	`oracle.adf.view.page.editor.component.ChangeModeButton`
		Supports only EL	An EL reference that stores the component instance in a bean. This can be used to give programmatic access to a component from a backing bean, or to move creation of the component to a backing bean.

Customization Attributes			
customizationAllowed	Boolean		Specifies whether customizations are allowed on this component. Available values are `true` and `false`. The default value is `true`.
customizationAllowedBy	String		Specifies the roles for which customization is enabled.
Other Attribute			
customizationId			This attribute has been deprecated. Use the `id` attribute.

If you do not want to use the `Change Mode Link` or `Change Mode Button` component, you can add your own button or link component and use the `ChangeModeLink` or `ChangeModeButton` API to enable the switching of the page mode.

Disabling Runtime Editing in Your Application Pages

To disable runtime editing of pages, you can revoke Edit privileges for users, or delete the `Change Mode Link` or `Change Mode Button` component from the page so that the user cannot navigate to the Edit mode of the page.

B.1.3 Layout Customizable Component

The `Layout Customizable` component applies a predefined layout to its child components. It is a container component that enables end users to lay out its child components in several predefined ways. Use the `Layout Customizable` component only to enable changing of the page layout at runtime. If you just want container components in which to layout components, but do not want to enable runtime layout changes, then it is recommended that you use ADF Faces layout components like `Panel Stretch Layout` and `Panel Group Layout`. It is recommended that you have just one `Layout Customizable` on the page.

A `Layout Customizable` component contains a direct child `Panel Customizable` component and two facets with `Panel Customizable` components by default to enable users to add content inside them at runtime. However, you can add any components inside the `Layout Customizable` component and its facets. The content in the three `Panel Customizable` components can be placed in different ways using predefined layouts. For more information, see the section, "Predefined Layout Types".

Table B–3 describes the attributes of a `Layout Customizable` component.

Table B–3 Attributes of the Layout Customizable Component

Attribute	Type	Supports EL?	Description
Common Attributes			
id	String	No	The identifier for the component. The identifier must follow a subset of the syntax allowed in HTML: ■ Must not be a zero-length String. ■ First character must be an ASCII letter (A-Za-z) or an underscore ('_'). ■ Subsequent characters must be an ASCII letter or digit (A-Za-z0-9), an underscore ('_'), or a dash ('-').
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`. The rendering of a component can also be defined at runtime using the Show Component and Hide Component options.
type	String	Yes	Specifies the layout to be used for the page. You can choose from a list of eight predefined layouts. For more information, see Table B–5. Default value is `threeColumn`. You can define customization restrictions on a `Layout Customizable` component. Specifically, if you place a restriction on the `type` attribute, then layout changer options are shown as disabled and users cannot use them to change the page layout. For more information, see Chapter 22, "Modifying Default Security Behavior of Composer Components."
Appearance Attributes			
text	String	Yes	Specifies the text to be displayed for the Change Layout menu. Use the `text` attribute to provide a descriptive label for the `Layout Customizable` component so that the component is clearly visible on the page at runtime. For example: `text="Change Layout"`

Table B–3 (Cont.) Attributes of the Layout Customizable Component

Attribute	Type	Supports EL?	Description
accessKey	Char	Yes	A character used to gain quick access to this button. For accessibility reasons, this functionality is not supported in screen reader mode. If the same access key appears in multiple input fields in the same page of output, the rendering user agent cycles among the elements accessed by the similar keys. Note that user agents are inconsistent about dealing with two links having same access key, and so the cycling behavior is dependent on what the user agent provides. This attribute is sometimes referred to as the "mnemonic". The character specified by this attribute must exist in the `Text` attribute of this button instance. If it does not, the user receives no visual indication of the existence of the `accessKey`. The easiest, and most convenient way to specify both the text and the mnemonic together is to use `textAndAccessKey`. Note that the `accessKey` is triggered by browser-specific and platform-specific modifier keys. It even has browser-specific meaning. For example, Internet Explorer 7.0 sets focus when you press Alt+<accessKey>. Firefox 2.0 on some operating systems sets focus when you press Alt+Shift+<accessKey>. Firefox 2.0 on other operating systems set focus when you press Control+<accessKey>. Refer to your browser's documentation for how it treats accessKey.
showIcon	Boolean	Yes	Specifies whether the default **Change Layout** icon is visible or not. The default value is `true`.
showLayoutChanger	Boolean	Yes	Specifies whether the **Change Layout** icon or text must be displayed. The default value is `true`. When set to `true`, the runtime behavior of the layout changer is as follows: ■ Displayed in View mode. ■ Displayed in Edit mode. It is always displayed in Edit mode, even if the value of the `showLayoutChanger` attribute is `false`. ■ If there is a security or MDS restriction on the Layout Customizable component, then the layout changer is not displayed in View or Edit modes.

Table B–3 (Cont.) Attributes of the Layout Customizable Component

Attribute	Type	Supports EL?	Description
showTypes	String	Yes	Specifies the names of predefined layouts that must be displayed in the layout changer. Use this attribute to control the layout options displayed to users. You can provide a space-separated list of layout types. By default, all eight layouts are displayed when a user clicks the Change Layout icon or link.
shortDesc	String	Yes	The short description of the component. This text is commonly used by user agents to display tooltip help text, in which case the behavior for the tooltip is controlled by the user agent, for example, Firefox 2 truncates long tooltips. For form components, the `shortDesc` is displayed in a note window.
Style Attributes			
styleClass	String	Yes	A CSS style class to use for this component. The style class can be defined in your JSPX page or in a skinning CSS file, for example.
inlineStyle	String	Yes	The CSS styles to use for this component. This is intended for basic style changes. The `inlineStyle` is a set of CSS styles that are applied to the root DOM element of the component. If the `inlineStyle`'s CSS properties do not affect the DOM element you want affected, then you must create a skin and use the skinning keys which are meant to target particular DOM elements, like `::label` or `::icon-style`.
Advanced Attribute			
binding	`oracle.adf.view.page.editor.component.LayoutCustomizable`	Supports only EL	An EL reference that stores the component instance in a bean. This can be used to give programmatic access to a component from a backing bean, or to move creation of the component to a backing bean. For example: `binding="#{yourManagedBean.Binding}"`
Customization Attributes			
customizationAllowed	Boolean		Specifies whether customizations are allowed on this component. Available values are `true` and `false`. The default value is `true`.
customizationAllowedBy	String		Specifies the roles for which customization is enabled.
Other Attribute			
customizationId			This attribute has been deprecated. Use the `id` attribute.

Supported Facets

Table B–4 describes the facets provided for a `Layout Customizable` component.

Table B–4 Facets of the Layout Customizable Component

Name	Description
contentA	Prepopulated with a `Panel Customizable` component. This `Panel Customizable` contains content to be rendered in area A in the layouts shown in Table B–5.
contentB	Prepopulated with a `Panel Customizable` component. This `Panel Customizable` contains content to be rendered in area B in the layouts shown in Table B–5.
facetSeparator	Content to be rendered once between each facet.
separator	Content to be rendered once between each of the other children.

Predefined Layout Types

When you add a `Layout Customizable` component to the page, three child `Panel Cutsomizable` components are added by default; one direct child and two `Panel Customizables` in the two facets. However, you can replace the child `Panel Customizable` components with any container components of your choice. When you select the layout type, the components in these `Panel Customizables` are arranged according to the layout type chosen.

Table B–5 describes the eight layouts that you can apply to your page or an area of the page at design time. To easily describe how components are laid out, let us assume the following:

- The child `Panel Customizable` of `contentA` facet is called **A**.
- The child `Panel Customizable` of `contentB` facet is called **B**.
- The primary `Panel Customizable`, which is a direct child of the `Layout Customizable`, is called **C**.

Table B–5 Values for Type Attribute of Layout Customizable

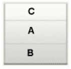
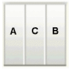
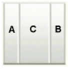
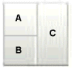
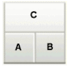
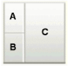
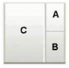
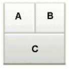
Layout Type	Image Showing Content Arrangement
oneColumn	 **Note**: In a `oneColumn` layout, `A` and `B` are rendered only if they contain child components.
threeColumn	
threeColumnNarrow	
twoColumn	
twoColumnBottom	
twoColumnNarrowLeft	

Table B–5 (Cont.) Values for Type Attribute of Layout Customizable

Layout Type	Image Showing Content Arrangement
twoColumnNarrowRight	
twoColumnTop	

B.1.4 Panel Customizable Component

Use the `Panel Customizable` component as a container for page content that can be customized at runtime. You can add content inside a `Panel Customizable` component at runtime using the resource catalog. When you add child `Show Detail Frame` components inside a `Panel Customizable`, the `Show Detail Frame` components provide runtime customization options for arranging or deleting components on the page.

Use this component only to perform runtime customizations on child components. If you just want a container to arrange components, then it is recommended that you use an ADF Faces container like `Panel Group Layout`.

Geometry Management

The `Panel Customizable` component can be stretched by a parent layout component that stretches its children, for example, a `Panel Stretch Layout` or `Panel Splitter` component. By setting the `layout` attribute on the `Panel Customizable` component to `stretch`, the child component can be stretched to the size of the `Panel Customizable`.

Table B–6 describes the attributes of a `Panel Customizable` component.

Table B–6 Attributes of a Panel Customizable Component

Attribute	Type	Supports EL?	Description
Common Attributes			
id	String	No	The identifier for the component. The identifier must follow a subset of the syntax allowed in HTML: ■ Must not be a zero-length String. ■ First character must be an ASCII letter (A-Za-z) or an underscore ('_'). ■ Subsequent characters must be an ASCII letter or digit (A-Za-z0-9), an underscore ('_'), or a dash ('-').
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`. The rendering of a component can also be defined at runtime using the Show Component and Hide Component options.
halign	String	Yes	Specifies the horizontal alignment of child components. You can set horizontal alignment on child components only if the `Panel Customizable` component has a horizontal or vertical layout. Available values are `center`, `end`, `left`, `right`, and `start`. Default value is `start`.
valign	String	Yes	Specifies the vertical alignment of child components. You can set vertical alignment on child components only if the `Panel Customizable` component has a horizontal layout. Available values are `baseline`, `bottom`, `middle`, and `top`. Default value is `top`.
shortDesc	String	Yes	Specifies a short description of the component. This text is commonly used by user agents to display tooltip help text, in which case the behavior for the tooltip is controlled by the user agent.

Table B–6 (Cont.) Attributes of a Panel Customizable Component

Attribute	Type	Supports EL?	Description
layout	String	Yes	Specifies how the children of the `Panel Customizable` must be laid out. Available options are `horizontal`, `vertical`, `scroll`, `stretch`, and `auto`. The default value is `vertical`. Depending on the value of the `layout` attribute, child components are laid out as follows: ■ If you select `vertical`, then the child components are displayed one below the other and can be moved either up or down within the layout. ■ If you select `horizontal`, then the child components are displayed adjacent to each other and can be moved either to the left or right within the layout. ■ If you select `scroll`, then the child components are displayed one below the other, with scroll bars displayed if content overflows. ■ If you select `stretch`, then the first child component is stretched to fill up available space in the `Panel Customizable` component. Subsequent child components are ignored. However, they are not removed from the page. The Add icons for adding new `Panel Customizable` components adjacent to the selected one are not enabled if you set `layout` to `stretch`. ■ If you select `auto`, the child component is stretched only if the `Panel Customizable` is stretched by its parent. If not, the content scrolls.
Style Attributes			
styleClass	String	Yes	A CSS style class to use for this component. The style class can be defined in your JSPX page or in a skinning CSS file, for example.

Table B–6 (Cont.) Attributes of a Panel Customizable Component

Attribute	Type	Supports EL?	Description
inlineStyle	String	Yes	The CSS styles to use for this component. This is intended for basic style changes. The `inlineStyle` is a set of CSS styles that are applied to the root DOM element of the component. If the `inlineStyle` attribute's CSS properties do not affect the DOM element you want affected, then you must create a skin and use the skinning keys which are meant to target particular DOM elements, like `::label` or `::icon-style`.
Behavior Attributes			
allowAction	Boolean	Yes	Determines whether this component allows addition of child components, dragging and dropping `Show Detail Frame` components inside and from it, and rearranging child components at runtime. It also determines whether the Add Box icons (that enable users to add Box components adjacent to the component) must be rendered on the component. Available values are `none` and `all`. The default value is `all`. **Note:** You can also set this attribute while defining component security in the application's `adf-config.xml` file. For more information, see Section 22.5, "Applying Action-Level Restrictions on Panel Customizable and Show Detail Component Actions."
showEditAction	Boolean	Yes	While in Edit mode, in Add Content or Design view, renders an **Edit** icon on the `Panel Customizable` header that enables users to edit component properties at runtime. Available values are `true` and `false`. Default value is `true`. This is relevant only in a Composer-enabled page, that is, if the `Panel Customizable` component is nested within a `Page Customizable` component.

Table B–6 (Cont.) Attributes of a Panel Customizable Component

Attribute	Type	Supports EL?	Description
showSplitAction	Boolean	Yes	In Add Content or Design view of a page in Edit mode, renders the Add Box icons on the `Panel Customizable` header that enable users to add Box components above, below, to the left, or right of the selected component. Available values are `true` and `false`. Default value is `true`. This is relevant only in a Composer-enabled page, that is, if the `Panel Customizable` component is nested within a `Page Customizable` component. However, the Add Box icons are not displayed on the root `Panel Customizable` component. Although the default value for this attribute is `true`, the Add Box icons are not displayed on a component that is stretched.
showTabAction	Boolean	Yes	In Add Content or Design view of a page in Edit mode, renders the Add a Tab Set or a Tab icon on the `Panel Customizable` header that enables users to add a tabs to the page. Available values are `true` and `false`. Default value is `false`. This is relevant only in a Composer-enabled page, that is, if the `Panel Customizable` component is nested within a `Page Customizable` component.
Advanced Attributes			
binding	`oracle.adf.view.page.editor.component.PanelCustomizable`	Supports only EL	An EL reference that stores the component instance in a bean. This can be used to give programmatic access to a component from a backing bean, or to move creation of the component to a backing bean.
Customization Attributes			
customizationAllowed	Boolean		Specifies whether customizations are allowed on this component. Available values are `true` and `false`. The default value is `true`.
customizationAllowedBy	String		Specifies the roles for which customization is enabled.
Other Attribute			
customizationId			This attribute has been deprecated. Use the `id` attribute.

Supported Facets

The `Panel Customizable` component supports a `separator` facet, which can be used to render content once between each of its child components.

Disabling the Edit Option on a Panel Customizable Component

When you switch to the Edit mode of a page at runtime, in Add Content or Design view you will notice an **Edit** icon on all `Panel Customizable` or `Box` components that can be edited. To disable property editing on a specific `Panel Customizable` or `Box` component in Add Content or Design view, you must set the `showEditAction` attribute on the component to `false` at design time. The **Edit** icon is no longer displayed on the component in Add Content or Design view. However, users can still select such a component in Structure view and edit its properties.

B.1.5 Show Detail Frame Component

Add `Show Detail Frame` components inside `Panel Customizable` components to enable runtime customizations like move, minimize, restore, and delete of child components. You can move `Show Detail Frame` components only if they are added inside a `Panel Customizable` component.

Geometry Management

A `Show Detail Frame` component can be stretched by a parent layout component that stretches its children, for example, `Panel Customizable`.

A `Show Detail Frame` component stretches its child component to fill the height and width available to it. It is recommended that you add only one child component inside a `Show Detail Frame` component. However, if you have more than one child component, the first child component is stretched to the height and width of the `Show Detail Frame`'s content area and subsequent child components are ignored.

The resize handler at the lower right corner of a `Show Detail Frame` enables you to resize the component vertically. From then on, the `Show Detail Frame` cannot be stretched by its parent.

Table B–7 describes the attributes of a `Show Detail Frame` component.

Table B–7 Attributes of a Show Detail Frame Component

Attribute	Type	Supports EL?	Description
Common Attributes			
id	String	No	The identifier for the component. The identifier must follow a subset of the syntax allowed in HTML: - Must not be a zero-length String. - First character must be an ASCII letter (A-Za-z) or an underscore ('_'). - Subsequent characters must be an ASCII letter or digit (A-Za-z0-9), an underscore ('_'), or a dash ('-').
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`. The rendering of a component can also be defined at runtime using the Show Component and Hide Component options.
text	String	Yes	A title for the `Show Detail Frame` component. You can change the style of this text using the `headerStyle` attribute.

icon	String	Yes	If you decide to add an icon on the header of the `Show Detail Frame` component, then this specifies the URI for the image to be used.
			For example:
			`icon="http://source-pc/images/accessability.gif"`
			Note: An image that is stored at the document root does not require a full path. For example:
			`icon="detail.gif"`

Appearance Attributes			
text	String	Yes	A title for the `Show Detail Frame` component. You can change the style of this text using the `headerStyle` attribute.

Table B–7 (Cont.) Attributes of a Show Detail Frame Component

Attribute	Type	Supports EL?	Description
shortDesc	String	Yes	The short description of the component. This text is commonly used by user agents to display tooltip help text, in which case the behavior for the tooltip is controlled by the user agent, for example, Firefox 2 truncates long tooltips. For form components, the `shortDesc` is displayed in a note window.

icon	String	Yes	If you decide to add an icon on the header of the `Show Detail Frame` component, then this specifies the URI for the image to be used.
			For example:
			`icon="http://source-pc/images/accessability.gif"`
			Note: An image that is stored at the document root does not require a full path. For example:
			`icon="detail.gif"`

background	String	Yes	Working with the skin CSS, provides a means of applying a different look and feel for this `Show Detail Frame` instance. Available values are `light`, `medium`, `dark`, and `coreDefault`. The default value is `medium`. The `coreDefault` value is similar to `medium`, but additionally it provides a rounded border for the container and renders a shadow. The background in this case would be similar to that of an ADF Faces `panelBox` component.
displayHeader	Boolean	Yes	Indicates whether the header of the `Show Detail Frame` is displayed. The default value is `true`. If you choose to set `displayHeader` to `false` and if you have exposed some actions on the component, then a toolbar is displayed when you move the mouse over the component area. The toolbar contains a drop down icon, which displays a menu of available options. This toolbar displays only in Edit mode, if there are actions available on the component.
displayShadow	Boolean	Yes	Specifies whether a shadow is cast by the `Show Detail Frame` component. The default value is `false`.

Table B–7 (Cont.) Attributes of a Show Detail Frame Component

Attribute	Type	Supports EL?	Description
expansionMode	String	Yes	The default state of the `Show Detail Frame`. Available values are `minimized` and `normal`. The default display mode is `normal`.
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`. The rendering of a component can also be defined at runtime using the Show Component and Hide Component options.
Actions Attributes			
displayActions	String	Yes	Specifies when seeded interactions are displayed. Available options are `onHover` and `always`. The default is `always`.
inheritGlobalActions	Boolean	Yes	This attribute is of significance if you add child custom action components, and the attribute specifies whether the global `action` value of a `custom action` must override the local value. The default value is `false`. For information about global custom actions, see Section 20.3.2.2, "Defining Custom Actions at the Global Level."
showMoveAction	String	Yes	Specifies whether the Move action is available for the component. Available values are: ■ `menu`—Move action is displayed in the Actions menu, and the action to drag and drop the header is enabled ■ `none`—User can move the component by clicking the header and using drag and drop ■ `disabled`—Component cannot be moved The default value is `menu`. **Note:** The disabled option is applicable only in View mode.

Table B–7 (Cont.) Attributes of a Show Detail Frame Component

Attribute	Type	Supports EL?	Description
showRemoveAction	String	Yes	Renders a **Remove** icon on the `Show Detail Frame` header. Clicking this icon removes the component from the page. Available values are `chrome` and `none`. The default value is `none`. Note: In page Edit mode, the Remove icon appears regardless of this setting, provided other restrictions have not been applied.
showResizer	String	Yes	Specifies whether a resize handle is displayed on the lower right corner of the `Show Detail Frame`. You can alter only the height of a `Show Detail Frame` while resizing it. Available values are `never` and `always`. The default value is `always`.
showMinimizeAction	String	Yes	Specifies whether the minimize action is displayed on the header. Available values are `chrome` and `none`. The default is `chrome`.
showEditAction	Boolean	Yes	While in Edit mode, in Add Content or Design view, renders an **Edit** icon on the `Show Detail Frame` header that enables you to edit component properties at runtime. Default value is `true`. This is relevant only in a Composer-enabled page, that is, if the `Show Detail Frame` component is nested within a `Page Customizable` component.
Style Attributes			
contentStyle	String	Yes	The CSS style to apply to the `Show Detail Frame` content area. Manually enter any style in compliance with CSS version 2.0 or later. The CSS styles in this attribute are commonly used to define the height and background color of the `Show Detail Frame`. For example, `height:200px; background-color:green;` **Note**: If the `Show Detail Frame` component is nested inside a `Panel Customizable` component with a horizontal layout, you must specify a width for the `Show Detail Frame` component to ensure that it is rendered in page View mode.

Table B–7 (Cont.) Attributes of a Show Detail Frame Component

Attribute	Type	Supports EL?	Description
styleClass	String	Yes	The CSS style class to use for this component. The style class can be defined in your JSPX page or in a skinning CSS file, for example.
inlineStyle	String	Yes	The CSS styles to use for this component. This is intended for basic style changes. The `inlineStyle` is a set of CSS styles that are applied to the root DOM element of the component. If the `inlineStyle`'s CSS properties do not affect the DOM element you want affected, then you must create a skin and use the skinning keys which are meant to target particular DOM elements, like `::label` or `::icon-style`.
headerStyle	String	Yes	The CSS style to apply to the `Show Detail Frame` title that is displayed on the header. Manually enter any style in compliance with CSS version 2.0 or later. The CSS styles in this attribute are commonly used to define the font, size, and color of the title text.
Behavior Attributes			
partialTriggers	String	Yes	The IDs of the components that should trigger a partial update. This component listens on the trigger components. If a trigger component receives an event that causes it to update in some way, this component requests to be updated too. Identifiers are relative to the source component (this component), and must account for NamingContainers. If your component is inside of a naming container, you can use a single colon to start the search from the root of the page, or multiple colons to move up through the NamingContainers - "`::`" pop out of the component's naming container (or itself if the component is a naming container) and begin the search from there, "`:::`" pop out of two naming containers (including itself if the component is a naming container) and begin the search from there.
disclosureListener	`javax.el.MethodExpression`	Yes	A method reference to a disclosure listener. A disclosure event is fired when the user expands or collapses the `Show Detail Frame` component.

Table B–7 (Cont.) Attributes of a Show Detail Frame Component

Attribute	Type	Supports EL?	Description
stretchContent	String	Yes	Specifies whether the `Show Detail Frame` stretches its child component. Available options are `true`, `false`, and `auto`. The default value is `true`. You can use the `stretchContent` attribute to stretch a child component that supports being stretched. For example, container components like `Panel Form Layout`, `Panel Customizable`, and `Show Detail Item` provide the capability to be stretched. If you select `true`, then the child component is stretched to the height and width of the `Show Detail Frame`'s content area. The default height of the `Show Detail Frame` is 200px. The height of the `Show Detail Frame` is defined using the `ContentStyle` attribute. If you select `auto`, the child component is stretched only if the `Show Detail Frame` is wrapped inside a component that stretches it. If not, `stretchContent` is set to `false`.
Advanced Attributes			
binding	`oracle.adf.view.page.editor.component.ShowDetailFrame`	Supports only EL	An EL reference that stores the component instance in a bean. This can be used to give programmatic access to a component from a backing bean, or to move creation of the component to a backing bean.
attributeChangeListener	`javax.el.MethodExpression`	Yes	A method reference to an attribute change listener. Attribute change events are not delivered for any programmatic change to a property. They are only delivered when a renderer changes a property without the application's specific request. An example of an attribute change event might include the width of a column that supported client-side resizing.

Table B–7 (Cont.) Attributes of a Show Detail Frame Component

Attribute	Type	Supports EL?	Description
selectChild	String	Yes	Specifies whether runtime selection and customization are enabled on child components. This is relevant only in a Composer-enabled page, that is, if the `Show Detail Frame` component is nested within a `Page Customizable` component. Default value is `yes`. However, when you add a task flow as a child of the `Show Detail Frame` component, this attribute defaults to `no`. If you select `yes`, then child components can be selected and customized at runtime.
Customization Attributes			
customizationAllowed	Boolean		Specifies whether customizations are allowed on this component. Available values are `true` and `false`. The default value is `true`.
customizationAllowedBy	String		Specifies the roles for which customization is enabled.

Table B–7 (Cont.) Attributes of a Show Detail Frame Component

Attribute	Type	Supports EL?	Description
Other Attributes			
childCreation	String	Yes	Specifies when the children (contents) of the `Show Detail Frame` component are created. Valid values are: - `immediate` (default): All children are immediately created when the `Show Detail Frame` component is rendered, even when it is collapsed. - `lazy`: Children are created when the `Show Detail Frame` component is likely to be expanded. This behavior optimizes performance by postponing the creation of children until the `Show Detail Frame` parent component is expanded. The children remain in cached memory for subsequent display. - `lazyUncached`: Children are created when the `Show Detail Frame` parent component is likely to be expanded, and children are deleted when no longer visible. This means children do not reside in cached memory when not visible so must be re-created each time the parent component is expanded.
customizationId			This attribute has been deprecated. Use the `id` attribute.
helpTopicID	String	Yes	Specifies a Help topic ID that is used to link to a custom Help topic from the component. To link to a Help topic from your `Show Detail Frame` component instance, you can either link to an HTML file that is stored directly in your application directory, or to a Help topic that is part of a JAR file.

Supported Facets

Table B–8 describes the facets available on a `Show Detail Frame` component.

Table B–8 Show Detail Frame Facets

Name	Description
titleBarAction	Used if an action is to be associated with title of the `Show Detail Frame` component. The component specified by the facet is rendered in place of the `Show Detail Frame`'s `text` attribute.

Table B–8 (Cont.) Show Detail Frame Facets

Name	Description
additionalActions	Used if some additional actions are to be added to the Actions menu available on the `Show Detail Frame` header. To ensure that the additional actions appear similar to other actions on the menu, use `Command Menu Item` components or a `Group` component with nested `Command Menu Item` components inside this facet.

Displaying Child Component Properties Along with Show Detail Frame Properties

When you switch to the Edit mode of a page at runtime, in Add Content or Design view you will notice an **Edit** icon on all `Show Detail Frame` components that can be edited. Clicking this icon invokes the Component Properties dialog in which users can edit the `Show Detail Frame`'s properties. If you want the Component Properties dialog to display the `Show Detail Frame`'s properties and its child component's properties, then you can use the custom attribute, `sdf_selection_rule`.

In JDeveloper, right-click the `Show Detail Frame` component and select **Insert inside cust:showDetailFrame**, **JSF core**, and then **Attribute**. In the Insert Attribute dialog, specify `sdf_selection_rule` as the name and `sdf_for_edit_mode_only` as the value. In Source mode, this attribute appears as shown in the following example:

```
<cust:showDetailFrame text="showDetailFrame 1" id="sdf1">
  <f:attribute name="sdf_selection_rule" value="sdf_for_edit_mode_only"/>
</cust:showDetailFrame>
```

Disabling the Edit Option on a Show Detail Frame Component

When you switch to the Edit mode of a page at runtime, in Add Content or Design view you will notice an **Edit** icon on all `Show Detail Frame` components that can be edited. To disable property editing on a specific `Show Detail Frame` or `Movable Box` component in Add Content or Design view, then you can do this by setting the `showEditAction` attribute on the component to `false` at design time. The **Edit** icon is no longer displayed on the component when you enter the Edit mode of the page at runtime. However, users can still select such a component in Structure view and edit its properties.

B.1.6 Custom Action

Use `Custom Action` components to trigger navigational flow in a task flow when a region is included inside a `Show Detail Frame` component. You can define custom actions corresponding to the ADFc outcomes of the task flows. At runtime, these custom actions are displayed on the `Show Detail Frame` header as icons, menu options, or both. A `Custom Action` must always be defined as a child component of a `Show Detail Frame` and is useful only when the `Show Detail Frame` also contains a task flow as its child component.

You can add as many `Custom Action` components as there are ADFc outcomes in the task flow. If you add a `Custom Action` attribute without a corresponding ADFc outcome, or if the `action` attribute value does not match an ADFc outcome defined on the view that is currently being displayed by the task flow, then that action is not displayed at runtime.

Note: You can also define custom actions for `Show Detail Frame` components at the global level. For more information, see Section 20.3.2, "How to Enable Custom Actions on a Show Detail Frame Enclosing a Task Flow."

Table B–9 describes the attributes of a `Custom Action` component.

Table B–9 Attributes of a Custom Action Component

Attribute	Type	Supports EL?	Description
Common Attributes			
id	String	No	The identifier for the component. The identifier must follow a subset of the syntax allowed in HTML: ■ Must not be a zero-length String. ■ First character must be an ASCII letter (A-Za-z) or an underscore ('_'). ■ Subsequent characters must be an ASCII letter or digit (A-Za-z0-9), an underscore ('_'), or a dash ('-').
action	String	Yes	Specifies the action outcome defined for the task flow. The value of this attribute must match the relevant ADFc outcome in the task flow definition file.
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`. The rendering of a component can also be defined at runtime using the Show Component and Hide Component options.
text	String	Yes	Represents the text of the menu item link. This is applicable for a custom action rendered as a menu item link.
Appearance Attributes			

Table B–9 (Cont.) Attributes of a Custom Action Component

Attribute	Type	Supports EL?	Description
icon	String	Yes	For a custom action rendered as a toolbar link, specifies the icon to be rendered on the chrome. For a custom action rendered as a menu item link, this represents the icon to be displayed against the menu item text. This attribute supports these various types of URIs: ■ absolute - an absolute path to the image, like `"http://oracleimg.com/admin/images/ocom/hp/oralogo_small.gif"` ■ relative - a path located relatively to the source page, like `"bullet.jpg"` ■ context relative - a path relatively based on the web application's context root, like `"/images/error.png"` ■ server relative - a path relatively based on the web server by application name, like `"//adf-richclient-demo-context-root/images/error.png"` As icon does not allow alternative text to be provided for the image, in order to create an accessible product an icon must only be used when its use is purely decorative.
shortDesc	String	Yes	Provides a short description of the component. This text is commonly used by user agents to display tooltip help text, in which case the behavior for the tooltip is controlled by the user agent, for example, Firefox 2 truncates long tooltips. For form components, the `shortDesc` is displayed in a note window. This is applicable only for a custom action rendered as a toolbar icon.
location	String	Yes	Determines whether the custom action is rendered as a toolbar icon or a menu item link. Available values are `chrome`, `menu`, or `both`. Default value is `chrome`.
Customization Attributes			
customizationAllowed	Boolean		Specifies whether customizations are allowed on this component. Available values are `true` and `false`. The default value is `true`.
customizationAllowedBy	String		Specifies the roles for which customization is enabled.

Table B–9 (Cont.) Attributes of a Custom Action Component

Attribute	Type	Supports EL?	Description
Other Attributes			
actionComponent	String	Yes	Specifies the ID of the command component that must be queued for the action event. When the `actionComponent` attribute is specified, the `Show Detail Frame` component queues the action event on this component. For more information, see Section 20.3.2.3, "Configuring Custom Actions that Display Task Flow Views in a Separate Browser Window."
customizationId			This attribute has been deprecated. Use the `id` attribute.

B.1.7 Show Property

Use the `Show Property` component to display an attribute or parameter in a custom property panel at runtime. Use one `Show Property` component for each attribute or parameter that you want to display to users at runtime.

For more information about the `Show Property` component, see Section 19.3.6, "How to Display Properties and Parameters in a Custom Property Panel."

Table B–10 describes the new attributes of a `Show Property` component.

Table B–10 Attributes of a Show Property Component

Attribute	Type	Supports EL?	Description
Common Attributes:			
id	String	No	The identifier for the component. The identifier must follow a subset of the syntax allowed in HTML: ■ Must not be a zero-length String. ■ First character must be an ASCII letter (A-Za-z) or an underscore ('_'). ■ Subsequent characters must be an ASCII letter or digit (A-Za-z0-9), an underscore ('_'), or a dash ('-').
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`. The rendering of a component can also be defined at runtime using the Show Component and Hide Component options.
attributeType	String	Yes	Specifies the property type. Supported values are `text`, `cbox`, `date`, `lov`.

Table B–10 (Cont.) Attributes of a Show Property Component

Attribute	Type	Supports EL?	Description
value	String	Yes	Specifies the current value of the property. If the EL binding for the "value" points to a bean property with a getter but no setter, and this is an editable component, the component will be rendered in read-only mode.
label	String	Yes	Specifies the label of the component. If you want the label to appear above the control, use a `panelFormLayout`.
Data Attributes:			
value	String	Yes	Specifies the current value of the property. If the EL binding for the "value" points to a bean property with a getter but no setter, and this is an editable component, the component will be rendered in read-only mode.
selectItem			Specifies the list of values to be displayed if `attributeType` was set to `lov`. This attribute takes an EL value that returns the list of values dynamically.
Appearance Attributes:			
columns	Int	Yes	Specifies the size of the text control specified by the number of characters shown. The number of columns is estimated based on the default font size of the browser.
rows	Int	Yes	Specifies the height of the text control specified by the number of characters shown. The default value is 1, which generates a one-row input field. The number of rows is estimated based on the default font size of the browser.
label	String	Yes	Specifies the label of the component. If you want the label to appear above the control, use a `panelFormLayout`.
shortDesc	String	Yes	Provides a short description of the component. This text is commonly used by user agents to display tooltip help text, in which case the behavior for the tooltip is controlled by the user agent, for example, Firefox 2 truncates long tooltips. For form components, the `shortDesc` is displayed in a note window. This is applicable only for a custom action rendered as a toolbar icon.

Table B–10 (Cont.) Attributes of a Show Property Component

Attribute	Type	Supports EL?	Description
simple	Boolean	Yes	A boolean value that controls whether the component provides label support; when set to "true", the component will not display the label (these may be ignored: label, labelAndAccessKey, accessKey, showRequired, help facet) and may use simpler layout primitives. One of the usecases can be when the component is used in repeatable elements like in table, for-each etc., where label is not required.
unselectedLabel	String	Yes	Specifies the label for the option that represents a value of null, meaning nothing is selected. If `unselectedLabel` is not set and if the component does not have a selected value, then an option with an empty string as the label and value is rendered as the first option in the choice box (if there isn't an empty option already defined). Once an option has been successfully selected, and if `unselectedLabel` is not set, then the empty option will not be rendered.
Behavior Attributes:			
required	Boolean	Yes	Specifies whether a non-null, non-empty value must be entered. If `false`, validators will not be executed when the value is null or empty.
autoSubmit	Boolean	Yes	Specifies an attribute which if set to TRUE on a form element, the component will automatically submit when an appropriate action takes place (a click, text change, etc.). Since `autoSubmit` is a partial submit, also submitted and re-rendered are any other components with `partialTriggers` pointing to this component.
disabled	Boolean	Yes	Specifies whether the property should be shown as disabled. This is useful if the `Show Property` component is inside an iterator whose model specifies that the property must be shown as disabled, for example, if an MDS restriction has been applied on the property.
validator	String	Yes	Specifies a method reference to a validator method.
valueChangeListener	javax.faces.el.MethodBinding	EL only	Specifies a method reference to a value change listener.
Advanced Attributes:			
binding	`oracle.adf.view.rich.component.fragment.UIXDeclarativeComponent`	Supports only EL	Specifies an EL reference that stores the component instance in a bean. This can be used to give programmatic access to a component from a backing bean, or to move creation of the component to a backing bean.

Table B–10 (Cont.) Attributes of a Show Property Component

Attribute	Type	Supports EL?	Description
clientComponent	Boolean	Yes	Specifies whether a client-side component will be generated. A component may be generated whether or not this flag is set, but if client Javascript requires the component object, this must be set to true to guarantee the component's presence. Client component objects that are generated today by default may not be present in the future; setting this flag is the only way to guarantee a component's presence, and clients cannot rely on implicit behavior. However, there is a performance cost to setting this flag, so clients should avoid turning on client components unless absolutely necessary.
componentId			If you use the `Show Property` tag in Composer's property panel, `componentId` specifies the ID of the component for which the property must be rendered.
showELBuilder	Boolean	Yes	Specifies whether to display the EL builder for the property.
showResourceEditor	Boolean	Yes	Specifies whether to display the resource string editor for the property. However, this option is enabled only if you have configured resource string editing in the application and the property is of type String. For more information, see Section 20.12, "Configuring Runtime Resource String Editing."
taskFlowId	String	Yes	If `Show Property` is used to display task flow parameters, `taskFlowId` specifies the ID of the task flow.
taskFlowParam	String	Yes	If `Show Property` is used to display task flow parameters, `taskflowParam` specifies the task flow parameter that the input field must display.
customizationId			This attribute has been deprecated. Use the `id` attribute.
Customization Attributes			
customizationAllowed	Boolean		Specifies whether customizations are allowed on this component. Available values are `true` and `false`. The default value is `true`.
customizationAllowedBy	String		Specifies the roles for which customization is enabled.
Other Attribute			
text	String	Yes	Specifies the text used for the check box. This is used only when `type` is set to `boolean`.

Supported Facets

The `Show Property` component supports a `customLink` facet, which can be used to include a `Commamd Menu Item`. The `Command Menu Item` specified in this facet appears as a custom link in the dropdown next to the property field, along with Resource String editor and EL Builder.

B.2 Composer-Specific Files and Configurations

This section describes the various files that you can modify to extend Composer capabilities. While some files, for example the Composer extension file, `pe_ext.xml`, are entirely relevant to Composer only, others are ADF configuration files that can take entries for Composer-specific configurations.

This section includes the following topics:

- Section B.2.1, "pe_ext.xml"
- Section B.2.2, "adf-config.xml"
- Section B.2.3, "adf-settings.xml"
- Section B.2.4, "web.xml"

B.2.1 pe_ext.xml

You can create a `pe_ext.xml` file and add elements in it to register new Composer add-ons and custom property panels, selectively render panels, register event handlers, and define property filters. This file is not available by default when you add Oracle Components to a page. You can create this file in the `META-INF` directory in your `Portal` project; for example, in the *`APPLICATION_HOME`*`\Portal\src\META-INF` directory. This section describes the different elements of the Composer extension file schema and explain when you may want to use the schema elements.

> **Note:** In applications that use shared libraries with their own pe_ext.xml file, use the **`sequence`** element within the `pe-extension` tag to define the order of execution. Use `sequence="first"` to lay down default settings, and `sequence="last"` to load the file last and override settings defined by files loaded previously.

This section contains the following subsections:

- Section B.2.1.1, "addon-config"
- Section B.2.1.2, "property-panels"
- Section B.2.1.3, "lov-config"
- Section B.2.1.4, "event-handlers"
- Section B.2.1.5, "drop-handlers"
- Section B.2.1.6, "filter-config"
- Section B.2.1.7, "elbuilder-config"
- Section B.2.1.8, "selection-config"
- Section B.2.1.9, "Sample pe_ext.xml File"

B.2.1.1 addon-config

Use the addon-config element to include entries for new Composer add-ons and custom property panels. For example, to add a new **About** button to your page that invokes a panel displaying information about your application, you must first create a task flow containing the information and then register this task flow in the pe_ext.xml file. Composer add-ons declared inside the addon-config element are configured in the adf-config.xml file, whereas custom property panels declared within the addon-config element are configured within the property-panels element in the extension file itself.

For information about configuring add-ons in adf-config.xml, see Section B.2.2.2, "addon-panels." For information about configuring custom property panels using the property-panels element, see Section B.2.1.2, "property-panels."

Insert the addon-config element within the pe-extension tag. You can add only one addon-config element in the XML file. Within the addon-config element you can have a panels element to define add-ons.

panels

Use the panels element to register new add-ons or property panels in Composer. Add the panels element within the addon-config element. You can have only one panels element in an extension file, and all custom panels must be defined inside this element.

panel

Use panel elements to define individual add-ons and property panels to display to users. Within the panels element you can insert any number of individual panel elements that define the add-ons or property panels to be displayed in Composer. You must have one panel element for every add-on or property panel you want to display.

Table B–11 describes the attributes of the panel element.

Table B–11 panel Element Attributes

Attribute	Description
name	An identifier that is used while referencing the new add-on in adf-config.xml, or a property panel in the property-panels section. This must be unique in the application.
title	The title to display on the button used to invoke the task flow in Composer. You can use EL for this property to show a localized title. For custom property panels, the title to display on the new tab for that panel.
icon	The icon that appears next to the title on the button. This is optional.
taskflow-id	The ID of the task flow that defines the add-on or property panel.
help-topic-id	A help topic ID that links to a custom help topic from the add-on or property panel. This is optional.

When a panel element is deleted from the file, that add-on or property panel is not displayed on the page.

The following example shows how to use the addon-config, panels, and panel elements:

```
<addon-config>
  <panels>
    <panel name="oracle.fod.custom.panel" title="About FOD"
           icon="adf/webcenter/images/about.gif"
           taskflow-id="/WEB-INF/about-fod.xml#about-fod"
    />
  </panels>
</addon-config>
```

For more information about add-ons, see Section 19.2, "Creating Composer Add-Ons."

Optionally, to register an event handler for a specific add-on panel, you can also add an `event-handlers` element inside a `panel` element, as shown in the following example:

```
<event-handlers>
  <event-handler event="close">
    oracle.fod.custom.TaskFlowEventHandler
  </event-handler>
</event-handlers>
```

The XML code is the same as for any generic event handler. For more information, see Section B.2.1.4, "event-handlers."

B.2.1.2 property-panels

Use the `property-panels` element to register custom property panels. Add the `property-panels` element within the `addon-config` element. For information about custom property panels, see Section 19.3, "Creating Custom Property Panels." You can have only one `property-panels` element in an extension file.

property-panel

Use the `property-panel` element to define a custom property panel to display for a particular component in Composer. Within the `property-panels` element you can insert any number of individual `property-panel` elements to define custom property panels to display as tabs in the Component Properties dialog. To specify the component or task flow for which you want to register a custom property panel, you must add a `component` or `taskflow-id` element respectively within the `property-panel`.

Table B–12 describes the `property-panel` element attributes.

Table B–12 property-panel Element Attributes

Attribute	Description
`name`	An identifier for the custom property panel you want to display in the Component Properties dialog.
`rendered`	Whether this panel is displayed to users in the Component Properties dialog. This can take an EL value.

component

Use the `component` element to specify the fully qualified class name of the component for which you are registering the custom property panel. You can have only one `component` inside a `property-panel` element.

taskflow-id

Use the taskflow-id element to specify the name of the task flow for which you are registering the custom property panel. You can have only one taskflow-id inside a property-panel element.

panel

Use the panel element to specify a custom property panel to display as a tab in the Component Properties or Page Properties dialog for the component. Within a property-panel element, you can have any number of panel elements. Table B–13 describes the attributes of a panel element.

Table B–13 panel Element Attributes

Attribute	Description
name	Name with which you declared the panel in the addon-config section.
rendered	Whether the custom property panel must be rendered or not.
parameter	Parameters to be passed to the implementing task flow. Takes an EL only and must return a Map<String, String>.

When a panel element is deleted from the file, that property panel is no longer displayed in the Component Properties dialog.

The following example shows how to register a custom property panel for a Command Button component:

```
<property-panels>
  <property-panel name="cmdbtn">
    <component>oracle.rich.CommandButton</component>
    <panel name="prop.panel.cmdbtn"/>
  </property-panel>
</property-panels>
```

The following example shows how to register a custom property panel for a task flow:

```
<property-panels>
  <property-panel name="dashboard">
    <taskflow-id>/WEB-INF/dashboard-taskflow#prop-panel</taskflow-id>
    <panel name="dashboard.prop-panel" />
  </property-panel>
</property-panels>
```

B.2.1.3 lov-config

Use the lov-config element to register a custom List of Values or picker for a task flow parameter. Add the lov-config element directly under the pe-extension tag. You can have only one lov-config element in an extension file. Within this element, you can add a task-flow-definition element for each task flow that you want to register for LOV usage. Add an input-parameter-definition for each parameter that provides an LOV. Use enumeration elements to list the LOV options for a parameter, as shown in the following example:

```
<lov-config>
  <task-flow-definition
taskflow-id="/WEB-INF/employee-details.xml#employee-details">
    <input-parameter-definition>
      <name>Designation</name>
        <enumeration>
```

```
          <item>
            <name>Accounts Manager</name>
            <value>Accounts Manager</value>
            <description>Accounts Manager</description>
          </item>
          <item>
            <name>Accounts Assistant</name>
            <value>Accounts Assistant</value>
            <description>Accounts Assistant</description>
          </item>
          <item>
            <name>Payroll Executive</name>
            <value>Payroll Executive</value>
            <description>Payroll Executive</description>
          </item>
          <item>
            <name>Senior Manager</name>
            <value>Senior Manager</value>
            <description>Senior Manager</description>
          </item>
        </enumeration>
    </input-parameter-definition>
  </task-flow-definition>
</lov-config>
```

For more information, see Section 19.5, "Configuring Custom LOVs or Pickers for Task Flow Parameters."

B.2.1.4 event-handlers

Use the `event-handlers` element to register handlers for events generated by Composer. Add the `event-handlers` element directly under the `pe-extension` tag. You can have only one `event-handlers` element under `pe-extension`.

Alternatively, to register an event handler for a specific Composer add-on panel, you can also add an `event-handlers` element inside a `panel` element under the `addon-config` section. For more information, see Section B.2.1.1, "addon-config."

event-handler

Use the `event-handler` element to register an event handler in Composer. Within `event-handlers` you can have any number of `event-handler` elements to register handlers for save, close, deletion, addition, and selection events. For example, if you have implemented the `processSave` method in a Java class called `SaveHandler` to perform a specific action when a Save event is invoked, then you can register that implementation in Composer by adding an `event-handler` entry in the `pe_ext.xml` file as follows:

```
<event-handlers>
  <event-handler event="save">view.SaveHandler</event-handler>
</event-handlers>
```

For information about configuring event handlers, see Section 19.6, "Configuring Event Handlers for Composer UI Events."

B.2.1.5 drop-handlers

Use the `drop-handlers` element to register drop handlers to handle addition of components to the page from the resource catalog. Add the `drop-handlers` element directly under the pe-extension tag. You can have only one drop-handlers element in an extension file.

drop-handler

Use the drop-handler element to register a drop handler in Composer. Within drop-handlers you can have any number of drop-handler elements to register drop handlers that you created in the application. For example, if you created a drop handler called TestDropHandler to handle addition of XML components on the page, then you can register that implementation in Composer by adding a drop-handler entry in the pe_ext.xml file as follows:

```
<drop-handlers>
  <drop-handler>test.TestDropHandler</drop-handler>
</drop-handlers>
```

For more information, see Section 19.7, "Configuring Drop Handlers in the Resource Catalog."

B.2.1.6 filter-config

Use the filter-config element to define property filters for components that can be edited at runtime. For a selected component, the Component Properties dialog displays properties that can be edited. If you do not want to expose all properties for editing, you can filter specific properties so that they are not displayed in the Component Properties dialog. You can specify global-level filters to filter common attributes across all components, or you can define tag-level filters to filter properties for a particular component only.

Add the filter-config element directly under the pe-extension tag. You can have only one filter-config element in an extension file.

For information about property filters, see Section 19.8, "Defining Property Filters."

global-attribute-filter

Use the global-attribute-filter element to filter specific properties across all components. You can have only one global-attribute-filter element in the extension file. Within this element you can include any number of attribute elements to define property filters for components from different libraries.

taglib-filter

Use the taglib-filter element to define property filters for components within a particular library. You can include multiple taglib-filter elements to filter properties for components in different libraries. Within this element you can include tag elements for every component belonging to the library.

Table B–14 describes the attribute the taglib-filter element can take.

Table B–14 tag Element Attribute

Attribute	Description
namespace	Namespace of the tag library containing the component whose properties you want to filter.

tag

Use the tag element to specify a component whose properties you want to filter. You can include multiple tag elements within a taglib-filter element. Within this element you can include attribute elements for all properties you want to filter.

Table B–15 describes the attribute the tag element can take.

Table B–15 tag Element Attribute

Attribute	Description
name	Name of the component whose properties you want to filter, for example, commandButton, portlet.

attribute

Use the attribute element to specify a property to filter either across all components or for the specified component only. To define global-level filters, you must include attribute elements inside the global-attribute-filter. To define property filters for a particular component, you must include attribute elements inside the taglib-filter element.

Table B–16 describes the attributes the attribute element can take.

Table B–16 attribute Element Attributes

Attribute	Description
name	Name of the property you want to filter.
filtered	Whether the property must be filtered or not. Takes a value of true or false. To filter the property in a specific view, use the view attribute.
label	The label for the property in the UI. To retrieve localized strings or show a different label depending on the view, use EL.
view	(Optional) The view in which to show/hide this property. Takes a value of design or source.

The following example shows how you can define global and component-level property filters:

```
<filter-config>
   <global-attribute-filter>
    <attribute name="readOnly" filtered="false" label="Read Only"/>
    <attribute name="required" filtered="false" label="Mandatory"/>
    <attribute name="shortDesc" filtered="false" label="#{composerBundle.PNL_TB_
SHORTDESC}"/>
  </global-attribute-filter>

  <taglib-filter namespace="http://xmlns.oracle.com/adf/faces/rich">
    <tag name="goLink">
      <attribute name="accessKey" view="design"/>
      <attribute name="targetFrame" filtered="false" view="source"/>
      <attribute name="destination" filtered="false"
label="#{pageEditorPanelBean.layoutView ?  'Where do you want to surf?' :
'Destination'}"/>
    </tag>
    <tag name="inputText">
      <attribute name="all" view="design"/>
      <attribute name="label" label="Field Name" filtered="false" />
      <attribute name="readOnly" filtered="false" />
      <attribute name="required" filtered="false" />
      <attribute name="rendered" filtered="false" />
      <attribute name="wrap" filtered="false" />
    </tag>
  </taglib-filter>
```

```
</filter-config>
```

B.2.1.7 elbuilder-config

Use the elbuilder-config element to configure custom values for the expression builder. The expression builder invoked from Composer's Component Properties dialog enables users to specify EL values for component properties. Users can either select for a set of predefined values or enter an EL value in the text box. You can customize the expression builder to provide more options to users. For more information, see Section 19.4, "Extending the Expression Builder."

Add the elbuilder-config element directly under the pe-extension tag. You can have only one elbuilder-config element in an extension file.

selector

Use selector elements to define and include custom options, as shown in the following example:

```
<elbuilder-config>
  <!-- define selector -->
  <selector id="CustomELParameter">
    view.CustomELParameter
  </selector>

  <!-- include selector -->
  <selectors>
    <selector id="CustomELParameter"/>
  </selectors>
</elbuilder-config>
```

You can include many selector elements inside a selectors element.

B.2.1.8 selection-config

Use the selection-config element to enable or disable direct select for specific components and define associated operations. To make a component selectable, you must define operations within this tag. For more information, see Section 19.11, "Enabling Direct Select in Design or Add Content View."

Within the <selection-config> tag, you can configure selection globally using <global-filter> and by namespace and tag using <selection-taglib-filter>.

selection

The selection tag is used to enable direct select view.

operation

Available operations are defined within <operation> tags under each specific component. The following elements are used to define operations:

- name: Defines the operation to be executed. (Use standard or custom operations.)
- label (optional): Overrides the operation name as the tab label in the popup window.
- filtered: Set to false to include the operation in the popup window.

```
<selection-config>
  <global-filter>
    <selection view="design" enabled="false"/>
  </global-filter>
  <selection-taglib-filter
   namespace="http://xmlns.oracle.com/adf/faces/customizable">
    <tag name="showDetailFrame">
      <selection view="design" enabled="true"/>
      <operation name="oracle.adf.pageeditor.pane.sdfprop"
                 label="SDF Change Property"
                 filtered="false"/>
    </tag>
  </selection-taglib-filter>
</selection-config>
```

B.2.1.9 Sample pe_ext.xml File

Example B–1 shows a sample `pe_ext.xml` file with different elements used to extend Composer capabilities.

Example B–1 Sample pe_ext.xml File

```
<pe-extension xmlns="http://xmlns.oracle.com/adf/pageeditor/extension">

<addon-config>
<!-- Composer add-on panels configuration -->
  <panels>
    <panel name="oracle.fod.custom.panel" title="About FOD"
           icon="adf/webcenter/images/about.gif"
           taskflow-id="/WEB-INF/about-fod.xml#about-fod"/>
  </panels>

<!-- Composer property panels configuration -->
  <property-panels>
    <property-panel name="cmdbtn">
      <component>oracle.rich.CommandButton</component>
      <panel name="prop.panel.cmdbtn" />
    </property-panel>
  </property-panels>
</addon-config>

<Save event handler configuration -->
  <event-handlers>
    <event-handler event="save">view.SaveHandler</event-handler>
  </event-handlers>

<!-- Test drop handler configuration -->
  <drop-handlers>
    <drop-handler>test.TestDropHandler</drop-handler>
  </drop-handlers>

<!-- Property filter configuration. Properties defined here are not displayed in
Composer. -->
  <filter-config>
    <global-attribute-filter>
      <attribute name="accessKey" />
      <attribute name="attributeChangeListener" />
      <attribute name="autoSubmit" />
      <attribute name="binding" />
    </global-attribute-filter>
    <taglib-filter namespace="http://xmlns.oracle.com/adf/faces/rich">
      <tag name="commandButton">
        <attribute name="text" />
        <attribute name="icon" />
      </tag>
  </filter-config>
</pe-extension>
```

B.2.2 adf-config.xml

The `adf-config.xml` file specifies application-level settings that are usually determined at deployment and are often changed at runtime. This file is created when you create your application and is located in the `ADF META-INF` folder under `Descriptors` in the Application Resources panel. The following example shows the minimal `adf-config.xml` file created when you create a Portal Framework application:

```
<?xml version="1.0" encoding="windows-1252" ?>
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
            xmlns:adf="http://xmlns.oracle.com/adf/config/properties">
  <adf:adf-properties-child xmlns="http://xmlns.oracle.com/adf/config/properties">
    <adf-property name="adfAppUID" value="Application4-2138"/>
  </adf:adf-properties-child>
</adf-config>
```

When you add the `Page Customizable` component to a page, certain required configurations are added to the `adf-config.xml` file.

You must update the `adf-config.xml` file when you perform tasks such as registering new add-ons and custom property panels, selectively rendering add-ons, creating customization layers, enabling and disabling the Composer sandbox, creating custom resource catalogs, and disabling Structure view. The following sections describe the various `adf-config.xml` elements used for Composer-specific configurations.

This section contains the following subsections:

- Section B.2.2.1, "page-editor-config"
- Section B.2.2.2, "addon-panels"
- Section B.2.2.3, "sandbox-namespaces"
- Section B.2.2.4, "session-options-factory"
- Section B.2.2.5, "enable-design-views"
- Section B.2.2.6, "allow-el and protect-el"
- Section B.2.2.7, "rcv-config"
- Section B.2.2.8, "customizableComponentsSecurity"
- Section B.2.2.9, "mds-config"
- Section B.2.2.10, "resource-string-editor"
- Section B.2.2.11, "enable-source-view"
- Section B.2.2.12, "enable-zoom"
- Section B.2.2.13, "persistent-change-manager"
- Section B.2.2.14, "taglib-config"
- Section B.2.2.15, "security-config"
- Section B.2.2.16, "Sample adf-config.xml File"

B.2.2.1 page-editor-config

Use the `<pe:page-editor-config>` element to include Composer-specific configurations such as add-on panel registration, sandbox configuration, resource string editor configuration, and so on. Add the `<pe:page-editor-config>` element within the `adf-config` tag as shown in the following example:

```
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
            xmlns:adf="http://xmlns.oracle.com/adf/config/properties"
            xmlns:mdsC="http://xmlns.oracle.com/adf/mds/config">
. . .
  <pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
    . . .
  </pe:page-editor-config>
</adf-config>
```

B.2.2.2 addon-panels

Use the `<pe:addon-panels>` element to register custom add-ons and property panels in Composer. Insert the `<pe:addon-panels>` element within `<pe:page-editor-config>`. You can have only one `<pe:addon-panels>` element in the file, however, within `<pe:addon-panels>` you can have any number of `<pe:addon-panel>` elements to register custom panels. For more information about Composer add-ons and property panels, see Section 19.2, "Creating Composer Add-Ons" and Section 19.3, "Creating Custom Property Panels."

addon-panel

Use a `<pe:addon-panel>` element to register an add-on in the `adf-config.xml` file. A `<pe:addon-panel>` element must only be included inside the `<pe:addon-panels>` element. You can have any number of `<pe:addon-panel>` elements to register custom panels. The following example shows how you can register a new add-on using these elements:

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  <pe:addon-panels>
    <!-- Page Properties add-on -->
    <pe:addon-panel name="oracle.adf.pageeditor.addonpanels.page-settings" />

    <!-- Page Reset add-on -->
    <pe:addon-panel name="oracle.adf.pageeditor.addonpanels.page-reset" />

    <pe:addon-panel name="oracle.fod.custom.panel" />

  </pe:addon-panels>
  . . .
</pe:page-editor-config>
```

The `<pe:addon-panel>` element also supports the `rendered` attribute. This attribute can take an EL value and specifies whether the panel must be rendered in Composer or not.

When registering custom add-ons, you must also include entries for the default add-ons. If the default add-ons are not registered, then only your custom add-on is available in Composer.

The `<pe:addon-panel>` element supports the following parameters:

- **rendered**: Use to specify whether the add-on must be rendered or not. The `rendered` attribute can take `true`, `false`, or an EL value. Use this attribute to display an add-on conditionally based on specific criteria.

- **parameters**: Use to declaratively pass parameters to the add-on task flow. The `parameters` attribute takes an EL value as shown in the following example:

  ```
  <pe:addon-panels>
    <pe:addon-panel
  name="oracle.adf.pageeditor.addonpanels.customization-manager"
  parameters="#{AppUtilBean.customizationManagerParams}"/>
      . . .
  </pe:addon-panels>
  ```

  where `AppUtilBean` provides the logic to pass parameters to the add-on task flow.

B.2.2.3 sandbox-namespaces

Use the `<pe:sandbox-namespaces>` element to register namespaces for all metadata for which you want to enable sandbox creation at runtime. For more information about enabling sandbox creation, see Section 21.2.1, "How to Enable Composer Sandbox Creation."

Insert the `<pe:sandbox-namespaces>` element within the `<pe:page-editor-config>` element. The following example shows how to use the `sandbox-namespaces` element:

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  . . .
  <pe:sandbox-namespaces>
    <pe:namespace path="/pages"/>
    <pe:namespace path="/pageDefs"/>
  </pe:sandbox-namespaces>
</pe:page-editor-config>
```

B.2.2.4 session-options-factory

When creating customization layers in your application, use the `<pe:session-options-factory>` element to register the `ComposerSessionOptionsFactory` implementation with Composer. This class contains the logic to save customizations in different layers based on the specified criteria. For more information, see Section 21.3, "Adding Customization Layers to View and Edit Modes: Example."

The following example shows how to register a class named `AppsSessionOptionsFactoryImpl`:

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  . . .

<pe:session-options-factory>view.AppsSessionOptionsFactoryImpl</pe:session-options
-factory>
</pe:page-editor-config>
```

B.2.2.5 enable-design-views

To enable Composer direct select, you must first enable Select view. For more information on direct select functionality, see Section 19.11, "Enabling Direct Select in Design or Add Content View." Add the `<pe:enable-design-views>` tag inside the `<pe:page-editor-config>` tag to define the available views. The possible values are: `design`, `add-content`, `select`, `source`, `preview`, and `all`. The `all` value will show `design`, `select`, `source`, and `preview` only since `add-content` is a subset of `design`.

B.2.2.6 allow-el and protect-el

You can configure Composer to disable EL or protect existing EL from overwrite. Use `<pe:allow-el>` to define whether or not EL can be run in application pages. The default is true. Use `<pe:protect-el>` to define whether or not EL in form elements can be edited. The default is false. For more information, see Section 19.4.2, "How to Protect Expression Language."

The following example disables EL:

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  . . .
  <pe:allow-el>false</pe:allow-el>
</pe:page-editor-config>
```

B.2.2.7 rcv-config

Use the `<rcv-config>` element to register custom resource catalogs with Composer and to register the `ResourceCatalogSelector` implementation when using multiple resource catalogs.

If you want to display a custom resource catalog to users in place of the default one, you must first create a catalog definition file with the required content and then register this catalog definition in the Composer extension file and `adf-config.xml` file. The custom resource catalog is then displayed when a user clicks an Add Content button on the page. For more information, see Section 14.2, "Creating a Resource Catalog."

Insert the `<rcv-config>` element within the `adf-config` tag. The following example shows how you can use the `<rcv-config>` element to register a custom catalog called `users-catalog`:

```
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
            xmlns:adf="http://xmlns.oracle.com/adf/config/properties"
            xmlns:mdsC="http://xmlns.oracle.com/adf/mds/config">
  . . .
  <rcv-config xmlns="http://xmlns.oracle.com/adf/rcs/viewer/adf-config">
    <default-catalog catalog-name="users-catalog"/>
  </rcv-config>
</adf-config>
```

You can also configure multiple resource catalogs with Composer so that different catalogs are displayed to different users depending on the specified criteria. When configuring multiple resource catalogs, use the `<rcv-config>` element with a `<catalog-selector>` element to register the `ResourceCatalogSelector` implementation, which contains the logic for selecting a resource catalog.

The following example shows how you can use the `<rcv-config>` element to register a `ResourceCatalogSelector` implementation called `CatalogSelector`:

```
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
            xmlns:adf="http://xmlns.oracle.com/adf/config/properties"
            xmlns:mdsC="http://xmlns.oracle.com/adf/mds/config">
  . . .
  <rcv-config xmlns="http://xmlns.oracle.com/adf/rcs/viewer/adf-config">
    <catalog-selector class-name="webcenter.CatalogSelector"/>
    <default-catalog catalog-name="default-catalog"/>
  </rcv-config>
</adf-config>
```

B.2.2.8 customizableComponentsSecurity

Use the <customizableComponentsSecurity> element to apply restrictions on Show Detail Frame actions. Insert the <customizableComponentsSecurity> element within the adf-config tag.

Within the <customizableComponentsSecurity> element, you can specify the <enableSecurity>, <actionsCategory>, <actions>, and <custom-actions> elements.

enableSecurity

Use the <enableSecurity> element to override the security inheritance behavior on Show Detail Frame actions. This element can take a value of true or false. If set to true, then the ability for a user to modify a component is first determined from the page permissions and then adjusted according to the current set of actions defined for that type of permission. If set to false, then all actions are available to users. A user's page permissions and actions configured in adf-config.xml are ignored.

actionsCategory

Use the <actionsCategory> element to apply restrictions on a group of Show Detail Frame actions simultaneously. Within the <actionsCategory> element, you can have <actionCategory> elements for the supported categories. For more information about action categories, see Section 22.5.2, "Defining Security at the Actions Category Level."

The following example shows how actionsCategory can be used:

```
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
            xmlns:adf="http://xmlns.oracle.com/adf/config/properties"
            xmlns:mdsC="http://xmlns.oracle.com/adf/mds/config">
  . . .
  <cust:customizableComponentsSecurity
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
    <cust:enableSecurity value="true"/>

    <cust:actionsCategory>
      <cust:actionCategory name="personalizeActionsCategory" value="false"/>
      <cust:actionCategory name="editActionsCategory" value="true"/>
    </cust:actionsCategory>

    <cust:actions>
      . . .
    </cust:actions>

  </cust:customizableComponentsSecurity>
</adf-config>
```

actions

Use the <actions> element to apply restrictions on individual actions. Within each actions element, you can have <action> elements for all supported actions.

The following example shows how <actions> can be used:

```
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
            xmlns:adf="http://xmlns.oracle.com/adf/config/properties"
            xmlns:mdsC="http://xmlns.oracle.com/adf/mds/config">
  . . .
  <cust:customizableComponentsSecurity
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
    <cust:enableSecurity value="true"/>

    <cust:actionsCategory>
```

```
      . . .
    </cust:actionsCategory>

    <cust:actions>
      <cust:action name="showMinimizeAction" value="true"/>
      <cust:action name="showMoveAction" value="false"/>
    </cust:actions>

  </cust:customizableComponentsSecurity>
<adf-config>
```

For more information about applying action-level restrictions, see Section 22.5, "Applying Action-Level Restrictions on Panel Customizable and Show Detail Component Actions."

custom-actions

Use the <custom-actions> element to define custom actions to display along with the other Show Detail Frame actions. You must add only one <custom-actions> element inside the customizableComponentsSecurity section. Within this you can add any number of <custom-action> elements to define individual custom actions.

> **Note:** Alternatively, you can add a <custom-actions> element inside an <adf-config-child> element instead of inside the <customizableComponentsSecurity> section.

For more information about custom actions, see Section 20.3.2, "How to Enable Custom Actions on a Show Detail Frame Enclosing a Task Flow."

B.2.2.9 mds-config

When defining type-level application customization restrictions on components, use the <mds-config> element to register a standalone XML file describing the restrictions to be applied on specific components. For information about applying type-level restrictions, see Section 22.1.1, "How to Define Type-Level Customization Policies."

Insert the <mds-config> element within the <adf-config> tag. You can add the <mds-config> element as follows:

```
<mds-config xmlns="http://xmlns.oracle.com/mds/config">
  <type-config>
    <standalone-definitions>
      <file>Directory_Name/standalone.xml</file>
    </standalone-definitions>
  </type-config>
</mds-config>
```

B.2.2.10 resource-string-editor

Use a <pe:resource-string-editor> element to enable resource string editing in your application. Insert the <pe:resource-string-editor> element within the <pe:page-editor-config> section, as shown in the following example:

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  . . .
  <pe:resource-string-editor>
    <pe:enabled>true</pe:enabled>
  </pe:resource-string-editor>
</pe:page-editor-config>
```

For more information, see Section 20.12, "Configuring Runtime Resource String Editing."

B.2.2.11 enable-source-view

Use the <pe:enable-source-view> element to enable or disable Structure view in Composer. Insert the <pe:enable-source-view> element within the <pe:page-editor-config> section. Structure view is enabled by default in Composer. You can disable it by setting <pe:enable-source-view> to false, as shown in the following example:

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  . . .
  <pe:enable-source-view>false</pe:enable-source-view>
</pe:page-editor-config>
```

For more information, see Section 20.8, "Disabling Structure View for the Application."

B.2.2.12 enable-zoom

Use the <pe:enable-zoom> element to enable or disable the capability to zoom into task flows in Composer. Insert the <pe:enable-zoom> element within a <pe:source-view> tag in the <pe:page-editor-config> section. Task flow zoom is enabled by default in Composer. You can disable it by setting <pe:enable-zoom> to false, as shown in the following example:

```
<pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">
  . . .
  <pe:source-view>
    <pe:enable-zoom>false</pe:enable-zoom>
  </pe:source-view>
</pe:page-editor-config>
```

For more information, see Section 20.9, "Disabling Task Flow Zoom Capability."

B.2.2.13 persistent-change-manager

Use this to configure the change manager to be used for persisting changes made in Composer. Insert the <persistent-change-manager> element within the <adf-faces-config> section. You must set <persistent-change-manager> to MDSDocumentChangeManager as follows if you want to persist application customizations to MDS:

```
<adf-faces-config xmlns="http://xmlns.oracle.com/adf/faces/config">
  <persistent-change-manager>

<persistent-change-manager-class>oracle.adf.view.rich.change.MDSDocumentChangeMana
ger</persistent-change-manager-class>
  </persistent-change-manager>
. . .
</adf-faces-config>
```

For more information about change persistence in Composer, see Section 20.11, "Configuring the Persistence Change Manager."

For more information about the <persistent-change-manager> element, see *Fusion Developer's Guide for Oracle Application Development Framework*.

B.2.2.14 taglib-config

Use the `<taglib-config>` element to specify the component tags that must be persisted by default. This element is relevant only when you define change persistence using `<persistent-change-manager>` in your `adf-config.xml` file.

When you add Composer components to the page, the `adf-config.xml` file is populated with the `<taglib-config>` element containing a list of tags and attributes that must be persisted. You can add more elements and attributes to the default list.

For more information about this element, see *Fusion Developer's Guide for Oracle Application Development Framework*.

Insert the `<taglib-config>` element within the `<adf-faces-config>` section. The `<taglib-config>` element appears as shown in the following example:

```
<adf-faces-config xmlns="http://xmlns.oracle.com/adf/faces/config">
  . . .
  <taglib-config>
    <taglib uri="http://xmlns.oracle.com/adf/faces/customizable">
      <tag name="showDetailFrame">
        <persist-operations>all</persist-operations>
        <attribute name="expansionMode">
          <persist-changes>true</persist-changes>
        </attribute>
        <attribute name="contentStyle">
          <persist-changes>true</persist-changes>
        </attribute>
      </tag>
      <tag name="panelCustomizable">
        <persist-operations>all</persist-operations>
      </tag>
    </taglib>
  </taglib-config>
</adf-faces-config>
```

For more information, see Section 20.11, "Configuring the Persistence Change Manager."

B.2.2.15 security-config

Use this to override Composer-specific security configurations, specifically if you want to override the default security policies with application-level checks. Insert the `<pe:security-config>` element inside the `<pe:page-editor-config>` section. Within the `security-config` element, you can define `<pe:security-policies>`, `<pe:security-policy>`, `<pe:policy-class>`, and `<pe:task-flow-security>` elements.

security-policies

Use this to encompass all the security policies and policy overrides for Composer. You can have only one `<pe:security-policies>` element under the `<pe:page-editor-config>` section.

security-policy

Use this to override an existing policy. Add one `<pe:security-policy>` element for each policy that you want to override.

The `<pe:security-policy>` element supports the `name` and `override` attributes, where `name` is used to specify a name with which to register the custom policy and `override` is used to specify the name of the default policy that you want to override.

policy-class

Use this to specify the name of the custom security policy.

task-flow-security

Use this element, along with the `check-permission` attribute, to enable Composer to check for a task flow's permissions so that only users with appropriate privileges are allowed to edit or customize the task flow at runtime.

For more information, see Section 22.6, "Implementing Task Flow Security."

B.2.2.16 Sample adf-config.xml File

Example B–2 shows a sample `adf-config.xml` file with Composer-specific configurations.

Example B–2 Sample adf-config.xml File with Composer-Specific Configurations

```
<?xml version="1.0" encoding="windows-1252" ?>
<adf-config xmlns="http://xmlns.oracle.com/adf/config"
            xmlns:adf="http://xmlns.oracle.com/adf/config/properties"
            xmlns:mdsC="http://xmlns.oracle.com/adf/mds/config">
  <adf:adf-properties-child xmlns="http://xmlns.oracle.com/adf/config/properties">
    <adf-property name="adfAppUID" value="configfilesapp-7198"/>
  </adf:adf-properties-child>

  <mdsC:adf-mds-config version="11.1.1.000">
    <mds-config xmlns="http://xmlns.oracle.com/mds/config">
      <persistence-config>
        <metadata-namespaces>
          <namespace path="/oracle/adf/rc/metadata"
                     metadata-store-usage="WebCenterFileMetadataStore"/>
          <namespace path="/persdef/"
                     metadata-store-usage="WebCenterFileMetadataStore"/>

          <!-- Namespace definitions for Composer sandbox -->
          <!-- Your jspx customizations alone go here -->
          <namespace path="/pages"
metadata-store-usage="WebCenterFileMetadataStore">
            <namespace-restriction type="CUSTOMIZATIONS"/>
          </namespace>
          <!-- Your pagedef customizations alone go here -->
          <namespace path="/pageDefs"
metadata-store-usage="WebCenterFileMetadataStore">
            <namespace-restriction type="CUSTOMIZATIONS"/>
          </namespace>
        </metadata-namespaces>
        <metadata-store-usages>
          <metadata-store-usage id="WebCenterFileMetadataStore"
                                default-cust-store="true">
            <metadata-store
class-name="oracle.mds.dt.persistence.stores.file.SrcControlFileMetadataStore">
              <property name="metadata-path" value="../../mds"/>
            </metadata-store>
          </metadata-store-usage>
        </metadata-store-usages>
      </persistence-config>
      <cust-config>
        <match>
          <customization-class name="oracle.adf.share.config.SiteCC"/>
        </match>
      </cust-config>
      <cache-config>
        <max-size-kb>100000</max-size-kb>
      </cache-config>

      <!-- Registration of a standalone XML file used for type-level customization
policies -->
      <type-config>
        <standalone-definitions>
          <file>Directory_Name/standalone.xml</file>
        </standalone-definitions>
      </type-config>
    </mds-config>
  </mdsC:adf-mds-config>

  <pe:page-editor-config xmlns="http://xmlns.oracle.com/adf/pageeditor/config">

    <!-- Composer add-on panel configuration -->
    <pe:addon-panels>
      <pe:addon-panel name="oracle.adf.pageeditor.addonpanels.page-settings" />
      <pe:addon-panel name="oracle.adf.pageeditor.addonpanels.page-reset" />
      <pe:addon-panel name="oracle.fod.custom.panel" />
    </pe:addon-panels>

    <!-- Composer sandbox configuration -->
    <pe:sandbox-namespaces>
      <pe:namespace path="/pages"/>
      <pe:namespace path="/pageDefs"/>
    </pe:sandbox-namespaces>

    <!-- ComposerSessionOptionsFactory class registration for implementing
customization layers -->

<pe:session-options-factory>view.AppsSessionOptionsFactoryImpl</pe:session-options
-factory>

    <!-- Resource string editor configuration -->
    <pe:resource-string-editor>
      <pe:enabled>true</pe:enabled>
    </pe:resource-string-editor>

    <!-- Switch to enable or disable Composer Source view -->
    <pe:enable-source-view>false</pe:enable-source-view>

  </pe:page-editor-config>

  <!-- Multiple resource catalog configuration -->
  <rcv-config xmlns="http://xmlns.oracle.com/adf/rcs/viewer/adf-config">
    <catalog-selector class-name="webcenter.CatalogSelector"/>
    <default-catalog catalog-name="users-catalog"/>
  </rcv-config>

  <!-- Composer and WebCenter Portal Customizable Components actions security
configuration -->
  <cust:customizableComponentsSecurity
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
    <cust:enableSecurity value="true"/>
    <cust:actionsCategory>
      <cust:actionCategory name="personalizeActionsCategory" value="false"/>
      <cust:actionCategory name="editActionsCategory" value="true"/>
    </cust:actionsCategory>
    <cust:actions>
      <cust:action name="showMinimizeAction" value="true"/>
      <cust:action name="showMoveAction" value="false"/>
    </cust:actions>
  </cust:customizableComponentsSecurity>

  <adf-faces-config xmlns="http://xmlns.oracle.com/adf/faces/config">

    <!-- Composer persistence change manager configuration -->
      <persistent-change-manager>

<persistent-change-manager-class>oracle.adf.view.rich.change.MDSDocumentChangeMana
ger</persistent-change-manager-class>
      </persistent-change-manager>

    <!-- Composer default persistence configuration -->
    <taglib-config>
      <taglib uri="http://xmlns.oracle.com/adf/faces/customizable">
        <tag name="showDetailFrame">
          <persist-operations>all</persist-operations>
          <attribute name="expansionMode">
            <persist-changes>true</persist-changes>
          </attribute>
          <attribute name="contentStyle">
            <persist-changes>true</persist-changes>
          </attribute>
        </tag>
        <tag name="panelCustomizable">
          <persist-operations>all</persist-operations>
        </tag>
      </taglib>
    </taglib-config>
  </adf-faces-config>
</adf-config>
```

B.2.3 adf-settings.xml

The adf-settings.xml file, in addition to holding generic project- and library-level settings, can also be used to define custom actions on task flows. This section describes the adf-settings.xml configurations specific to Composer.

B.2.3.1 custComps-config

Use the custComps-config element to define custom actions on task flows consumed in the application. At runtime, the custom actions configurations in the application's adf-config.xml and adf-settings.xml files are picked up and appropriate actions are displayed on the Show Detail Frame component surrounding a task flow. For more information, see Section 20.3, "Enabling Custom Actions on a Task Flow."

Insert the custComps-config element within the adf-settings tag. Within the custComps-config element, you can specify the customActions element.

customActions

Use the customActions element in the adf-settings.xml file to define actions that you want to display on task flows. The custom actions defined here will be displayed along with the other actions on the surrounding Show Detail Frame component. You must add only one customActions element inside the custComps-config section. Within the customActions element you can add any number of customAction elements to define individual custom actions, as shown in the following example:

```
  <customActions>
   <customAction action="next" location="chrome"
                 rendered="true"
                 icon="/adf/webcenter/editheader_ena.png"
                 text="Next"

taskFlowId="/WEB-INF/task-flow-definition.xml#task-flow-definition"
                 shortDesc="next"/>
    <customAction action="prev" location="chrome"
                 rendered="true"
                 icon="/adf/webcenter/editheader_ena.png"
                 text="Previous"
 taskFlowId="/WEB-INF/task-flow-definition.xml#task-flow-definition"
                 shortDesc="prev"/>
  </customActions>
```

B.2.4 web.xml

The web.xml file is a Java EE standard descriptor that contains details about web applications. When you add a Page Customizable component to your page, the web.xml file available in the *Application_Root**Project_Name*\public_html\WEB-INF directory is updated to enable change persistence among other settings.

You must update web.xml further when creating an application that uses multiple customization layers and when enabling Composer sandbox. The following sections describe the web.xml configurations specific to Composer.

B.2.4.1 CHANGE_PERSISTENCE Context Parameter

The CHANGE_PERSISTENCE context parameter in the application's web.xml file specifies how application customizations are persisted. To enable changes in a Composer-enabled page to be persisted in MDS, you must ensure that the CHANGE_PERSISTENCE context parameter is set to ComposerChangeManager, as shown in the following example:

```
<context-param>
  <param-name>org.apache.myfaces.trinidad.CHANGE_PERSISTENCE</param-name>

<param-value>oracle.adf.view.page.editor.change.ComposerChangeManager</param-value
>
</context-param>
```

This context parameter registers the ChangeManager class to be used to ensure persistence to MDS. This configuration happens automatically when you add a Page Customizable component to a page in a new Portal Framework application. However, in an existing ADF application, this context parameter may be set to some other value, for example session or oracle.adf.view.rich.change.FilteredPersistenceChangeManager. Therefore, when you add Composer components to such an application, you must ensure that the CHANGE_PERSISTENCE parameter is set to ComposerChangeManager.

For more information, see Section 20.11, "Configuring the Persistence Change Manager."

B.2.4.2 WebCenterComposerFilter

Use WebCenterComposerFilter in the web.xml file to register Composer's ComposerSessionOptionsFactory with Oracle ADF for every HTTP request. The request is then handled depending on your implementation of ComposerSessionOptionsFactory. This filter can be defined as shown in the following example:

```
<filter-mapping>
<filter-name>WebCenterComposerFilter</filter-name>
  <url-pattern>/faces/*</url-pattern>
  <dispatcher>FORWARD</dispatcher>
  <dispatcher>REQUEST</dispatcher>
</filter-mapping>
```

You must use WebCenterComposerFilter if you are performing the following tasks:

- Creating customization layers. For information, see Section 21.3, "Adding Customization Layers to View and Edit Modes: Example."
- Enabling sandbox creation in Composer. For more information, see Section 21.2.1, "How to Enable Composer Sandbox Creation."

B.3 Composer Default Add-Ons and Property Panels

This section lists the add-ons and property panels available by default in Composer.

B.3.1 Default Add-Ons

This section lists the add-ons available in Composer and provides the names with which these add-ons are registered in the adf-config.xml file. It is useful to know these names as you will need them to enable or disable the display of the add-ons in your application.

- **Page Properties**

  Used to edit page properties and create page parameters.

  This add-on is registered with the name oracle.adf.pageeditor.addonpanels.page-settings in the adf-config.xml file.

- **Reset Page**

  Used to reset page customizations.

  This add-on is registered with the name oracle.adf.pageeditor.addonpanels.page-reset in the adf-config.xml file.

- **Customization Manager**

  Used to manage customizations made to pages and task flows.

  This add-on is registered with the name oracle.adf.pageeditor.addonpanels.customization-manager in the adf-config.xml file.

The Page Properties and Reset Page add-ons are rendered by default. If you create custom add-ons in your application, while registering those add-ons in adf-config.xml, you must also include the entries for the default add-ons. Without these, the default add-ons are not displayed in Composer. For information about add-ons, see Section 19.2, "Creating Composer Add-Ons."

B.3.2 Default Property Panels

This section lists the property panels available by default in the Component Properties and Page Properties dialogs and provides the names with which these panels are registered in the `pe_ext.xml` file. These names are useful if you choose to override the default panels with custom property panels, or hide some or all of the default panels. You can also enable specific panels for display in Composer Add Content or Design view; for details, see Section 19.11, "Enabling Direct Select in Design or Add Content View."

For information about creating property panels, see Section 19.3, "Creating Custom Property Panels."

- **Display Options**

  Used to define display-related behavior of a component. This panel is displayed in the Component Properties dialog for all components.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.generic-property-inspector`.

- **Display Options (Show Detail Frame)**

  Used to define display-related behavior of a `Show Detail Frame` component. This panel is displayed in the Component Properties dialog for a `Show Detail Frame` component only.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.sdfprop`.

- **Tabs**

  Used to define the display properties and order of tabs on a `Panel Customizable` or `Box` component. This panel is displayed in the Component Properties dialog for a `Panel Tabbed` or `Panel Customizable` component. The panel is displayed for a `Panel Customizable` component only if the component has tabs on it.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.panel-tabbed`.

- **Style**

  Used to define the appearance of the component instance. This panel is displayed in the Component Properties dialog for all components.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.inline-style-editor`.

- **Content Style**

  Used to define the appearance of content inside a component instance. This panel is displayed in the Component Properties dialog for all components.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.content-style-editor`.

- **Events**

  Used to wire a contextual event to an action handler to enable the passing of values from a producer component to a consumer component when the event is triggered on the producer. This panel displays in the Component Properties dialog for all components.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.events`.

- **Region Parameters**

  Used to define parameters for the task flow region. This panel displays in the Component Properties dialog only for task flow regions.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.region-param`.

- **Portlet Parameters**

  Used to define portlet parameters. This panel displays in the Component Properties dialog only for portlets.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.portlet-param`.

- **Layout Customizable**

  Used to define the layout for page components by selecting from a set of predefined layouts. This panel displays in the Component Properties dialog only for `Layout Customizable` components.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.layout-cust-prop`.

- **Child Components**

  Used to rearrange and show or hide child components inside a `Panel Customizable` component. This panel displays only for `Panel Customizable` components

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.adf.pageeditor.pane.child-navigator`.

- **Page Parameters**

  Used to define the page parameters that can be wired to components on the page. This panel displays in the Page Properties dialog.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.webcenter.page.pane.page-param`.

- **Page Security**

  Used to define page permissions. This panel displays in the Page Properties dialog for secured application pages.

  In the `pe_ext.xml` file, this panel is referenced with the name `oracle.webcenter.page.pane.page-sec`.

B.4 Composer Components Style-Specific Properties

This section includes a series of tables that describe the style selectors associated with Composer components. Additionally, it describes how to use the `background` property to choose one of three skin-defined looks for these components.

This section contains the following subsections:

- Section B.4.1, "Style Selectors for Composer Components"
- Section B.4.2, "Style Attributes"

B.4.1 Style Selectors for Composer Components

Use a style selector to describe an element's appearance by identifying the element and defining styles for it.

This section contains the following subsections:

- Global Style Selectors
- Composer Status Indicator Style Selectors
- Page Customizable Style Selectors
- Layout Customizable Style Selectors
- Panel Customizable Style Selectors
- Show Detail Frame Style Selectors

B.4.1.1 Global Style Selectors

Use global style selectors to define styles for multiple components within the application. Table B–17 lists and describes the global style selectors relevant to Composer components.

Table B–17 Global Style Selectors

Style Selector	Description
`.ComposerDark:alias`	Specifies the default color for toolbars, headers, and so on in Composer, with a color scheme of *dark*.
`.ComposerLight:alias`	Specifies the default color for toolbars, headers, and so on in Composer, with a color scheme of *light*.
`.ComposerBackground`	Specifies the color scheme for Composer dialogs, such as the Component Properties and Page Properties dialogs.
`.ComposerBorder`	Specifies the border, width, and so on for Composer dialogs, such as the Component Properties and Page Properties dialogs.
`.PEClickableImageAnchor:alias`	An alias for rendering a clickable icon in a table cell. Specifies the CSS properties needed to display an image which is clickable and which has inline-mode display. For example, you can specify this as a common property for all action icons on a `Show Detail Frame` header. By default, this alias is included in style selectors that use 16x16 images and have to display inline background-images for both IE and Firefox. To customize, you can include this alias in your selector and override its properties. For example, you can change font-size and padding-right for an image with different height and width, or you can set "display: block" with height, width attributes to display in block mode.
`.ChildPanelFacetWarning`	Specifies the style for the warning message displayed in the child navigator in the Component Properties dialog.

B.4.1.2 Composer Status Indicator Style Selectors

Use the style selectors in Table B–18 to skin the status indicator component in the Composer toolbar.

Table B–18 Status Indicator Style Selectors

Style Selector	Description
af|statusIndicator.ComposerStatus	Specifies the style for the status indicator component. You can use this to specify a fixed height for the status indicator.
af|statusIndicator.ComposerStatus::idle-icon	Specifies the icon that represents the idle state. This icon is generally a non-animated icon that indicates communication is NOT occurring with the server.
af|statusIndicator.ComposerStatus::processing-icon	Specifies the icon that represents the processing state. This icon is generally an animated icon that indicates communication IS occurring with the server.
af|statusIndicator.ComposerStatus::connecting-icon	Specifies the icon that displays when the Active Data Service is in the process of connecting. This icon is generally an animated icon.
af|statusIndicator.ComposerStatus::connected-icon	Specifies the icon that displays when the Active Data Service is in the connected state. This icon is generally a non-animated icon and may be the same as the idle state icon.
af|statusIndicator.ComposerStatus::reconnecting-icon	Specifies the icon that displays when the Active Data Service has lost connection and is attempting to reconnect. This icon is generally an animated icon.
af|statusIndicator.ComposerStatus::disconnected-icon	Specifies the icon that displays when the Active Data Service is in the disconnected state. This icon is generally a non-animated icon used to indicate that no further reconnection attempts will be made without use interaction.

B.4.1.3 Page Customizable Style Selectors

Use the style selectors in Table B–19 to skin `Page Customizable` components.

Table B–19 Page Customizable Style Selectors

Style Selector	Description
af|pageCustomizable	Specifies the default size of a `Page Customizable` component when not being stretched by its parent container.
af|pageCustomizable af|toolbox.ComposerToolbox	Specifies the style for the main dark gray toolbar displayed in Edit mode. This toolbar contains a message about the page being edited and the various buttons.
af|pageCustomizable af|toolbox.ComposerToolbox af|panelGroupLayout.ComposerConcurrency	Specifies the style for the concurrency toolbar that appears below the main Composer toolbar when two or more users are editing a page at the same time in the same customization layer.
af|pageCustomizable af|toolbox.ComposerToolbox af|toolbar af|pageCustomizable af|toolbox.ComposerToolbox af|toolbar::separator af|pageCustomizable af|toolbox.ComposerToolbox af|toolbox::body af|pageCustomizable af|toolbox.ComposerToolbox af|toolbox::body af|toolbox::row af|pageCustomizable af|toolbox.ComposerToolbox af|toolbox::body af|toolbox::last-row af|pageCustomizable af|toolbox.ComposerToolbox af|toolbox::body af|toolbox::row af|toolbox::leading-cell	Specifies the styles for the different areas in the toolbar.

Table B–19 (Cont.) Page Customizable Style Selectors

Style Selector	Description

`af|pageCustomizable af|toolbox.ComposerToolbox af|commandToolbarButton::text`
`af|pageCustomizable af|toolbox.ComposerToolbox af|commandToolbarButton:hover`
`af|pageCustomizable af|toolbox.ComposerToolbox af|commandToolbarButton:depressed`
	Specify the styles for the Composer toolbar buttons such as Page Properties and Reset Page.

`af|pageCustomizable af|toolbox.ComposerToolbox af|menuBar::body`
`af|pageCustomizable af|toolbox.ComposerToolbox af|menuBar::body:rtl`
	Specifies the style for the body of the View menu on the toolbar.

`af|pageCustomizable af|toolbox.ComposerToolbox af|menuBar af|menu::bar-item-text`	Specifies the style for the text on the View menu.
`af|pageCustomizable af|toolbox.ComposerToolbox af|menuBar af|menu::bar-item:highlighted`	Specifies the style for the View menu when the mouse hovers over it.
`af|pageCustomizable af|toolbox.ComposerToolbox af|menuBar af|menu::bar-item:depressed`	Specifies the style for the View menu when it is clicked.
`af|pageCustomizable af|toolbox.ComposerToolbox af|menuBar af|menu::bar-item-open-icon-style`	Specifies the style for the dropdown icon appearing on the View menu.
`af|pageCustomizable af|toolbox.ComposerToolbox af|menuBar af|menu:depressed af|menu::bar-item-open-icon-style`	Specifies the style for the dropdown icon when it is clicked on the View menu.
`af|pageCustomizable af|toolbox.ComposerToolbox af|menuBar af|menu:highlighted af|menu::bar-item-open-icon-style`	Specifies the style for the dropdown icon when the mouse hovers over it.
`af|pageCustomizable af|toolbar.SourceView`	Specifies the style for the toolbar in Composer Structure view.
`af|pageCustomizable af|toolbar.SourceView af|menuBar`	Specifies the style for the menu bar in Structure view.

`af|dialog.ComposerDialog::content-start`
`af|dialog.ComposerDialog::content-start:rtl`
`af|dialog.ComposerDialog::content`
`af|dialog.ComposerDialog::content:rtl`
`af|dialog.ComposerDialog::content-end`
	Specify the styles for the dialogs invoked using Composer toolbar buttons. Available alias is `:rtl`, which can be used when the component must be rendered right-to-left.

`af|pageCustomizable af|breadCrumbs.ComposerBreadcrumbs`
`af|pageCustomizable af|breadCrumbs.ComposerBreadcrumbsHidden:step`
	Specify the styles for Composer breadcrumbs.

`af|pageCustomizable:edit af|panelGroupLayout.ComposerSplitHorz`
`af|pageCustomizable:edit af|panelGroupLayout.ComposerSplitVert`
	Specifies the style for `Panel Customizable` components that are split horizontally or vertically. Typically, these selectors are used to specify the height in case of a horizontal split, or width in case of a vertical split.

Table B–19 (Cont.) Page Customizable Style Selectors

Style Selector	Description
af|pageCustomizable:edit, af|pageCustomizable:stretched	Specifies the style for the Page Customizable component in Edit mode. This selector ensures that in Edit mode, a Page Customizable always stretches. In View mode, it will flow if being flowed, or stretch if being stretched.
af|pageCustomizable:printable	Specifies the style for the Page Customizable in printable mode. It suppresses the height and width of the Page Customizable.
af|pageCustomizable af|panelGroupLayout.ComposerCutComp af|tree::node-stamp-text	Specifies the style for the dotted line border around components that are cut.

B.4.1.4 Layout Customizable Style Selectors

Use the style selectors in Table B–20 to skin `Layout Customizable` components.

Table B–20 Layout Customizable Style Selectors

Style Selector	Description
af|layoutCustomizable::menu:edit	Specifies the style for the **Change Layout** button in Edit mode.
af|layoutCustomizable::menu:edit af|commandImageLink::text af|layoutCustomizable::menu:edit af|commandImageLink::text:hover	Specify the styles for the text on the **Change Layout** button in Edit mode.
af|layoutCustomizable.AFStretchWidth	Specifies the width to which the component can stretch horizontally.

B.4.1.5 Panel Customizable Style Selectors

Use the style selectors listed in Table B–21 to skin `Panel Customizable` components.

Note: Some style selectors in Table B–21 have three color-scheme selections: *light*, *medium*, and *dark*. Using these you can define three distinct looks in your CSS and specify which one to use through the `background` property in the JDeveloper Property Inspector. Depending on which value is specified for a component instance's `background` property, the skin applies the relevant style.

Table B–21 Panel Customizable Style Selectors

Style Selector	Description
af|panelCustomizable	Specifies the style for the root element of the component.
af|panelCustomizable.PEStretched	Specifies the style for the component, when it is stretched.
af|panelCustomizable:edit	Specifies the style for the container in Edit mode.
af|panelCustomizable:edit:drop-target	Specifies the style for this component when you drag another component on the page and hover over this component to drop it in.

Table B–21 (Cont.) Panel Customizable Style Selectors

Style Selector	Description
af|panelCustomizable::edit-mode-content-style	Specifies the style for the area containing the Edit and Delete icons.
af|panelCustomizable::add-icon-style af|panelCustomizable::add-icon-style:active af|panelCustomizable::add-icon-style:hover af|panelCustomizable::add-icon-style:rtl	Specify the styles for the Add Content button on the component.
af|panelCustomizable::edit-icon-style af|panelCustomizable::edit-icon-style:active af|panelCustomizable::edit-icon-style:hover	Specify the styles for the Edit icon on the component.
af|panelCustomizable::delete-icon-style af|panelCustomizable::delete-icon-style:active af|panelCustomizable::delete-icon-style:hover	Specify the styles for the Delete icon on the component.
.PanelCustomizableDropProxy	Specifies the style for the placeholder area inside this component when you drag another component on the page and hover over this component to drop it in.
af|panelCustomizable:edit:inline-selected .p_AFActiveInlineEditableContainer af|panelCustomizable:edit:hover-target	Specifies the styles for the components in the inline editable subtree in the `Panel Customizable` component.
af|panelCustomizable::add-icon-link af|panelCustomizable::add-icon-link:active af|panelCustomizable::add-icon-link:hover	Specify the styles for the Add icon in the `Panel Customizable` component.
af|panelCustomizable::addtab-icon-style af|panelCustomizable::addtab-icon-style:active af|panelCustomizable::addtab-icon-style:hover	Specify the styles for the Add Tab icon in the `Panel Customizable` component.
af|panelCustomizable::split-up-icon-style af|panelCustomizable::split-up-icon-style:active af|panelCustomizable::split-up-icon-style:hover af|panelCustomizable::split-down-icon-style af|panelCustomizable::split-down-icon-style:active af|panelCustomizable::split-down-icon-style:hover af|panelCustomizable::split-left-icon-style af|panelCustomizable::split-left-icon-style:active af|panelCustomizable::split-left-icon-style:hover af|panelCustomizable::split-right-icon-style af|panelCustomizable::split-right-icon-style:active af|panelCustomizable::split-right-icon-style:hover	Specify styles for the icons available on a `Panel Customizable` component to split it horizontally and vertically.
.PanelCustomizableDropProxy	Specifies the style for a component being dragged and dropped inside a `Panel Customizable` component.

B.4.1.6 Show Detail Frame Style Selectors

Use the style selectors listed in Table B–22 to skin portlets and `Show Detail Frame` components.

In Portal Framework applications, each portlet is rendered with portlet *chrome*. The portlet chrome shares the same chrome rendering mechanism as a `Show Detail Frame` component. Thus, the style and icon selectors that apply to `Show Detail Frame` also apply to the portlet chrome. In other words, in addition to defining styles for `Show Detail Frame` components, use `Show Detail Frame` style and icon selectors to define styles for portlets.

> **Note:** Some `Show Detail Frame` style selectors in Table B–22 have *light*, *medium*, *dark*, and *core:default* color scheme options. Using these you can define four distinct looks in your CSS and specify which one to use through the `background` property in the JDeveloper Property Inspector. Depending on which value is specified for a component instance's `background` property, the skin applies the relevant style.

Table B–22 Show Detail Frame Style Selectors

Style Selector	Description
`af|showDetailFrame`	Specifies the style for the root element of the component.

`af|showDetailFrame::container:light`
`af|showDetailFrame::container:medium`
`af|showDetailFrame::container:dark`
`af|showDetailFrame::container:core:default`
	Specify the styles for the element containing the contents within the component.

`af|showDetailFrame.p_AFStretched`	Specifies the style for the root element when the component is stretched.

`af|showDetailFrame::content`
`af|showDetailFrame::content:light`
`af|showDetailFrame::content:medium`
`af|showDetailFrame::content:dark`
`af|showDetailFrame::content:core:default`
	Specify the styles to render for the content region of the component.

`af|showDetailFrame::header`
`af|showDetailFrame::header:light`
`af|showDetailFrame::header:medium`
`af|showDetailFrame::header:dark`
`af|showDetailFrame::header:core:default`
	Specify the styles for the header element. This element surrounds the header text, icon, and actions regions.

`af|showDetailFrame::header-center`
`af|showDetailFrame::header-center:light`
`af|showDetailFrame::header-center:medium`
`af|showDetailFrame::header-center:dark`
`af|showDetailFrame::header-center:core:default`
	Specify the styles for the region on the component header containing the icons, title, and actions menu.

`af|showDetailFrame::header-start`
`af|showDetailFrame::header-start:rtl`
`af|showDetailFrame::header-start:light`
`af|showDetailFrame::header-start:light:rtl`
`af|showDetailFrame::header-start:medium`
`af|showDetailFrame::header-start:medium:rtl`
`af|showDetailFrame::header-start:dark`
`af|showDetailFrame::header-start:dark:rtl`
`af|showDetailFrame::header-start:core:default`
`af|showDetailFrame::header-start:core:default:rtl`
	Specify the styles for the small cap-like area at the start of the header. Available alias is `:rtl`, which can be used when the component must be rendered right-to-left.

Table B–22 (Cont.) Show Detail Frame Style Selectors

Style Selector	Description
af|showDetailFrame::header-end af|showDetailFrame::header-end:rtl af|showDetailFrame::header-end:light af|showDetailFrame::header-end:light:rtl af|showDetailFrame::header-end:medium af|showDetailFrame::header-end:medium:rtl af|showDetailFrame::header-end:dark af|showDetailFrame::header-end:dark:rtl af|showDetailFrame::header-end:core:default af|showDetailFrame::header-end:core:default:rtl	Specify the styles for the small cap-like area at the end of the header. Available alias is `:rtl`, which can be used when the component must be rendered right-to-left.
af|showDetailFrame::footer-start af|showDetailFrame::footer-start:rtl af|showDetailFrame::footer-start:light af|showDetailFrame::footer-start:light:rtl af|showDetailFrame::footer-start:medium af|showDetailFrame::footer-start:medium:rtl af|showDetailFrame::footer-start:dark af|showDetailFrame::footer-start:dark:rtl af|showDetailFrame::footer-start:core:default af|showDetailFrame::footer-start:core:default:rtl	Specify the styles for the small cap-like area at the start of the footer. Available alias is `:rtl`, which can be used when the component must be rendered right-to-left.
af|showDetailFrame::footer-center af|showDetailFrame::footer-center:light af|showDetailFrame::footer-center:medium af|showDetailFrame::footer-center:dark af|showDetailFrame::footer-center:core:default	Specify the styles for the central region of the `Show Detail Frame` component's footer element.
af|showDetailFrame::footer-end af|showDetailFrame::footer-end:rtl af|showDetailFrame::footer-end:light af|showDetailFrame::footer-end:light:rtl af|showDetailFrame::footer-end:medium af|showDetailFrame::footer-end:medium:rtl af|showDetailFrame::footer-end:dark af|showDetailFrame::footer-end:dark:rtl af|showDetailFrame::footer-end:core:default af|showDetailFrame::footer-end:core:default:rtl	Specify the styles for the small cap-like area at the end of the footer. Available alias is `:rtl`, which can be used when the component must be rendered right-to-left.
af|showDetailFrame::shadowbox af|showDetailFrame::shadowbox:rtl af|showDetailFrame::shadowbox_div1 af|showDetailFrame::shadowbox_div1:rtl af|showDetailFrame::shadowbox_div2 af|showDetailFrame::shadowbox_div2:rtl	Specify styles for the shadow cast by the `Show Detail Frame` component.
af|showDetailFrame::toolbar af|showDetailFrame::toolbar:rtl	Specifies the styles for a floating toolbar on the `Show Detail Frame` component.
af|showDetailFrame::icon-style	Specifies the style for the icon on the `Show Detail Frame` header, if the `icon` attribute is set on the component.
af|showDetailFrame::header-text af|showDetailFrame::header-text:rtl	Specifies the style for the title available on the component header. Available alias is `:rtl`, which can be used when the component must be rendered right-to-left.
af|showDetailFrame::header-actions	Specifies the style for icons such as delete and the actions menu on the component header.

Table B–22 (Cont.) Show Detail Frame Style Selectors

Style Selector	Description
af|showDetailFrame::toolbar-container af|showDetailFrame::toolbar-container:light af|showDetailFrame::toolbar-container:medium af|showDetailFrame::toolbar-container:dark af|showDetailFrame::toolbar-container:core:default	Specify styles for the container element of the floating toolbar. Available aliases are `:light`, `:medium`, and `:dark`.
af|showDetailFrame::collapse-icon-style af|showDetailFrame::collapse-icon-style:active af|showDetailFrame::collapse-icon-style:hover af|showDetailFrame::collapse-icon-style.PEDisplayNone	Specify styles for the Collapse icon on the component header. Available aliases are `:active` and `:hover` that you can use to specify styles for the Collapse icon when clicked or when the mouse hovers over it. You can use `PEDisplayNone` to hide the Collapse icon.
af|showDetailFrame::disclose-icon-style af|showDetailFrame::disclose-icon-style:active af|showDetailFrame::disclose-icon-style:hover af|showDetailFrame::disclose-icon-style.PEDisplayNone	Specify the styles for the Disclose icon on the component header. You can use `PEDisplayNone` to hide the Disclose icon.
af|showDetailFrame::actionmenu-icon-style af|showDetailFrame::actionmenu-icon-style:active af|showDetailFrame::actionmenu-icon-style:hover	Specify the styles for the action menu icon. This style has a background-image that you can override.
af|showDetailFrame::remove-icon-style af|showDetailFrame::remove-icon-style:active af|showDetailFrame::remove-icon-style:hover	Specify the styles for the Delete icon.
af|showDetailFrame::edit-icon-style af|showDetailFrame::edit-icon-style:active af|showDetailFrame::edit-icon-style:hover	Specify the styles for the Edit icon.
af|showDetailFrame::preview-icon-style af|showDetailFrame::preview-icon-style:active af|showDetailFrame::preview-icon-style:hover	Specify styles for the Preview icon.
af|showDetailFrame::edit-mode-content-style af|showDetailFrame::edit-mode-content-style:light	Specify the styles for the area that contains the edit and remove icons.
af|showDetailFrame::edit-mode-edit-icon-style af|showDetailFrame::edit-mode-edit-icon-style:active af|showDetailFrame::edit-mode-edit-icon-style:hover	Specify the styles for the Edit icon on the component header in Edit mode.
af|showDetailFrame::edit-mode-remove-icon-style af|showDetailFrame::edit-mode-remove-icon-style:active af|showDetailFrame::edit-mode-remove-icon-style:hover	Specify the styles for the Delete icon on the component header in Edit mode.
af|showDetailFrame::edit-text-link af|showDetailFrame::edit-text-link:rtl af|showDetailFrame::edit-text-link:hover	Specify the styles for the Edit Text link in Edit mode when the component includes a Rich Text Editor component as a child.
af|showDetailFrame::resize af|showDetailFrame::resize:rtl	Specifies the style for the resize handler on the component. Available alias is `:rtl`, which can be used when component must be rendered right-to-left.

Table B–22 (Cont.) Show Detail Frame Style Selectors

Style Selector	Description
af|showDetailFrame::content.PEWrapsRTE > af|richTextEditor af|toolbox > af|toolbox::body, af|showDetailFrame::content.PEWrapsRTE > af|richTextEditor af|toolbox > af|toolbox::body > af|toolbox::row, af|showDetailFrame::content.PEWrapsRTE > af|richTextEditor af|toolbox > af|toolbox::body > af|toolbox::last-row, af|showDetailFrame::content.PEWrapsRTE > af|richTextEditor af|richTextEditor::content-input-container af|showDetailFrame::content.PEWrapsRTE > af|richTextEditor af|richTextEditor::content-input, af|showDetailFrame::content.PEWrapsRTE > af|richTextEditor af|richTextEditor::content-input-container af|showDetailFrame::content:medium.PEWrapsRTE af|showDetailFrame::content:light.PEWrapsRTE af|showDetailFrame::content.PEWrapsRTE > af|richTextEditor af|toolbox	Specify styles for the areas surrounding and inside a nested Rich Text Editor component. For example, to ensure that the background color of the Rich Text Editor component is transparent in Edit mode, or to provide borders around the component.
af|showDetailFrame::content.PEStretched	Specifies the height when the `Show Detail Frame` component stretches its content.
af|showDetailFrame::content.PEStretched:printable	Ensures that the `Show Detail Frame` does not restrict the height of its content in printable mode.
af|showDetailFrame::dynamic-help-icon-container af|showDetailFrame::dynamic-help-icon-container:rtl	Specifies the styles for the help icon container on the component header.
af|showDetailFrame::dynamic-help-icon-style af|showDetailFrame::dynamic-help-icon-style:active af|showDetailFrame::dynamic-help-icon-style:hover	Specify the styles for the help icon on the component header.
.PEShowDetailFrameAnimIcon	Specifies the animation icon to be used to show busy status on the component, for example, when you expand it.
.PEIconAndTextInHeading:alias .PEIconAndTextInHeading:alias:rtl	Specify the styles for rendering an icon with text in the component header.

B.4.2 Style Attributes

Table B–23 provides a quick reference for the style attributes available for WebCenter Portal Customizable Components and Composer components through the JDeveloper Property Inspector. Note that portlets also use these style attributes.

For detailed information about style properties, see the CSS Specifications page at:

http://www.w3.org/TR/CSS21/

Table B–23 Style Attributes of Composer and WebCenter Portal Customizable Components

Attribute	Description
`background-color`	The background color of the component. Choose from a list of colors, or click the Edit icon to select from a color palette.
`background-image`	The image that is displayed in the component background. Select to inherit from a parent component or to display no image, or click the Edit icon to select an image.
`background-repeat`	Specify whether and how the background image should repeat. Choose from: ■ `<none>`: Forgo repeating the image. ■ `no-repeat`: Forgo repeating the image. ■ `repeat`: Repeat the image to fill the container. ■ `repeat-x`: Repeat the image horizontally but not vertically. ■ `repeat-y`: Repeat the image vertically but not horizontally. ■ `inherit`: Inherit this setting from a parent component.
`border-color`	The color of the border that surrounds the component. Choose from a list of colors, or click the Edit icon to select from a color palette.
`border-style`	The style of border to draw around the component. Choose from: ■ `<none>`: Apply no style to the border. ■ `none`: Do not display a border (use `border-style:none` on the `ContentStyle` property to turn off portlet borders. Using this attribute with `InlineStyle` does not turn off portlet borders.) ■ `hidden`: Hide the border. ■ `dotted`: Display the border as a line of dots. ■ `double`: Display the border as a double line. ■ `groove`: Display the border as a grooved line. ■ `ridge`: Display the border as a ridged line. ■ `inset`: Display the border as a concave line. ■ `outset`: Display the border as a convex line. ■ `dashed`: Display the border as a line of dashes. ■ `solid`: Display the border as a solid line. ■ `inherit`: Inherit the border style from a parent component.
`border-width`	The thickness of the component border. Select `thick`, `medium`, `thin`, or `inherit` to determine the thickness of the border or inherit border width from a parent component. Alternatively, click the Edit icon and define a thickness in your preferred unit of measurement.
`color`	The color of the component text. Select from a list, or click the Edit icon to select from a color palette.
`font-family`	The font family (such as Arial, Helvetica, or sans-serif) for the component text. Enter this value manually.

Table B–23 (Cont.) Style Attributes of Composer and WebCenter Portal Customizable Components

Attribute	Description
`font-size`	The size of component text. Choose from: ■ `Choose Length`: Specify an absolute value for the `font-size` in your preferred unit of measurement. ■ `Choose Percentage`: Specify font size as a percentage of the normal text size defined for the browser. ■ `inherit`: Inherit font size from a parent component. ■ `large`: Select the next size larger than the font associated with the parent component. ■ `larger`: Increase the font size to larger than the font associated with the parent component (`larger` is larger than `large`). ■ `medium`: Set the font size to the default font size of the parent component. ■ `small`: Set the font size to smaller than the default font size of the parent component. ■ `smaller`: Set the font size to smaller than the default font size of the parent component (`smaller` is smaller than `small`).
`font-style`	The font style of the component text. Choose from: ■ `<none>`: Apply no style to the font. ■ `normal`: The font is not italic. ■ `italic`: The font is italic. ■ `oblique`: The font is slanted to look italic, though the font family may not have a formal italic member. ■ `inherit`: Inherit font style from a parent component.
`font-weight`	The thickness of the component text. Choose from: ■ `<none>`: Specify no weight for the component text. ■ `normal`: Apply same weight as the parent component's default font weight. ■ `bold`: Set component text in bold. ■ `bolder`: Set component text darker than bold. ■ `light`: Set component text lighter than normal. ■ `lighter`: Set component text lighter than light. ■ `100-900`: Specify a value for text darkness—`100` is lightest and `900` is darkest—`400` is normal weight; `700` is bold. ■ `inherit`: Inherit font weight from a parent component.
`height`	The spacing to apply between lines of continuous text (also known as *leading*). Specify a height by choosing from: ■ `Choose Length`: Specify an absolute value in your preferred unit of measurement. ■ `Choose Percentage`: Specify a value as a percentage of the value set for a parent component. ■ `auto`: Set line height automatically, usually about 2 points larger than font size. ■ `inherit`: Inherit line height from the parent component.
`list-style-image`	An image to use as an indicator of a list item. Specify an image instead of defining a `list-style-type`. Choose from: ■ `inherit`: Inherit a list style image from a parent component. ■ `none`: Use no image as an indicator of a list item. Or click the Edit icon and select an image.

Table B–23 (Cont.) Style Attributes of Composer and WebCenter Portal Customizable Components

Attribute	Description
`list-style-type`	The type of indicator to use for items on a list. Use this instead of specifying a image through `list-style-image`. Select from among many styles offered on the list, including `<none>`, which means the browser's default style is used, and `inherit`, which means the `list-style-type` is inherited from a parent component.
`margin`	The border of space surrounding the component content. Choose from: ■ `Choose Length`: Specify an absolute value for all margins. ■ `Choose Percentage`: Set a value as a percentage of the margin of a parent component. ■ `inherit`: Inherit margin value from a parent component. ■ `auto`: Set the value automatically according to browser defaults.
`padding`	The amount of space between the component and its margin or, if there is a border, between the component and its border. Choose from: ■ `Choose Length`: Specify an absolute value in your preferred unit of measurement. ■ `Choose Percentage`: Specify the value as a percentage of the padding set for a parent component. ■ `inherit`: Inherit the value from a parent component.
`text-align`	The horizontal alignment of the component text. Choose from: ■ `<none>`: Use browser default. ■ `left` ■ `right` ■ `center` ■ `justify`: Align text so that all lines start and end at the same point left and right. ■ `auto`: Apply a value automatically, either left or right. ■ `inherit`: Inherit alignment from a parent component.

Table B–23 (Cont.) Style Attributes of Composer and WebCenter Portal Customizable Components

Attribute	Description
`text-decoration`	The decorative value to apply to component text. Choose from: ■ `<none>`: Use the browser default for hyperlinks; otherwise, no text decoration. ■ `none`: No text decoration, including no underscore for hyperlinks. ■ `underline`: Draw a line under all component text. ■ `overline`: Draw a line over all component text. ■ `line-through`: Draw a line through the middle of all component text. ■ `blink`: Make component text blink. ■ `inherit`: Inherit text decoration from a parent component.
`vertical-align`	The vertical alignment of component text. Choose from: ■ `Choose Length`: Specify an absolute value in your preferred unit of measurement. ■ `Choose Percentage`: Specify a value as a percentage of the value set for a parent component. ■ `inherit`: Inherit the value from a parent component. ■ `baseline`: Set the text on the baseline of the text row. ■ `middle`: Set the text in the middle of the text row. ■ `text-bottom`: Set the text on the bottom of the text row, lower than the baseline. ■ `text-top`: Set the text at the top of the text row, above the baseline. ■ `sub`: Set the text as subscript. ■ `super`: Set the text as superscript.
`width`	The spacing between text. Specify a width by choosing from: ■ `Choose Length`: Specify an absolute value in your preferred unit of measurement. ■ `Choose Percentage`: Specify a value as a percentage of the value set for a parent component. ■ `auto`: Set line height automatically, usually about 2 points larger than font size. ■ `inherit`: Inherit line height from the parent component.

B.5 Customizable Components (HTML) Properties

Customizable Components (HTML) are similar in function to customizable components from the 10.1.3.2.0 release and can be used to add more customizable components to your migrated 10.1.3.2.0 application page. These customizable components are available from the Customizable Components (HTML) tag library in JDeveloper. When you add customizable components to the page, default values are assigned to certain attributes and you can define values for the remaining attributes as required.

Customizable components enable users to minimize or maximize, hide or show, or move any component on the page at runtime.

> **Note:** The Customizable Components (HTML) library is available only to support applications created in release 10.1.3.2.0. Adding these components to new applications is not supported.
>
> It is recommended that you replace Customizable Components (HTML) in existing applications with their rich counterparts (from the Composer tag library) whenever possible.

B.5.1 Panel Customizable (HTML) Component

Use the `Panel Customizable (HTML)` component as a container for page content that can be customized at runtime. Components added inside a `Panel Customizable (HTML)` can be maximized, minimized, or rearranged.

Use this component only to perform runtime customizations on child components. If you just want a container to arrange components at design time, then it is recommended that you use an ADF Faces container like `Panel Group Layout`.

Table B–24 describes the attributes of a `Panel Customizable (HTML)` component.

Table B–24 Attributes of a Panel Customizable (HTML) Component

Attribute	Type	Supports EL?	Description
Common Attributes			
id	String	No	The identifier for the component. The identifier must follow a subset of the syntax allowed in HTML: ■ Must not be a zero-length String. ■ First character must be an ASCII letter (A-Za-z) or an underscore ('_'). ■ Subsequent characters must be an ASCII letter or digit (A-Za-z0-9), an underscore ('_'), or a dash ('-').
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`.

Table B–24 (Cont.) Attributes of a Panel Customizable (HTML) Component

Attribute	Type	Supports EL?	Description
layout	List of values `horizontal/vertical`	Yes	Specifies how the children of the `Panel Customizable` (HTML) are laid out. The default value is `vertical`. Depending on the value of the layout attribute, child components are laid out as follows: If you select `vertical`, then the child components are displayed one below the other and can be moved either up or down within the layout. If you select `horizontal`, then the child components are displayed adjacent to each other and can be moved either to the left or right within the layout.
Style Attributes			
styleClass	String	Yes	A CSS style class to use for this component. The style class can be defined in your JSPX page or in a skinning CSS file, for example.
inlineStyle	String	Yes	The CSS styles to use for this component. This is intended for basic style changes. The `inlineStyle` is a set of CSS styles that are applied to the root DOM element of the component. If the `inlineStyle`'s CSS properties do not affect the DOM element you want affected, then you must create a skin and use the skinning keys which are meant to target particular DOM elements, like `::label` or `::icon-style`.
Advanced Attributes			
binding	String	Yes	An EL reference that stores the component instance in a bean. This can be used to give programmatic access to a component from a backing bean, or to move creation of the component to a backing bean. For example: `binding="#{yourManagedBean.Binding}"`

Table B–24 (Cont.) Attributes of a Panel Customizable (HTML) Component

Attribute	Type	Supports EL?	Description
Customization Attributes			
customizationAllowed	Boolean		Specifies whether customizations are allowed on this component. Available values are `true` and `false`. The default value is `true`.
customizationAllowedBy	String		Specifies the roles for which customization is enabled.
Other Attribute			
customizationId			This attribute has been deprecated. Use the `id` attribute.

B.5.2 Show Detail Frame (HTML) Component

Add `Show Detail Frame (HTML)` components inside `Panel Customizable (HTML)` components to enable user customizations like maximizing, moving, minimizing, restoring, and deleting child components. You can perform these customizations only if you add `Show Detail Frame (HTML)` components inside `Panel Customizable (HTML)` components.

Table B–25 describes the attributes of a `Show Detail Frame (HTML)` component.

Table B–25 Attributes of a Show Detail Frame (HTML) Component

Attribute	Type	Supports EL?	Description
Common Attributes			
id	String	No	The identifier for the component. The identifier must follow a subset of the syntax allowed in HTML: ■ Must not be a zero-length String. ■ First character must be an ASCII letter (A-Za-z) or an underscore ('_'). ■ Subsequent characters must be an ASCII letter or digit (A-Za-z0-9), an underscore ('_'), or a dash ('-').
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`.
text	String	Yes	A title for the `Show Detail Frame` (HTML) component.

Table B–25 (Cont.) Attributes of a Show Detail Frame (HTML) Component

Attribute	Type	Supports EL?	Description

icon	String	Yes	If you want to add an icon on the header of the `Show Detail Frame` component, then this specifies the URI for the image to be used.
			For example:
			`icon="http://source-pc/images/accessability.gif"`
			Note: An image that is stored at the document root does not require a full path. For example:
			`icon="detail.gif"`

Appearance Attributes			
text	String	Yes	A title for the `Show Detail Frame` (HTML) component.
shortDesc	String	Yes	The short description of the component. This text is commonly used by user agents to display tooltip help text, in which case the behavior for the tooltip is controlled by the user agent, for example, Firefox 2 truncates long tooltips. For form components, the `shortDesc` is displayed in a note window.

icon	String	Yes	If you want to add an icon on the header of the `Show Detail Frame` component, then this specifies the URI for the image to be used.
			For example:
			`icon="http://source-pc/images/accessability.gif"`
			Note: An image that is stored at the document root does not require a full path. For example:
			`icon="detail.gif"`

background	List of values `light/medium/dark`	Yes	Working with the skin CSS, provides a means of applying a different look and feel for this `Show Detail Frame (HTML)` instance. The default value is `medium`.

Table B–25 (Cont.) Attributes of a Show Detail Frame (HTML) Component

Attribute	Type	Supports EL?	Description
displayHeader	Boolean	Yes	Indicates whether the header of the `Show Detail Frame` (HTML) is displayed. The default value is `true`. If you set `displayHeader` to `false` and if you have exposed some actions on the component, then a toolbar is displayed when you move the mouse over the component area. The toolbar contains a drop down icon, which displays a menu of available options. This toolbar is rendered only if there are actions available on the component. The toolbar display is also affected by the `isSeededInteractionAvailable` attribute. As the default value for `isSeededInteractionAvailable` is `false`, the toolbar is not displayed. It can be displayed by setting `isSeededInteractionAvailable` to `true`.
expansionMode	List of values `maximized/minimized/normal`	Yes	The default state of the `Show Detail Frame (HTML)`. The default display mode is `normal`.
rendered	Boolean	Yes	Specifies whether the component is rendered. When set to `false`, no output is delivered for this component (the component is not in any way rendered, and cannot be made visible on the client). The default value is `true`.
Actions Attributes			
showMoveAction	List of values `menu/none`	Yes	Specifies whether the Move action is displayed in the Actions menu. The default value is `menu`.
showMinimizeAction	List of values `chrome/none`	Yes	Specifies whether the minimize action is displayed on the header. The default is `chrome`.
showMaximizeAction	List of values `menu/none`	Yes	Specifies whether the minimize action is displayed on the header. The default value is `menu`.
Style Attributes			
contentStyle	String	Yes	The CSS style to apply to the `Show Detail Frame (HTML)` content area. Manually enter any style in compliance with CSS version 2.0 or later.

Table B–25 (Cont.) Attributes of a Show Detail Frame (HTML) Component

Attribute	Type	Supports EL?	Description
styleClass	String	Yes	A CSS style class to use for this component. The style class can be defined in your JSPX page or in a skinning CSS file, for example.
inlineStyle	String	Yes	The CSS styles to use for this component. This is intended for basic style changes. The `inlineStyle` is a set of CSS styles that are applied to the root DOM element of the component. If the `inlineStyle`'s CSS properties do not affect the DOM element you want affected, then you must create a skin and use the skinning keys which are meant to target particular DOM elements, like `::label` or `::icon-style`.
Behavior Attributes			
partialTriggers	String	Yes	The IDs of the components that should trigger a partial update. This component listens on the trigger components. If a trigger component receives an event that causes it to update in some way, this component requests to be updated too. Identifiers are relative to the source component (this component), and must account for NamingContainers. If your component is inside of a naming container, you can use a single colon to start the search from the root of the page, or multiple colons to move up through the NamingContainers - "`::`" pops out of the component's naming container (or itself if the component is a naming container) and begin the search from there, "`:::`" pops out of two naming containers (including itself if the component is a naming container) and begin the search from there.
disclosureListener	`javax.el.MethodExpression`	Yes	A method reference to a disclosure listener. A disclosure event is fired when the disclosure state changes.
Advanced Attributes			

Table B–25 (Cont.) Attributes of a Show Detail Frame (HTML) Component

Attribute	Type	Supports EL?	Description
binding	String	Yes	An EL reference that stores the component instance in a bean. This can be used to give programmatic access to a component from a backing bean, or to move creation of the component to a backing bean. For example: `binding="#{yourManagedBean.Binding}"`
attributeChangeListener	`javax.el.MethodExpression`	Yes	A method reference to an attribute change listener. Attribute change events are not delivered for any programmatic change to a property. They are only delivered when a renderer changes a property without the application's specific request. An example of an attribute change events might include the width of a column that supported client-side resizing.
Customization Attributes			
customizationAllowed	Boolean		Specifies whether customizations are allowed on this component. Available values are `true` and `false`. The default value is `true`.
customizationAllowedBy	String		Specifies the roles for which customization is enabled.
Other Attribute			
customizationId			This attribute has been deprecated. Use the `id` attribute.

The **Expression Builder** option available when setting these attributes enables you to bind the component instance to a managed bean property.

Show Detail Frame Facets

You can use the `Show Detail Frame (HTML)` facets to define and display custom actions on `Show Detail Frame (HTML)` components. Table B–26 describes the facets that enable you to display custom actions supported by the `Show Detail Frame (HTML)` component.

Table B–26 Show Detail Frame (HTML) Facets

Facet	Description
titleBarAction	Used if an action is to be associated with title of the `Show Detail Frame` (HTML) component.
additionalActions	Used if some additional actions are to be added to the list of actions available on the `Show Detail Frame (HTML)` header.

JDeveloper displays all facets available to the `Show Detail Frame (HTML)` component in the Structure window. However, only those that contain UI components appear activated.

B.5.3 Customizable Components (HTML) Style Selectors

The tables in this section describe the style selectors that you can use to skin WebCenter Portal Customizable Components.

This section contains the following subsections:

- Panel Customizable (HTML) Style Selectors
- Show Detail Frame (HTML) Style Selectors
- Property Keys
- Icon Selectors

B.5.3.1 Panel Customizable (HTML) Style Selectors

Use the style selectors listed in Table B–27 to skin `Panel Customizable (HTML)` components. For icon selectors relevant to the `Panel Customizable` component, see Section B.5.3.4, "Icon Selectors."

Table B–27 Panel Customizable (HTML) Style Selector

Style Selector	Description
`afh|panelCustomizable::no-header-content`	Specifies the style to render for all four component borders when the component header is turned off.

B.5.3.2 Show Detail Frame (HTML) Style Selectors

Use the style selectors listed in Table B–28 to skin the `Show Detail Frame (HTML)` components.

> **Note:** In addition to defining styles for `Show Detail Frame` components, the `Show Detail Frame` style and icon selectors define styles for portlets.

Table B–28 Show Detail Frame (HTML) Style Selectors

Style Selector	Description

`afh|showDetailFrame::header-top-border-light`
`afh|showDetailFrame::header-top-border-medium`
`afh|showDetailFrame::header-top-border-dark`
	Specifies the style for the top and bottom border of a component header and, also the header background color.

`afh|showDetailFrame::container`	Specifies the style for the component's container.

`afh|showDetailFrame::header-light`
`afh|showDetailFrame::header-medium`
`afh|showDetailFrame::header-dark`
	Specifies the style for text in the component's header. The header is usually a banner of color that contains a title and links to menus and other types of actions.
	Define the header background color with the `af|showDetailFrame::header-top-border-[light,medium,dark]` style element. Use icon selectors to specify the icons to use in the component header and, also the shape of the header's left and right sides.

Table B–28 (Cont.) Show Detail Frame (HTML) Style Selectors

Style Selector	Description
afh|showDetailFrame::content-light afh|showDetailFrame::content-medium afh|showDetailFrame::content-dar	Specifies the style for the component's left, right, and bottom borders.
afh|showDetailFrame::main-menu-container	Specifies the style for the component's main menu container.
afh|showDetailFrame::sub-menu-container	Specifies the style for the component's submenu container.
afh|showDetailFrame::menu-item	Specifies the style for an individual item on the component's main menu.
afh|showDetailFrame::menu-item:hover	Specifies the style to render when the mouse hovers over a component main menu item.
afh|showDetailFrame::sub-menu-item	Specifies the style for an individual item on the component's submenu.
afh|showDetailFrame::sub-menu-item:hover	Specifies the style to render when the mouse hovers over a component submenu item.
afh|showDetailFrame::actions-image-separator	Specifies the amount of padding to provide around the component's Actions, Minimize, and Restore icons. For more information, see also Section B.5.3.4, "Icon Selectors".
afh|showDetailFrame::menu-item-separator	Specifies the style for the line that separates a command or groups of commands on the component's Actions menu. In the default case, a separator appears to be a single thick line. This is achieved using `border-top` and `border-bottom` elements to style the separator. A user who creates a custom skin can style the separator differently. For example, a user can create a separator that displays as a rectangular bar with a colorful background.
A.afh|showDetailFrame::title-clickable	Specifies the style to render for the component's title when the title is a link.
afh|showDetailFrame::no-header-content afh|showDetailFrame::no-header-content-light afh|showDetailFrame::no-header-content-medium afh|showDetailFrame::no-header-content-dark	Specifies the style to render for all four component borders when the component header is turned off.

B.5.3.3 Property Keys

Use property keys to control the display of custom menu items and component action icons. Though you include property keys in your custom skin, they are not represented in the generated CSS that results from the skin.

To explain, skins go through a process that results in a generated CSS. In turn, the generated CSS is consumed by the application. Most style selectors for `Panel Customizable` and `Show Detail Frame` components are represented in the generated CSS. Property keys are the exception. Although they affect the application as much as any other component style selector, they are not represented in the final generated CSS.

Table B–29 lists and describes property keys relevant to `Panel Customizable` and `Show Detail Frame` components.

Table B–29 Property Keys of Panel Customizable and Show Detail Frame Components

Property Key	Description

`showDetailFrame`
`{-ora-additional-actions-position-last:true}`
	Positions additional actions relative to seeded actions on the component's Actions menu.
	Set to `false` to position additional actions before seeded actions. By default, additional actions are positioned after seeded actions.
	The default value is `true`.

`showDetailFrame`
`{-ora-menu-icon-display:false}`
	Controls the display of icons next to their related commands on a `Show Detail Frame` Actions menu.
	Set to `true` to display icons to the left of each action on the Actions menu. By default, no icons are displayed to the left of individual actions.
	The default value is `false`.
	For information about specifying the icons to use when this property key is set to `true`, see Section B.5.3.4, "Icon Selectors."

B.5.3.4 Icon Selectors

Icons are either displayed or not displayed depending on whether the component's `ora-menu-icon-display` property key is set to `true` or `false`. Property keys are described in Section B.5.3.3, "Property Keys."

Each icon selector has a *light*, *medium*, and *dark* scheme. Using these you can define three distinct looks in your CSS and specify which one to use through the `background` property in the JDeveloper Property Inspector. Depending on which value is specified for a component instance's `background` property, the skin applies the relevant style.

For easy, error-free portability, store all application icons under the Portal Framework application's root folder.

The selectors described in Table B–30 apply to the icons used with `Panel Customizable (HTML)` and `Show Detail Frame (HTML)` components.

Table B–30 Icon Selectors for WebCenter Portal Customizable Components

Selector	Description
showDetailFrame showDetailFrame::light-ActionsIcon:alias showDetailFrame::medium-ActionsIcon:alias showDetailFrame::dark-ActionsIcon:alias **panelCustomizable** panelCustomizable::light-ActionsIcon:alias panelCustomizable::medium-ActionsIcon:alias panelCustomizable::dark-ActionsIcon:alias	This icon represents the Actions menu. The Actions menu lists the actions a user can perform on the component. In a Portal Framework application, the Actions icon is rendered on the right corner of the component header.
showDetailFrame showDetailFrame::light-MinimizeIcon:alias showDetailFrame::medium-MinimizeIcon:alias showDetailFrame::dark-MinimizeIcon:alias **panelCustomizable** panelCustomizable::light-MinimizeIcon:alias panelCustomizable::medium-MinimizeIcon:alias panelCustomizable::dark-MinimizeIcon:alias	This icon represents the Minimize option. Minimize collapses the view of the component like a window shade. In a Portal Framework application, the Minimize icon is rendered on the left side of the component header. See also, `showDetailFrame::light-ExpandIcon:alias`.
showDetailFrame showDetailFrame::light-MaximizeIcon:alias showDetailFrame::medium-MaximizeIcon:alias showDetailFrame::dark-MaximizeIcon:alias	This is applicable only for the `Show Detail Frame (HTML)` component. The rich variant of this component does not support the maximize action. This icon represents the Maximize option, which expands the `Show Detail Frame (HTML)` component to the dimensions of the `Panel Customizable (HTML)` component that contains it. Where multiple `Show Detail Frame (HTML)` components display in the same container, these are displaced while the maximized `Show Detail Frame (HTML)` remains maximized. In a Portal Framework application, the Maximize icon is displayed to the left of the Maximize command on the component's Actions menu.
panelCustomizable panelCustomizable::light-MaximizeIcon:alias panelCustomizable::medium-MaximizeIcon:alias panelCustomizable::dark-MaximizeIcon:alias	This is applicable only for the `Panel Customizable (HTML)` component. The rich variant of this component does not provide any actions. This icon represents the Maximize option, which expands component display to the dimensions of the container. Where multiple components display in the same container, these are displaced by the maximized component. In a Portal Framework application, the Maximize icon is displayed to the left of the Maximize command on the component's Actions menu.
showDetailFrame showDetailFrame::light-RestoreIcon:alias showDetailFrame::medium-RestoreIcon:alias showDetailFrame::dark-RestoreIcon:alias **panelCustomizable** panelCustomizable::light-RestoreIcon:alias panelCustomizable::medium-RestoreIcon:alias panelCustomizable::dark-RestoreIcon:alias	This icon represents the Restore option, which restores maximized views to their default display modes. In a Portal Framework application, the Restore icon is rendered to the left of the Restore command on the component's Actions menu.

Table B–30 (Cont.) Icon Selectors for WebCenter Portal Customizable Components

Selector	Description
showDetailFrame showDetailFrame::light-ExpandIcon:alias showDetailFrame::medium-ExpandIcon:alias showDetailFrame::dark-ExpandIcon:alias **panelCustomizable** panelCustomizable::light-ExpandIcon:alias panelCustomizable::medium-ExpandIcon:alias panelCustomizable::dark-ExpandIcon:alias	The Expand icon represents the action that expands a component that has been minimized. The Expand icon toggles with the Minimize icon. That is, when the component is minimized, the Expand icon is displayed; when the component is expanded, the Minimize icon is displayed. In a Portal Framework application, the Expand icon is displayed on the left side of the component header.
showDetailFrame showDetailFrame::light-MoveIcon:alias showDetailFrame::medium-MoveIcon:alias showDetailFrame::dark-MoveIcon:alias **panelCustomizable** panelCustomizable::light-MoveIcon:alias panelCustomizable::medium-MoveIcon:alias panelCustomizable::dark-MoveIcon:alias	This icon represents the Move option, which enables rearrangement of a component's location in relation to the other components on the page. In a Portal Framework application, the Move icon is displayed to the left of the Move command on the component's Actions menu.
showDetailFrame showDetailFrame::light-MoveLeftIcon:alias showDetailFrame::medium-MoveLeftIcon:alias showDetailFrame::dark-MoveLeftIcon:alias **panelCustomizable** panelCustomizable::light-MoveLeftIcon:alias panelCustomizable::medium-MoveLeftIcon:alias panelCustomizable::dark-MoveLeftIcon:alias	This icon represents the Move Left option on the component submenu. Move Left rearranges the component horizontally, one position closer to the left boundary of the page. For example, imagine three horizontally arranged components. You select Move Left on the right-most component. It becomes the middle component. In a Portal Framework application, the Move Left icon is displayed to the left of the Move Left submenu item on the component's Actions menu.
showDetailFrame showDetailFrame::light-MoveRightIcon:alias showDetailFrame::medium-MoveRightIcon:alias showDetailFrame::dark-MoveRightIcon:alias **panelCustomizable** panelCustomizable::light-MoveRightIcon:alias panelCustomizable::medium-MoveRightIcon:alias panelCustomizable::dark-MoveRightIcon:alias	This icon represents the Move Right option on the component submenu. Move Right rearranges the component horizontally, one position closer to the right boundary of the page. For example, imagine three horizontally arranged components. You select Move Right on the left-most component. It becomes the middle component. In a Portal Framework application, the Move Right icon is displayed to the left of the Move Right submenu item on the component's Actions menu.
showDetailFrame showDetailFrame::light-MoveUpIcon:alias showDetailFrame::medium-MoveUpIcon:alias showDetailFrame::dark-MoveUpIcon:alias **panelCustomizable** panelCustomizable::light-MoveUpIcon:alias panelCustomizable::medium-MoveUpIcon:alias panelCustomizable::dark-MoveUpIcon:alias	This icon represents the Move Up option on the component submenu. Move Up rearranges the component vertically in relation to the other components on the page. For example, imagine three vertically arranged components. You select Move Up on the middle component. It becomes the topmost component. In a Portal Framework application, the Move Up icon is displayed to the left of the Move Up submenu item on the component's Actions menu.

Table B–30 (Cont.) Icon Selectors for WebCenter Portal Customizable Components

Selector	Description

showDetailFrame
`showDetailFrame::light-MoveDownIcon:alias`
`showDetailFrame::medium-MoveDownIcon:alias`
`showDetailFrame::dark-MoveDownIcon:alias`
panelCustomizable
`panelCustomizable::light-MoveDownIcon:alias`
`panelCustomizable::medium-MoveDownIcon:alias`
`panelCustomizable::dark-MoveDownIcon:alias`
	This icon represents the Move Down option on the component submenu. Move Down rearranges the component vertically in relation to the other components on the page. For example, imagine three vertically arranged components. You select Move Down on the middle component. It becomes the bottommost component.
	In a Portal Framework application, the Move Down icon is displayed to the left of the Move Down submenu item on the component's Actions menu.

showDetailFrame
`showDetailFrame::light-HeaderLeftIcon:alias`
`showDetailFrame::medium-HeaderLeftIcon:alias`
`showDetailFrame::dark-HeaderLeftIcon:alias`
panelCustomizable
`panelCustomizable::light-HeaderLeftIcon:alias`
`panelCustomizable::medium-HeaderLeftIcon:alias`
`panelCustomizable::dark-HeaderLeftIcon:alias`
	This icon provides an image for the top-left corner of the component header.

showDetailFrame
`showDetailFrame::light-HeaderRightIcon:alias`
`showDetailFrame::medium-HeaderRightIcon:alias`
`showDetailFrame::dark-HeaderRightIcon:alias`
panelCustomizable
`panelCustomizable::light-HeaderRightIcon:alias`
`panelCustomizable::medium-HeaderRightIcon:alias`
`panelCustomizable::dark-HeaderRightIcon:alias`
	This icon provides the image for the top-right corner of the component header.

showDetailFrame
`showDetailFrame::light-ToolbarLeftIcon:alias`
`showDetailFrame::medium-ToolbarLeftIcon:alias`
`showDetailFrame::dark-ToolbarLeftIcon:alias`
panelCustomizable
`panelCustomizable::light-ToolbarLeftIcon:alias`
`panelCustomizable::medium-ToolbarLeftIcon:alias`
`panelCustomizable::dark-ToolbarLeftIcon:alias`
	This icon provides the left portion of the component's FadeIn-FadeOut toolbar.
	The FadeIn-FadeOut toolbar comes into play when the `adfp:portlet` tag attribute `isSeededInteractionAvailable` is set to `true` and `displayHeader` is set to `false`.
	The toolbar contains the Actions menu that would otherwise be displayed on the header. To invoke the toolbar, users move their mouse over the component content area.
	If the page design is very simple, then the FadeIn-FadeOut toolbar may not display, even when `displayHeader` is set to `false` and `isSeededInteractionAvailable` is set to `true`.

`showDetailFrame`
`showDetailFrame::light-ToolbarRightIcon:alias`
`showDetailFrame::medium-ToolbarRightIcon:alias`
`showDetailFrame::dark-ToolbarRightIcon:alias`
panelCustomizable
`panelCustomizable::light-ToolbarRightIcon:alias`
`panelCustomizable::medium-ToolbarRightIcon:alias`
`panelCustomizable::dark-ToolbarRightIcon:alias`
	This icon provides the right portion of the component's FadeIn-FadeOut toolbar.
	See the description for `showDetailFrame::light-ToolbarLeftIcon:alias` for an explanation of the FadeIn-FadeOut toolbar.

Table B–30 (Cont.) Icon Selectors for WebCenter Portal Customizable Components

Selector	Description
showDetailFrame showDetailFrame::light-ToolbarCenterIcon:alias showDetailFrame::medium-ToolbarCenterIcon:alias showDetailFrame::dark-ToolbarCenterIcon:alias **panelCustomizable** panelCustomizable::light-ToolbarCenterIcon:alias panelCustomizable::medium-ToolbarCenterIcon:alias panelCustomizable::dark-ToolbarCenterIcon:alias	This icon provides the center portion of the component's FadeIn-FadeOut toolbar. See the description for `showDetailFrame::light-ToolbarLeftIcon:alias` for an explanation of the FadeIn-FadeOut toolbar.
showDetailFrame showDetailFrame::light-EditIcon:alias showDetailFrame::medium-EditIcon:alias showDetailFrame::dark-EditIcon:alias **panelCustomizable** panelCustomizable::light-EditIcon:alias panelCustomizable::medium-EditIcon:alias panelCustomizable::dark-EditIcon:alias	This icon represents the Edit option on the component menu. In a Portal Framework application, the Edit icon is displayed to the left of the Edit menu item on the component's Actions menu.
showDetailFrame showDetailFrame::light-HelpIcon:alias showDetailFrame::medium-HelpIcon:alias showDetailFrame::dark-HelpIcon:alias **panelCustomizable** panelCustomizable::light-HelpIcon:alias panelCustomizable::medium-HelpIcon:alias panelCustomizable::dark-HelpIcon:alias	This icon represents the Help option on the component menu. In a Portal Framework application, the Help icon is displayed to the left of the Help menu item on the component's Actions menu.

C

Resource Catalog Properties and Files

This appendix describes the configuration, location, and attributes of the default catalog definition file.

This appendix includes the following topics:

- Section C.1, "Configuration and Location of Catalog Definitions"
- Section C.2, "XML Schema"
- Section C.3, "Catalog Definition Attributes"
- Section C.4, "Factory Classes Available for Adding Dynamic Resources to the Catalog"

This information is useful while performing the tasks described in Part III, "Customizing Your Application and Extending Customization Options."

For detailed information about resource catalogs, see Chapter 14, "Developing Resource Catalogs."

C.1 Configuration and Location of Catalog Definitions

The `rcv-config` section of your `adf-config.xml` file defines the name of the default catalog. The `rcv-config` element is not available by default in your application's `adf-config.xml` file. You must add it if you want to change the name of the default catalog or, if you have chosen to implement multiple catalogs, specify a catalog selector class.

```
<rcv:rcv-config>
  <rcv:catalog-selector class-name=""/>
  <rcv:default-catalog
catalog-name="/oracle/webcenter/portalapp/catalogs/default-catalog.xml"/>
</rcv:rcv-config>
```

The resource catalog service stores catalog definition files in MDS at the *`resource-catalog-root`* directory. The *`resource-catalog-root`* is defined as an MDS namespace, hence the exact location depends on your MDS configuration. The default *`resource-catalog-root`* is defined by the `default-scope` attribute in the `adf-rcs-config` element in your `adf-config.xml`. This attribute is set to "**`/`**" implying that a catalog ID is expressed as fully the qualified MDS path:

```
<rcs:adf-rcs-config>
  <rcs:rcs-config>
    <rcs:catalog-config default-scope="/"

default-registry="/oracle/webcenter/portalapp/catalogs/catalog-registry.xml"/>
    . . .
    <rcs:security-manager
class-name="oracle.webcenter.portalframework.genericsiteresources.internal.securit
y.CatalogSecurityManager"/>
  </rcs:rcs-config>
```

The `security-manager` element defines the security manager implementation.

C.2 XML Schema

Example C–1 provides the catalog definition XML schema for your reference.

Example C–1 XML Schema for Catalog Definition

```
<xsd:schema elementFormDefault="qualified"
            targetNamespace="http://xmlns.oracle.com/adf/rcs/catalog"
            xmlns:rcs="http://xmlns.oracle.com/adf/rcs/catalog"
            xmlns:md="http://xmlns.oracle.com/bali/xml/metadata"
            xmlns:mds="http://xmlns.oracle.com/mds"
            xmlns:xsd="http://www.w3.org/2001/XMLSchema"
            xmlns:jaxb="http://java.sun.com/xml/ns/jaxb" jaxb:version="1.0">

  <xsd:annotation>
    <xsd:appinfo>
      <jaxb:schemaBindings>
        <jaxb:package name="oracle.adfinternal.rc.catalog.xml"/>
      </jaxb:schemaBindings>
    </xsd:appinfo>
  </xsd:annotation>

  <!-- declare all elements as top-level elements so they appear in the
       component palette pages generated by XMLEF -->

  <!-- IMPORTANT: catalogDefinition & navigationModel CANNOT share a common type
-->
  <!--            MDS cannot handle it. -->
  <xsd:element name="catalogDefinition" type="rcs:catalogDefinitionType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <!-- enable customization for navigation models -->
  <xsd:element name="navigationDefinition" type="rcs:navigationDefinitionType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <!-- disable customization of the schema definition for both catalog &
navigation models -->
  <xsd:element name="schema" type="rcs:schemaType">
    <xsd:annotation>
```

```
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="descriptor" type="rcs:descriptorType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="attributes" type="rcs:attributesType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="attribute" type="rcs:attributeType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
          <!-- ### this marks "attributeId" attribute as "locally unique" within
the <attributes> tag -->
          <mds:localUniqueAttribute>attributeId</mds:localUniqueAttribute>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="parameters" type="rcs:parametersType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="parameter" type="rcs:parameterType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
          <!-- ### this marks "id" attribute as "locally unique" within the
<parameters> tag -->
          <mds:localUniqueAttribute>id</mds:localUniqueAttribute>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="contents" type="rcs:contentsType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="folder" type="rcs:folderType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="resource" type="rcs:resourceType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="includeCatalog" type="rcs:includeCatalogType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="includeNavigation" type="rcs:includeNavigationType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="repository" type="rcs:repositoryType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="dynamicFolder" type="rcs:dynamicFolderType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="source" type="rcs:dynamicFolderSourceType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="customFolder" type="rcs:customFolderType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="component" type="rcs:componentType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="url" type="rcs:urlType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="customContent" type="rcs:customContentType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="separator" type="rcs:separatorType">
    <xsd:annotation>
      <xsd:appinfo>
        <md:elementMetadata>
          <mds:customizationAllowed>true</mds:customizationAllowed>
        </md:elementMetadata>
      </xsd:appinfo>
    </xsd:annotation>
  </xsd:element>



  <xsd:complexType name="descriptorType">
    <xsd:attribute name="attributeId" type="xsd:string" use="required"/>
    <xsd:attribute name="labelKey" type="xsd:string"/>
    <xsd:attribute name="shortLabelKey" type="xsd:string"/>
    <xsd:attribute name="helpTextKey" type="xsd:string"/>
    <xsd:attribute name="hintTextKey" type="xsd:string"/>
    <xsd:attribute name="searchable" type="xsd:boolean" default="true"/>
    <xsd:attribute name="multivalue" type="xsd:boolean" default="false"/>
    <xsd:attribute name="endUserVisible" type="xsd:boolean" default="true"/>
    <xsd:attribute name="resourceBundle" type="xsd:string"/>
  </xsd:complexType>


  <xsd:complexType name="schemaType">
    <xsd:sequence>
      <xsd:element ref="rcs:descriptor" minOccurs="1" maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="resourceBundle" type="xsd:string"/>
  </xsd:complexType>


  <xsd:complexType name="attributeType">
    <xsd:attribute name="attributeId" type="xsd:string" use="required"/>
    <xsd:attribute name="value" type="xsd:string" use="required"/>
    <xsd:attribute name="isKey" type="xsd:boolean" default="false"/>
    <xsd:attribute name="resourceBundle" type="xsd:string"/>
  </xsd:complexType>

  <xsd:complexType name="attributesType">
    <xsd:sequence>
      <xsd:element ref="rcs:attribute" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="resourceBundle" type="xsd:string"/>
  </xsd:complexType>

  <xsd:complexType name="parameterType">
    <xsd:simpleContent>
      <xsd:extension base="xsd:string">
        <xsd:attribute name="id" type="xsd:string" use="required"/>
      </xsd:extension>
    </xsd:simpleContent>
  </xsd:complexType>

  <xsd:complexType name="parametersType">
```

```
    <xsd:sequence>
      <xsd:element ref="rcs:parameter" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>

  <xsd:complexType name="itemType">
    <xsd:all>
      <xsd:element ref="rcs:attributes" minOccurs="0" maxOccurs="1"/>
      <xsd:element ref="rcs:parameters" minOccurs="0" maxOccurs="1"/>
    </xsd:all>
    <xsd:attribute name="id" type="xsd:ID" use="required"/>
    <xsd:attribute name="name" type="xsd:string"/>
    <xsd:attribute name="description" type="xsd:string"/>
    <xsd:attribute name="visible" type="xsd:string" default="true"/>
  </xsd:complexType>


  <xsd:complexType name="includeCatalogType">
    <xsd:complexContent>
      <xsd:extension base="rcs:itemType">
        <xsd:attribute name="scope" type="xsd:string" use="required"/>
        <xsd:attribute name="catalogId" type="xsd:string" use="required"/>
        <xsd:attribute name="insertFolderContents" type="xsd:boolean"
default="false"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:complexType name="includeNavigationType">
    <xsd:complexContent>
      <xsd:extension base="rcs:itemType">
        <xsd:attribute name="scope" type="xsd:string" use="required"/>
        <xsd:attribute name="navigationId" type="xsd:string" use="required"/>
        <xsd:attribute name="insertFolderContents" type="xsd:boolean"
default="false"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:complexType name="repositoryType">
    <xsd:complexContent>
      <xsd:extension base="rcs:itemType">
        <xsd:attribute name="repository" type="xsd:string" use="required"/>
        <xsd:attribute name="path" type="xsd:string"/>
        <xsd:attribute name="includeSubfolders" type="xsd:boolean"
default="true"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>


  <xsd:complexType name="dynamicFolderSourceType">
    <xsd:attribute name="repository" type="xsd:string"/>
    <xsd:attribute name="path" type="xsd:string"/>
    <xsd:attribute name="includeSubfolders" type="xsd:boolean" default="true"/>
  </xsd:complexType>

  <xsd:complexType name="dynamicFolderType">
    <xsd:complexContent>
      <xsd:extension base="rcs:itemType">
```

```
        <xsd:sequence>
          <xsd:element ref="rcs:source" minOccurs="1" maxOccurs="unbounded"/>
        </xsd:sequence>
        <xsd:attribute name="expression" type="xsd:string"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:complexType name="customContentType">
    <xsd:complexContent>
      <xsd:extension base="rcs:itemType">
        <xsd:attribute name="contentProviderClass" type="xsd:string"
use="required"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:complexType name="customFolderType">
    <xsd:complexContent>
      <xsd:extension base="rcs:itemType">
        <xsd:attribute name="factoryClass" type="xsd:string" use="required"/>
        <xsd:attribute name="path" type="xsd:string"/>
        <xsd:attribute name="insertFolderContents" type="xsd:boolean"
default="false"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <!-- this is a bit of a kludge. To keep MDS happy we must define a type -->
  <!-- for separators even though they don't have any special attributes -->
  <xsd:complexType name="separatorType">
    <xsd:complexContent>
      <xsd:extension base="rcs:itemType"/>
    </xsd:complexContent>
  </xsd:complexType>

<!-- implementation of filters has been deferred

  <xsd:complexType name="filterType">
    <xsd:complexContent>
      <xsd:extension base="rcs:itemType">
        <xsd:attribute name="expression" type="xsd:string"/>
        <xsd:attribute name="filterClass" type="xsd:string"/>
        <xsd:attribute name="scope" type="xsd:string" default="subtree"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
-->

  <xsd:group name="folderContentGroup">
    <xsd:choice>
      <xsd:element name="folder" type="rcs:folderType"/>
      <xsd:element name="repository" type="rcs:repositoryType"/>
      <xsd:element name="resource" type="rcs:resourceType" />
      <xsd:element name="dynamicFolder" type="rcs:dynamicFolderType" />
      <xsd:element name="customFolder" type="rcs:customFolderType"/>
      <xsd:element name="customContent" type="rcs:customContentType"/>
      <xsd:element name="component" type="rcs:componentType"/>
      <xsd:element name="url" type="rcs:urlType"/>
      <xsd:element name="includeCatalog" type="rcs:includeCatalogType"/>
      <xsd:element name="includeNavigation" type="rcs:includeNavigationType"/>
      <xsd:element name="separator" type="rcs:separatorType"/>
    </xsd:choice>
  </xsd:group>

   <xsd:complexType name="contentsType">
      <xsd:group ref = "rcs:folderContentGroup" minOccurs="0"
maxOccurs="unbounded" />
   </xsd:complexType>

  <!-- contents is optional to allow resourceType to extend folderType -->
  <!-- most resources won't have children so the contents element should be
optional -->
  <xsd:complexType name="folderType">
    <xsd:complexContent>
      <xsd:extension base="rcs:itemType">
        <xsd:all>
<!--      <xsd:element name="filter" type="rcs:filterType" minOccurs="0"
maxOccurs="unbounded"/> -->
          <xsd:element ref="rcs:contents" minOccurs="0" maxOccurs="1"/>
        </xsd:all>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <!-- resourceType extends folderType to allow resource elements to have children
-->
  <xsd:complexType name="resourceType">
    <xsd:complexContent>
      <xsd:extension base="rcs:folderType">
        <xsd:attribute name="repository" type="xsd:string" use="required"/>
        <xsd:attribute name="path" type="xsd:string" use="required"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <!-- resourceType extends folderType to allow component elements to have
children -->
  <xsd:complexType name="componentType">
    <xsd:complexContent>
      <xsd:extension base="rcs:folderType">
        <xsd:attribute name="factoryClass" type="xsd:string" use="required"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <!-- resourceType extends folderType to allow URL elements to have children -->
  <xsd:complexType name="urlType">
    <xsd:complexContent>
      <xsd:extension base="rcs:folderType">
        <xsd:attribute name="url" type="xsd:string" use="required"/>
        <xsd:attribute name="factoryClass" type="xsd:string" use="required"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:complexType name="catalogDefinitionType">
    <xsd:complexContent>
      <xsd:extension base="rcs:folderType">
        <xsd:all>
```

```
          <xsd:element ref="rcs:schema" minOccurs="0" maxOccurs="1"/>
        </xsd:all>
        <xsd:attribute name="contact" type="xsd:string"/>
        <xsd:attribute name="definitionFilter" type="xsd:string"/>
        <xsd:attribute name="resourceBundle" type="xsd:string"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

  <xsd:complexType name="navigationDefinitionType">
    <xsd:complexContent>
      <xsd:extension base="rcs:folderType">
        <xsd:all>
          <xsd:element ref="rcs:schema" minOccurs="0" maxOccurs="1"/>
        </xsd:all>
        <xsd:attribute name="contact" type="xsd:string"/>
        <xsd:attribute name="definitionFilter" type="xsd:string"/>
        <xsd:attribute name="resourceBundle" type="xsd:string"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

</xsd:schema>
```

C.3 Catalog Definition Attributes

The catalog definition schema provides a rich set of elements through which you can specify the structure and content of your resource catalogs.

This section includes the following topics:

- Section C.3.1, "catalogDefinition"
- Section C.3.2, "folder"
- Section C.3.3, "url"
- Section C.3.4, "includeCatalog"
- Section C.3.5, "component"
- Section C.3.6, "customFolder"
- Section C.3.7, "customContent"
- Section C.3.8, "attributes"
- Section C.3.9, "attribute"
- Section C.3.10, "parameters"
- Section C.3.11, "schema"
- Section C.3.12, "resource"

For an example of creating a custom catalog definition file, see Section 14.2, "Creating a Resource Catalog."

C.3.1 catalogDefinition

The `catalogDefinition` element defines the overall characteristics of the catalog, such as the location of translated strings.

Example C–2 illustrates the use of `catalogDefinition`.

Example C–2   Example of catalogDefinition

```
<catalogDefinition id="DefaultCatalog" visible="#{true}"
                   resourceBundle="portal.catalog.DefaultCatalogBundle"
                   definitionFilter="portal.catalog.DefaultCatalogFilter"
                   xmlns="http://xmlns.oracle.com/adf/rcs/catalog">
```

Table C–1 describes the keywords of the catalogDefinition element. For information about including attributes, such as title, subject, and description for elements, see Section C.3.8, "attributes."

Table C–1   catalogDefinition Keywords

Keyword	Description
xmlns	http://xmlns.oracle.com/adf/rcs/catalog
id	The identifier used when referring to this catalog definition.
visible	Whether the resource catalog must be available for selection at runtime. This attribute takes an EL value and can be used to conditionally display the catalog to specific users or groups. The default value is #{true}, which means that the catalog is displayed at all times.
resourceBundle	The name of the resource bundle to be used for obtaining translated attribute values, where <attribute.... isKey="true"/>. The resourceBundle attribute can also be used at lower levels in the document, such as on individual attributes elements. Refer to the XSD for further details.
definitionFilter	The fully qualified name of a Java class that implements the oracle.adf.rc.spi.plugin.catalog.CatalogDefinitionFilter. You can use a definition filter to dynamically exclude entries from a catalog at runtime. One common use of a definition filter is to provide different views of the same catalog to users with different roles. For example, WebCenter Portal uses a definition filter to hide entries for services that the administrator has disabled.

C.3.2 folder

The folder element defines a catalog folder, used to organize content in the catalog. Folders can contain any number of entries including other folders. You can mix different types of catalog elements in the same folder.

Folders can have attributes just like any other entry. For information about including attributes for elements, see Section C.3.8, "attributes."

Example C–3 illustrates the use of the folder element.

Example C–3   Example of folder

```
<folder visible="#{true}" id="webDevFolder">
  <attributes>
    <attribute value="WEB_DEV_FOLDER.TITLE" attributeId="Title"
               isKey="true"/>
    <attribute value="WEB_DEV_FOLDER.DESCRIPTION" attributeId="Description"
               isKey="true"/>
    <attribute value="WEB_DEV_FOLDER.KEYWORDS" attributeId="Subject"
               isKey="true"/>
    <attribute value="/adf/webcenter/folderlayout_qualifier.png"
               isKey="false" attributeId="IconURI"/>
  </attributes>
  <contents/>
```

```
<folder>
```

Table C–2 describes the keywords of the `folder` element.

Table C–2 folder Keywords

Keyword	Description
`id`	The unique identifier used when referring to this folder.
`visible`	Whether the resource must be rendered in the catalog. This attribute takes an EL value and can be used to conditionally display the resource to specific users or groups. The default value is `#{true}`, which means that the resource is displayed in the catalog at all times.

Rather than adding the code to the catalog definition source, you may find it easier to add a folder in Design view of the catalog definition file. For more information, see Section 14.3.4, "How to Add a Folder to a Resource Catalog."

C.3.3 url

The `url` element is used to define the following types of links in a catalog:

- **Task Flow**: Link to a WebCenter Portal tools and services task flow or a custom task flow created in JDeveloper.
- **Portlet**: Link to any registered portlet producer.
- **Content**: Link to a file or directory from an existing Content Repository connection.
- **Other**: Link to a custom component that you create by providing the XML code for that component.

Example C–4 illustrates the use of the `url` element.

Example C–4 Example of a url Resource

```
<url visible="#{true}"

factoryClass="oracle.webcenter.portalframework.sitestructure.rc.TaskFlowResourceFa
ctory"
     id="tagCloud"

url="taskflow://oracle/webcenter/tagging/controller/taskflows/tag-selection.xml#ta
g-selection">
  <attributes>
    <attribute value="TAG_CLOUD.TITLE" attributeId="Title" isKey="true"/>
    <attribute value="TAG_CLOUD.DESCRIPTION" attributeId="Description"
               isKey="true"/>
    <attribute value="TAG_CLOUD.KEYWORDS" attributeId="Subject"
               isKey="true"/>
    <attribute value="oracle.webcenter.tagging"
               attributeId="WEBCENTER_SERVICE_ID" isKey="false"/>
    <attribute value="/adf/webcenter/label_qualifier.png"
               attributeId="IconURI"/>
    <attribute value="height:211px" attributeId="attr.contentStyle"
               isKey="false"/>
  </attributes>
  <contents/>
</url>
```

Table C–3 describes the keywords for the url element.

Table C–3 url Keywords

Keyword	Description
id	The unique identifier used when referring to this link.
visible	Whether the resource must be rendered in the catalog. This attribute takes an EL value and can be used to conditionally display the resource to specific users or groups. The default value is #{true}, which means that the resource is displayed in the catalog at all times.
factoryClass	If you are adding a custom component, then specify the factory class of the component. For all other resource types, the Factory Class value is populated as soon as you select the type in Design mode. The factory classes for the available resource types are as follows: ■ Task flow: oracle.webcenter.portalframework.sitestructure.rc.TaskFlowResourceFactory ■ Portlet: oracle.webcenter.portalframework.sitestructure.rc.PortletResourceFactory ■ Content: oracle.webcenter.content.model.rc.ContentUrlResourceFactory ■ Data control: oracle.webcenter.datacomposer.internal.adapter.datacontrol.DataControlContextFactory
url	The URL to access the resource. Different link types support different URL formats. For more information, see Table 14–1.

Resource links can have attributes, such as title, subject, and description, and parameters. For more information, see Section C.3.8, "attributes" and Section C.3.10, "parameters."

Rather than adding the code to the catalog definition source, you may find it easier to add a link in Design view of the catalog definition file. For more information, see Section 14.3.3, "How to Add a Link to a Resource Catalog."

C.3.4 includeCatalog

The includeCatalog element is used to include a reference to another catalog definition file.

Example C–5 illustrates the use of the includeCatalog element.

Example C–5 Example of a Nested Resource Catalog

```
<includeCatalog visible="#{true}" scope="/" id="users-catalog"

catalogId="/oracle/webcenter/portalapp/catalogs/users-catalog.xml">
 <attributes>
   <attribute value="catalog" isKey="false" attributeId="Title"/>
 </attributes>
</includeCatalog>
```

The includeCatalog element supports the same keywords as the catalogDefinition element. See Table C–1 for the keywords on the includeCatalog element.

A catalog can have attributes, such as title, subject, and description. For information about including attributes for elements, see Section C.3.8, "attributes."

Rather than adding the code to the catalog definition source, you may find it easier to add a catalog in Design view of the catalog definition file. For more information, see Section 14.3.8, "How to Add a Resource Catalog to Another Resource Catalog."

C.3.5 component

The component element is used to include a custom XML resource, such as a simple ADF Faces component or raw HTML, in the catalog. The component element must be located within the contents section. You can add multiple component elements in a catalog definition file.

The component element must contain a parameters element with a nested parameter element. Set the id for the parameter element to xml. Include the XML fragment inside this parameter element. To generate an ADF Faces ID for the component at runtime, set the ID on the component to # (hash symbol).

Example C–6 shows the code to add a Box component to the resource catalog.

Example C–6 Panel Customizable Component in the Catalog Definition File

```
<component id="pc" visible="#{true}"
           factoryClass="oracle.adf.rc.component.XmlComponentFactory">
  <attributes>
    <attribute attributeId="Title" value="BOX" isKey="true"/>
    <attribute attributeId="Description" value="BOX.DESCRIPTION"
               isKey="true"/>
    <attribute attributeId="Subject" value="BOX.KEYWORDS" isKey="true"/>
    <attribute attributeId="IconURI"
               value="/adf/webcenter/panelcustomizable_qualifier.png"/>
  </attributes>
<parameters>
  <parameter id="xml">&lt;cust:panelCustomizable id="#"
xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"/&gt;
  </parameter>
</parameters>
  </parameters>
</component>
```

Table C–4 describes the keywords of the component element. For information about including attributes for elements, see Section C.3.8, "attributes."

Table C–4 component Keywords

Keyword	Description
id	The unique identifier for the component in the catalog definition.
visible	Whether the resource must be rendered in the catalog. This attribute takes an EL value and can be used to conditionally display the resource to specific users or groups. The default value is #{true}, which means that the resource is displayed in the catalog at all times.

Table C–4 (Cont.) component Keywords

Keyword	Description
`factoryClass`	The name of a Java class that implements the `oracle.adf.rc.component.ComponentFactory` interface and generates a resource catalog item based on a set of parameters. Each `ComponentFactory` implementation defines the set of parameters it requires. For example, `XmlComponentFactory` requires a single parameter named `xml` and the value of the parameter is a block of XML representing a component or components that can be inserted into a page.

A custom component can have attributes, such as title, subject, and description, and parameters. For more information, see Section C.3.8, "attributes" and Section C.3.10, "parameters."

You may find it easier to add a custom component in Design view of the catalog definition file. For more information, see Section 14.3.5, "How to Add a Custom Component to a Resource Catalog."

C.3.6 customFolder

The `customFolder` element defines content generated using resource catalog adapters. This element renders a folder that is populated with content dynamically at runtime. The catalog displays the folder even if there are no resources inside it.

Example C–7 illustrates the use of the `customFolder` element to render task flows from the Analytics service.

Example C–7 Example of a customFolder Resource

```
<customFolder
factoryClass="oracle.webcenter.analytics.view.rc.ASServiceContextFactory"
id="analyticsServiceFolder" visible="#{true}">
         <attributes
resourceBundle="oracle.webcenter.spaces.resource.DefaultGroupSpaceCatalogBundle">
            <attribute attributeId="Description" isKey="true"
resourceBundle="oracle.webcenter.spaces.resource.DefaultGroupSpaceCatalogBundle"
value="ANALYTICS_FOLDER.DESCRIPTION"/>
            <attribute attributeId="IconURI" isKey="false"
value="/adf/webcenter/folderanalytics_qualifier.png"/>
            <attribute attributeId="Subject" isKey="true"
resourceBundle="oracle.webcenter.spaces.resource.DefaultGroupSpaceCatalogBundle"
value="ANALYTICS_FOLDER.KEYWORDS"/>
            <attribute attributeId="WEBCENTER_SERVICE_ID" isKey="false"
value="oracle.webcenter.analytics"/>
            <attribute attributeId="attr.text" isKey="false" value="#{uib_o_w_s_r_
DefaultGroupSpaceCatalog['ANALYTICS_FOLDER.TITLE']}"/>
            <attribute attributeId="Title" isKey="true"
resourceBundle="oracle.webcenter.spaces.resource.DefaultGroupSpaceCatalogBundle"
value="ANALYTICS_FOLDER.TITLE"/>
         </attributes>
         <parameters/>
      </customFolder>
```

Table C–5 describes the keywords for the `customFolder` element.

Table C–5 customFolder Keywords

Keyword	Description
`id`	The unique identifier used when referring to this folder.
`visible`	Whether the resource must be rendered in the catalog. This attribute takes an EL value and can be used to conditionally display the resource to specific users or groups. The default value is `#{true}`, which means that the resource is displayed in the catalog at all times.
`factoryClass`	The factory class of the service. See Section C.4, "Factory Classes Available for Adding Dynamic Resources to the Catalog" for information about the supported factory classes.

A custom folder can have attributes, such as title, subject, and description, and parameters. For more information, see Section C.3.8, "attributes" and Section C.3.10, "parameters."

Rather than adding the code to the catalog definition source, you may find it easier to add a custom folder in Design view of the catalog definition file. For more information, see Section 14.3.6, "How to Add a Custom Folder to a Resource Catalog."

C.3.7 customContent

The `customContent` element defines content generated using resource catalog adapters. This element renders a folder that contains resources that are generated dynamically at runtime. Unlike the `customFolder` element, the `customContent` element renders a folder in the catalog only if the folder contains resources.

Example C–8 illustrates the use of the `customContent` element.

Example C–8 Example of a customContent Resource

```
<customContent
contentProviderClass="com.oracle.ensemble.interop.adf.EnsembleContentProvider"
               id="ensembleContentProvider" visible="true">
  <attributes
resourceBundle="oracle.webcenter.spaces.resource.DefaultGroupSpaceCatalogBundle"/>
</customContent>
```

Table C–6 describes the keywords for the `customContent` element.

Table C–6 customContent Keywords

Keyword	Description
`id`	The unique identifier used when referring to this folder.
`visible`	Whether the resource must be rendered in the catalog. This attribute takes an EL value and can be used to conditionally display the resource to specific users or groups. The default value is `#{true}`, which means that the resource is displayed in the catalog at all times.
`contentProviderClass`	The fully qualified name of a class that implements the interface `oracle.adf.rc.spi.plugin.catalog.CustomContentProviderV2.`

A custom content provider can have attributes, such as title, subject, and description, and parameters. For more information, see Section C.3.8, "attributes" and

Section C.3.10, "parameters."

Rather than adding the code to the catalog definition source, you may find it easier to add a custom content folder in Design view of the catalog definition file. For more information, see Section 14.3.7, "How to Add a Custom Content Provider to a Resource Catalog."

C.3.8 attributes

Entries in a resource catalog have associated attributes that describe the entry. Values for some attributes can be obtained directly from the resources or from the `name` and `description` attributes on each XML element in the catalog definition. However, these values may not always be appropriate for displaying to end users, and often they are not available in different languages. Attributes defined using the `attributes` element in the catalog definition let you override those available from other sources. In addition, these attributes can be defined in terms of a key to a resource bundle so the actual values displayed reflect the current user's locale.

Within the `attributes` element you can insert any number of individual `attribute` elements that define the attributes you want to apply to a resource catalog entry.

Example C–9 illustrates the use of the `attributes` element.

Example C–9 Example of attributes and attribute Elements

```
<attributes>
 <attribute value="ANNOUNCEMENTS_MAIN_VIEW.TITLE" attributeId="Title"
  isKey="true"/>
 <attribute value="ANNOUNCEMENTS_MAIN_VIEW.DESCRIPTION" attributeId="Description"
  isKey="true"/>
 <attribute value="ANNOUNCEMENTS_MAIN_VIEW.KEYWORDS" attributeId="Subject"
  isKey="true"/>
 <attribute value="oracle.webcenter.collab.announcement"
  attributeId="WEBCENTER_SERVICE_ID" isKey="false"/>
</attributes>
```

Table C–7 describes the keywords of the `attributes` element.

Table C–7 attributes Keywords

Keyword	Description
`resourceBundle`	The name of the resource bundle to be used for obtaining translated attribute values.

C.3.9 attribute

The `attribute` element defines an attribute for a resource catalog entry that corresponds to a descriptor in the `schema` element. For information about attributes, see Section C.3.8, "attributes." Composer uses the following attributes:

- Title
- Description
- Subject
- IconURI
- ToolTip

You should include at least a `Title` and `Description` attribute for each catalog entry. A `Subject` attribute is also highly recommended to facilitate keyword searching of the resource catalog. The Title attribute overrides the name attribute on the parent element and is used to declare a display name that is translated through a resource bundle. Similarly, the Description attribute overrides the description attribute on the parent element and is used to declare a description that is translated through a resource bundle.

You can declare your own attributes by including them in the schema element. For more information, see Section C.3.11, "schema."

Example C–10 illustrates the use of the attribute element.

Example C–10 Example of attributes and attribute Elements

```
<attributes>
 <attribute value="ANNOUNCEMENTS_MAIN_VIEW.TITLE" attributeId="Title"
  isKey="true"/>
 <attribute value="ANNOUNCEMENTS_MAIN_VIEW.DESCRIPTION" attributeId="Description"
  isKey="true"/>
 <attribute value="ANNOUNCEMENTS_MAIN_VIEW.KEYWORDS" attributeId="Subject"
  isKey="true"/>
 <attribute value="oracle.webcenter.collab.announcement"
  attributeId="WEBCENTER_SERVICE_ID" isKey="false"/>
</attributes>
```

Table C–8 describes the keywords of the attribute element.

Table C–8 attribute Keywords

Keyword	Description
attributeId	The identifier of the attribute as declared in the schema element.
value	The value of the attribute.
isKey	A flag indicating whether the value is a literal value (false) or a key to a resource bundle (true). In most cases, attributes should be resource bundle keys and the values translated through a resource bundle. The resource bundle can be declared at the catalog level or on various lower level elements such as attributes.
resourceBundle	The name of the resource bundle to be used for obtaining translated attribute values.

For task flows included in your resource catalog, you can use the attribute element to pass task flow parameters and attributes of the enclosing Show Detail Frame component. You can do this by prefixing the attributeId values for the task flow parameters and Show Detail Frame attributes with **parameter.** and **attr.** respectively as shown in the following example:

```
<attributes>
  <attribute value="dark" attributeId="attr.background"
   isKey="false"/>
  <attribute value="#{myBean.myParam1}" attributeId="parameter.myParam1"
   isKey="false"/>
</attributes>
```

For more information, see Section 14.7, "Defining Task Flow Parameters and Attributes of the Enclosing Show Detail Frames for Task Flows."

C.3.10 parameters

A few of the resource catalog components, such as links, custom components, and custom folders, support parameters. Parameters are used to provide the XML code for a custom component or bind the resource to other artifacts in the application. You can use the `parameters` element to define parameters on a resource. The `parameters` element must be included inside the tag for the resource. Each `parameters` element can have multiple `parameter` tags. You must provide an ID and a value for each parameter that you define.

When you define a parameter for a custom XML component, you must specify the parameter ID to be `xml` and the value is the code for the custom component. In the code, the component's ID must be `#` so that it is generated at runtime. In addition, you must specify the namespace for the component.

Example C–11 illustrates the use of the `parameters` element in a custom XML component definition.

Example C–11 Example of parameters and parameter Elements

```
<parameters>
  <parameter id="xml">&lt;cust:panelCustomizable id="#"
xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"/&gt;
  </parameter>
</parameters>
```

C.3.11 schema

The `schema` element contains one or more `descriptor` elements. The `descriptor` elements provide the resource catalog service with information about the attributes used within the catalog, such as whether they are searchable. Out-of-the-box, the attributes Title, Description, Subject, ToolTip, and IconURI are supported for a resource. You can add other custom attributes that you want to expose on the resource.

Example C–12 illustrates the use of the `schema` element.

Example C–12 Example of schema

```
<schema resourceBundle="oracle.adf.rc.attribute.nls.AttributeBundle"
          xmlns="http://xmlns.oracle.com/adf/rcs/catalog">
    <descriptor labelKey="TITLE.PROMPT_KEY" endUserVisible="true"
                multivalue="false" searchable="true" attributeId="Title"
                shortLabelKey="TITLE.SHORT_PROMPT_KEY"
                xmlns="http://xmlns.oracle.com/adf/rcs/catalog"/>
    <descriptor labelKey="DESCRIPTION.PROMPT_KEY" endUserVisible="true"
                multivalue="false" searchable="true" attributeId="Description"
                shortLabelKey="DESCRIPTION.SHORT_PROMPT_KEY"
                xmlns="http://xmlns.oracle.com/adf/rcs/catalog"/>
    <descriptor labelKey="SUBJECT.PROMPT_KEY" endUserVisible="true"
                multivalue="false" searchable="true" attributeId="Subject"
                shortLabelKey="SUBJECT.SHORT_PROMPT_KEY"
                xmlns="http://xmlns.oracle.com/adf/rcs/catalog"/>
    <descriptor labelKey="TOOL_TIP.PROMPT_KEY" endUserVisible="true"
                multivalue="false" searchable="false" attributeId="ToolTip"
                shortLabelKey="TOOL_TIP.SHORT_PROMPT_KEY"
                xmlns="http://xmlns.oracle.com/adf/rcs/catalog"/>
    <descriptor labelKey="ICON_URI.PROMPT_KEY" endUserVisible="false"
                multivalue="false" searchable="false" attributeId="IconURI"
                shortLabelKey="ICON_URI.SHORT_PROMPT_KEY"
                xmlns="http://xmlns.oracle.com/adf/rcs/catalog"/>
</schema>
```

Table C–9 describes the keywords of the `descriptor` element.

Table C–9 descriptor Keywords

Keyword	Description
`attributeId`	The identifier of the attribute being described.
`searchable`	Indicates whether the attribute is included in resource catalog searches (`true`) or not (`false`).
`multivalue`	Indicates whether the attribute can have multiple values (`true`) or not (`false`).
`endUserVisible`	Indicates whether the attribute should be exposed to end users (`true`) or not (`false`).
`resourceBundle`	The name of the resource bundle used to translate the label keys.
`labelKey`	The resource bundle key for the attribute's label.
`shortLabelKey`	The resource bundle key for the attribute's short label.

C.3.12 resource

The `resource` element is used to declare an individual resource, such as a task flow, in the catalog. You would need to use this element if you are using a standalone version of Composer (that is, Composer without WebCenter Portal Framework).

> **Note:** The `url` element, discussed in Section C.3.3, "url," also enables you to declare a resource in the catalog. However, `url` is available only if you have installed WebCenter Portal Framework and have the associated shared libraries.

Example C–13 illustrates the use of the `resource` element.

Example C–13 Example of resource

```
<resource id="weatherTF"
      repository="application.classpath"
      path="TaskFlow.jar/ADF_
TaskFlow/oracle+composer+internal+test+weather-tfdefn.xml#weather_tf_defn"
      visible="#{true}">
  <attributes>
    <attribute value="/images/bulbgauge_ena.png" attributeId="IconURI"/>
    <attribute value="never" attributeId="attr.showResizer"/>
    <attribute value="Weather in Bangalore is rainy"
               attributeId="parameter.message"/>
    <attribute value="WeatherBee" isKey="false" attributeId="Title"/>
    <attribute value="Displays the weather of your city" isKey="false"
               attributeId="Description"/>
    <attribute value="Weather widget" isKey="false" attributeId="ToolTip"/>
  </attributes>
  <parameters/>
</resource>
```

Table C–10 describes the keywords of the `resource` element. For information about including `attributes` for elements, see Section C.3.8, "attributes."

Table C–10 resource Keywords

Keyword	Description
`id`	The identifier for the element in the catalog. Identifiers are required and must be unique at the folder level.
`repository`	The path to access ADF libraries included in your classpath.

`path`	The path to the resource. For a task flow in an ADF Library, the path is of the following form:
	`path_to_jar/ADF_TaskFlow/task_flow_path`
	To obtain the `task_flow_path`, create a file system connection in Application Connections and navigate to the task flow in your ADF Library. The tooltip for the task flow shows the fully qualified ID of the task flow. Take this value and replace all occurrences of "/" with "+".
	For example, if the tooltip is:
	`oracle/webcemter/collab/announcement/view/taskflows/main-view-definition.xml#announcement-main-view`
	then `task_flow_path` would be:
	`oracle+webcenter+collab+announcement+view+taskflows+main-view-definition.xml#announcement-main-view`

C.4 Factory Classes Available for Adding Dynamic Resources to the Catalog

Resource catalog adapters are used to add resources to a catalog dynamically, for example, a folder to display all available content repository connections to users. As the content of such a folder cannot be determined when you create the catalog, the adapter ensures that the folder is populated dynamically. To use an adapter, you must specify the factory class as part of the resource definition while adding the resource.

This section describes the supported factory classes. It includes the following topics:

- Section C.4.1, "XMLComponentFactory"
- Section C.4.2, "ContentUrlResourceFactory"
- Section C.4.3, "CustomFolderContextFactory"
- Section C.4.4, "DefaultFolderContextFactory"
- Section C.4.5, "ContentListFactory"
- Section C.4.6, "EnsembleContentProvider"

C.4.1 XMLComponentFactory

Use the `oracle.adf.rc.component.XmlComponentFactory` class inside a `<component>` construct to include an XML component in the catalog. The `XmlComponentFactory` class requires a single parameter named `xml` and the value of the parameter is a block of XML representing one or more components that can be added to a page. The following example shows the code to add a `Panel Customizable` component to the resource catalog:

```
<component id="pc" factoryClass="oracle.adf.rc.component.XmlComponentFactory">
  <attributes>
    <attribute attributeId="Title" value="Box"/>
    <attribute attributeId="Description" value="Container for other objects"/>
    <attribute attributeId="IconURI" value="/adf/webcenter/panelcustomizable_
```

```
qualifier.png"/>
  </attributes>
  <parameters>
    <parameter id="xml">
      <cust:panelCustomizable id="#"
xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"/>
    </parameter>
  </parameters>
</component>
```

For the detailed steps, see Section 14.3.5, "How to Add a Custom Component to a Resource Catalog."

C.4.2 ContentUrlResourceFactory

The ContentUrlResourceFactory class is used to include portal framework content from UCM connections. It is used when you add a URL resource of type Content to the catalog. The following example shows how the ContentUrlResourceFactory class can be used:

```
<url id="contentItem"
     factoryClass="oracle.webcenter.content.model.rc.ContentUrlResourceFactory"
     url="content://UCM/PersonalSpaces/weblogic/content.xml">
<attributes>
  <attribute value="Personal Document" isKey="false" attributeId="Title"/>
</attributes>
<parameters>
  <parameter id="templateView">SpaceTemplate</parameter>
  </parameters>
</url>
```

where id is the unique identifier for the resource, and url is the URL to access the resource. The URL must begin with content: if you use ContentUrlResourceFactory. In addition, you can add a templateView parameter to specify the Content Presenter display template to be used.

For more information, see Section 14.3.3, "How to Add a Link to a Resource Catalog."

C.4.3 CustomFolderContextFactory

The ContentFolderContextFactory class is used to list all the Content Repository connections available to the application. You can add a customFolder resource to the catalog and specify this factory class, as shown in the following example:

```
<customFolder id="AllConnections"

factoryClass="oracle.webcenter.content.model.rc.CustomFolderContextFactory" />
```

For more information about custom folders, see Section 14.3.6, "How to Add a Custom Folder to a Resource Catalog."

C.4.4 DefaultFolderContextFactory

In the WebCenter Portal context, the DefaultFolderContextFactory class is used to render the folder for the current portal. If the user is in the Home portal, then the user's personal folder is rendered. You can add a customFolder resource to the catalog and specify this factory class, as shown in the following example:

```
<customFolder id="GroupDocuments"
```

```
factoryClass="oracle.webcenter.doclib.model.rc.DefaultFolderContextFactory" />
```

For more information about custom folders, see Section 14.3.6, "How to Add a Custom Folder to a Resource Catalog."

C.4.5 ContentListFactory

The `ContentListFactory` class is used to add a dynamic list of folders to the catalog. You can add a `customFolder` resource to the catalog and specify this factory class, as shown in the following example:

```
<customFolder id="customFolder-folder" visible="#{true}" path=""
              factoryClass="oracle.webcenter.content.model.rc.ContentListFactory">
  <attributes>
    <attribute attributeId="Title" value="Folders List" isKey="false"/>
  </attributes>
  <parameters>
    <parameter id="datasource">UCM#dCollectionID:60</parameter>
    <parameter id="datasourceType">dsTypeFolderContents</parameter>
  </parameters>
 </customFolder>
```

The `ContentListFactory` class supports the following parameters:

- `datasource`: The data source of the content. The value depends on the value of `datasourceType`.
- `datasourceType`: The data source type of the content. Valid values are `dsTypeSingleNode`, `dsTypeFolderContents`, `dsTypeQueryExpression`, `dsTypeMultiNode`, and `dsTypeScenarioResults`.
- `templateView`: To specify the Content Presenter display template to be used.

For more information about using Content Presenter, see Chapter 29, "Adding Content Task Flows and Document Components to a Portal Page."

C.4.6 EnsembleContentProvider

The `EnsembleContentProvider` class is used to display a dynamic list of all registered pagelet producers. You can add a `customContent` resource to the catalog and specify this factory class, as shown in the following example:

```
<customContent
contentProviderClass="com.oracle.ensemble.interop.adf.EnsembleContentProvider"
               id="ensembleContentProvider" visible="true">
  <attributes
resourceBundle="oracle.webcenter.spaces.resource.DefaultGroupSpaceCatalogBundle"/>
</customContent>
```

For more information about custom content providers, see Section 14.3.7, "How to Add a Custom Content Provider to a Resource Catalog."

D

Guidelines for Creating Task Flows to Be Used in Composer-Enabled Pages

This appendix describes the guidelines for creating and consuming task flows effectively in your applications by implementing task flow parameters and customization and personalization options.

This appendix includes the following topics:

- Section D.1, "Guidelines for Effective Geometry Management and Pagination"
- Section D.2, "Guidelines for Efficient Use of Task Flow Parameters and Customization and Personalization Options"
- Section D.3, "Example of a Portal Framework Application Containing a Task Flow Created By Following the Guidelines"
- Section D.4, "Conclusion"

Task flows are reusable building blocks in Oracle ADF. Oracle WebCenter Portal provides task flows for you, or you can build your own task flows and add them to your Portal Framework application pages. When you add task flows to customizable pages (that is, Composer-enabled pages), users can personalize, customize, and edit these task flows at runtime. It is imperative that you design your task flows according to the rules set forth in Oracle WebCenter Portal publications. Failure to do so can result in problems when the task flows are consumed in portal pages, such as too much white space, too many scroll bars, or slow, jerky, and unpredictable responses when displaying large data sets.

To prevent these issues and provide a consistent user experience in terms of look and feel, layout design, and interaction, follow the instructions in this document for:

- Creating highly performant, cost-effective task flows
- Consuming these task flows effectively in your application by implementing task flow parameters and customization and personalization options

D.1 Guidelines for Effective Geometry Management and Pagination

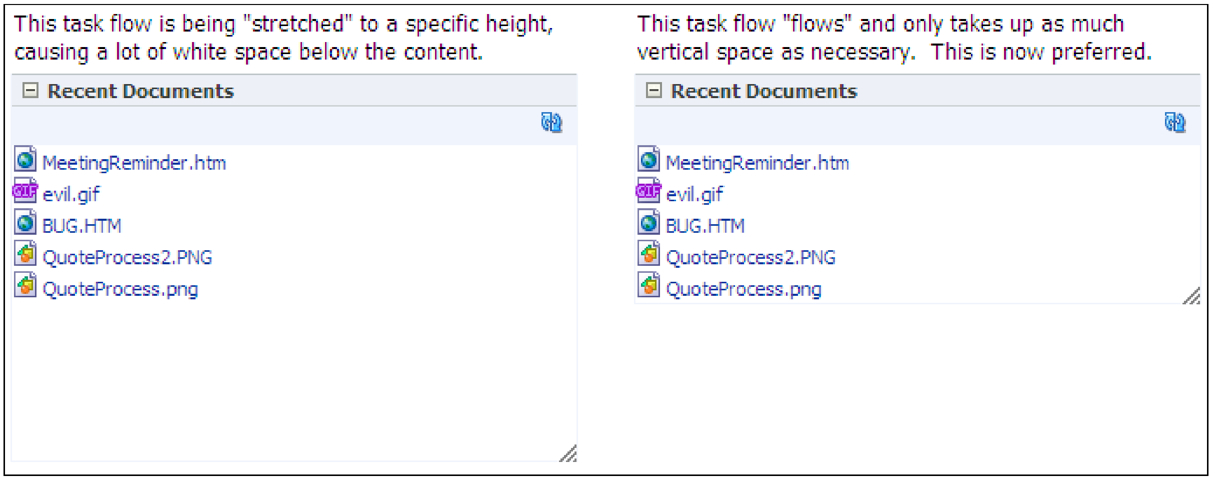
Effective geometry management results in efficient sizing and placement of task flows on the page. If the task flows are not designed properly, you end up with pages that have a slow response time or lots of unnecessary scroll bars or white spaces between components. For example, if you include a task flow containing very little data inside a container that stretches it (for example, a `Show Detail Frame` component), there is a lot of white space below the data in the task flow. Poor design can also cause scrolling to be slow and unpredictable in a task flow with a table displaying a large amount of data. To avoid such issues, be sure to design your task flows so that they flow and use a conventional pagination model when displaying large data sets.

Follow the guidelines in this section when designing new task flows for Portal Framework applications. Also, be sure to adhere to these guidelines when you edit existing Portal Framework application task flows.

D.1.1 Guideline 1: Create Task Flows that Flow

To avoid unnecessary white spaces in your task flows, you must ensure that the task flow content flows and is not stretched by the task flow container. A *stretching* task flow is one that is stretched to the height of the container, whereas a *flowing* task flow is one whose height is determined by its content, rather than by a stretching container or by itself having a fixed height. A flowing task flow with a small amount of data is shorter than one with large amounts of data, as shown in Figure D–1.

Figure D–1 Difference Between a Task Flow that Stretches and One that Flows



This task flow is being "stretched" to a specific height, causing a lot of white space below the content.

This task flow "flows" and only takes up as much vertical space as necessary. This is now preferred.

To design a flowing task flow, you must ensure that:

- The child component of the task flow does not have a fixed height.
- The `Show Detail Frame` component surrounding the task flow region does not have a fixed height (specified using its `contentStyle` attribute).

The following two examples illustrate how you might include flowing components inside task flows.

D.1.1.1 Example 1: Oracle ADF Faces Table Component with Its autoHeightRows Attribute Set to a Specific Value

Add an Oracle ADF Faces `Table` component within the task flow and set the `autoHeightRows` attribute on the `Table` to a specific value. By defining this attribute, the table height is adjusted according to the content (flow behavior), rather than the table having a fixed height or being stretched into a container (stretch behavior). The `autoHeightRows` attribute setting results in table data being displayed as follows:

- If you provide a value `H` for `autoHeightRows`, the table grows to a maximum of `H` rows.
- If the number of records returned from the data source is less than `H`, the table height wraps to that number.

- If the number of records is more than H, the table displays H rows and provides a scrollbar to view the remaining rows.
- If the autoHeightRows attribute is not used, the table displays at a fixed default height irrespective of the amount of data displayed.

Instead of specifying a fixed value for the autoHeightRows attribute, you can also provide an EL value so that the attribute is populated based on some logic you specify. You can enable customization and personalization on the task flow and provide an option for users to specify a value for this attribute. A value specified using the personalization option overrides a value specified using the customization option.

Example D–1 shows the attributes of a sample ADF Faces table component that is included inside a task flow called recent-pages-task-flow-definition. The autoHeightRows attribute is set to an EL expression that references a Java bean, recentPagesBean. This bean contains the logic to populate this attribute with a value provided by the end user (either as a personalization or a customization).

Example D–1 The autoHeightRows Attribute on a Sample ADF Faces Table

```
<af:table value="#{pageFlowScope.recentPagesBean.pages}"
          var="row" rowBandingInterval="0" id="t1"
          rowSelection="none" columnBandingInterval="0"
          width="100%" inlineStyle="border:none;width:100%;"
          columnStretching="last" horizontalGridVisible="true"
          verticalGridVisible="false"
          autoHeightRows="#{pageFlowScope.recentPagesBean.number_of_items_to_show_
at_a_time}"
            contentDelivery="immediate"
           fetchSize="#{pageFlowScope.recentPagesBean.number_of_items_to_query}">
      .
      .
      .
</af:table>
```

For a detailed description of the sample task flow displaying personalization and customization options for specifying the autoHeightRows value, see Section D.3, "Example of a Portal Framework Application Containing a Task Flow Created By Following the Guidelines."

To learn more about the autoHeightRows attribute, including requirements such as setting the contentDelivery attribute to immediate, see the tag documentation for <af:table> in *Tag Reference for Oracle ADF Faces*.

D.1.1.2 Example 2: Oracle ADF Faces Iterator Component Inside a Panel Group Layout with a Scrolling Layout

Add a Panel Group Layout component within the task flow and set its layout attribute to scroll. Then add an Iterator inside the Panel Group Layout. Add your content inside the Iterator. The content from the Iterator flows inside the Panel Group Layout.

Since the height of the Panel Group Layout depends on the content from the Iterator, specify a minimum and maximum height for the component by using min-height and max-height in the Panel Group Layout's inlineStyle attribute.

D.1.2 Guideline 2: Limit the Number of Records Displayed in a Task Flow

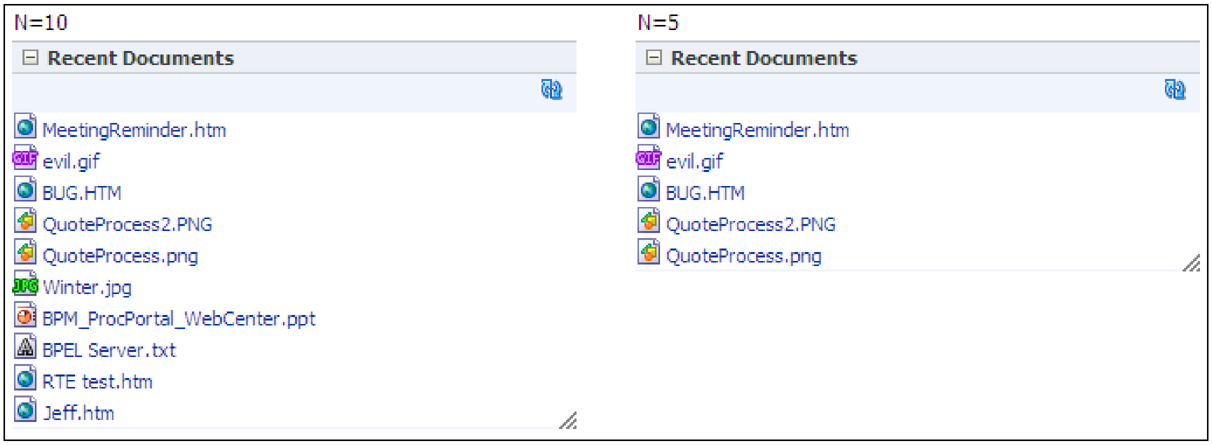
To avoid a slow and jerky response when scrolling large data sets in your task flow, you must limit the number of records to be fetched from the data source at a time. For example, if you have included an ADF faces `Table` component inside your task flow, limit the number of records to be displayed in the table. Use the `fetchSize` attribute on the `Table` to specify the number of records to be fetched from the data source in a single query. If you specify a fetch size of `N`, only `N` records are sent to the client from the data source.

The `fetchSize` and `autoHeightRows` attributes together control the number of rows displayed in the table. The relationship between these attributes is as follows:

- If `fetchSize` equals `autoHeightRows`, all records are displayed in the table.
- If `fetchSize` is less than `autoHeightRows`, the table is cropped at the `fetchSize` value.
- If `fetchSize` is greater than `autoHeightRows`, you can decide whether to display only as many records as the `autoHeightRows` value or provide pagination controls to display the remaining records. For example, you might include a More link at the bottom of the task flow or include pagination using Previous and Next links. For more information, see Section D.3, "Example of a Portal Framework Application Containing a Task Flow Created By Following the Guidelines."

Figure D–2 shows the difference between two task flows containing tables with equal `autoHeightRows` and `fetchSize` values of 10 and 5. The task flows wrap to the number of records displayed.

Figure D–2 Difference Between Task Flows with Different Fetch Size Values



Instead of specifying a fixed value for `fetchSize`, you can provide an EL value so that the attribute is populated based on some logic you specify. You can enable customization and personalization on the task flow and provide an option for users to specify a value for this attribute. A value specified using the personalization option overrides a value specified using the customization option.

The following example shows the attributes of a sample ADF Faces `Table` component that is included inside a task flow called `recent-pages-task-flow-definition`. The `fetchSize` attribute is set to an EL expression that references a Java bean, `recentPagesBean`. This bean contains the logic to populate this attribute with a customization value provided by the end user.

```
<af:table value="#{pageFlowScope.recentPagesBean.pages}"
          var="row" rowBandingInterval="0" id="t1"
          rowSelection="none" columnBandingInterval="0"
          width="100%" inlineStyle="border:none;width:100%;"
          columnStretching="last" horizontalGridVisible="true"
          verticalGridVisible="false"
```

```
           autoHeightRows="#{pageFlowScope.recentPagesBean.number_of_items_to_
show_at_a_time}"
          contentDelivery="immediate"
           fetchSize="#{pageFlowScope.recentPagesBean.number_of_items_to_query}">
      .
      .
      .
</af:table>
```

For a detailed description of the sample task flow displaying a customization option for specifying the `fetchSize` value, see Section D.3, "Example of a Portal Framework Application Containing a Task Flow Created By Following the Guidelines."

To learn more about the `fetchSize` attribute, see the tag documentation for `<af:table>` in *Tag Reference for Oracle ADF Faces*.

D.1.3 Guideline 3: Specify a Minimum Height for the Task Flow

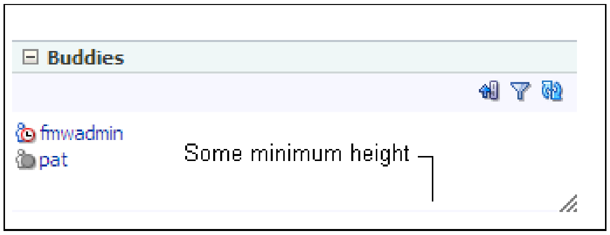
You can ensure that the task flow wraps to the height of the content by adhering to the first guideline, described in Section D.1.1, "Guideline 1: Create Task Flows that Flow."

To prevent the task flow from collapsing completely when there are no records, or seeming too short when there are only one or two records, specify a minimum height for the content.

For example, if your task flow contains a table with an `autoHeightRows` value specified, you can specify a `min-height` value using the table's `inlineStyle` attribute.

Figure D–3 shows a task flow displayed with a reasonable height even though it has only two rows.

Figure D–3 Task Flow with a Minimum Height Specified



D.1.4 Guideline 4: Include UI for Accessing Data Beyond the Display Limit

If a task flow is showing ten records, but the data source contains 100 records, you can design the task flow to do one of the following depending on the nature of data in the task flow:

- Display only ten records.

  For example, a Popular Discussion Topics task flow may use this first option if it is considered sufficient to show the ten most popular topics and not necessary to let users see even the eleventh most popular topic.

- Show a More link at the bottom of the task flow that opens a view with the ability to show more records.

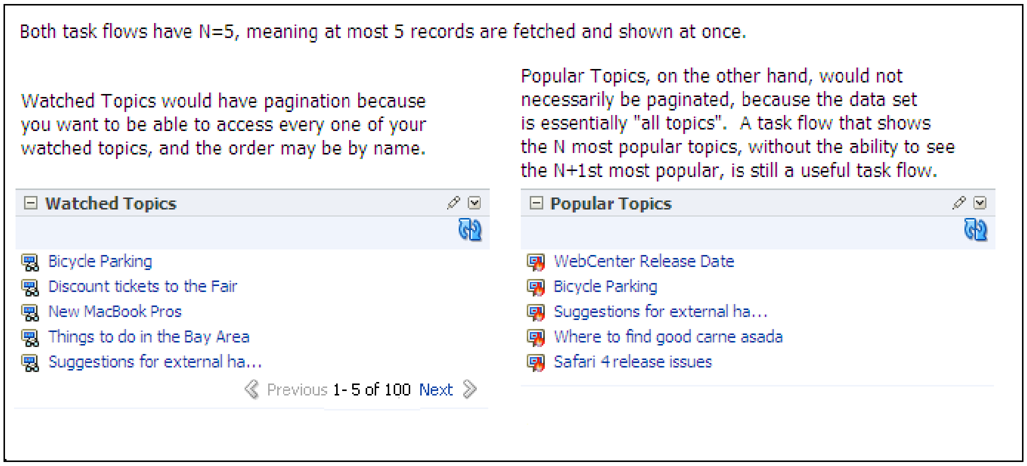
  For example, the People Connections task flow on a WebCenter Portal page displays a More link at the bottom.

- Show a pagination control with Previous and Next links.

For example, a Watched Discussion Topics task flow may display pagination controls, as users typically want to see all of their watched topics. Pagination is a common choice for task flows in which the data is not inherently ranked in order of importance or can be sorted in different ways, and where it is important to be able to access any record in the data set. The pagination control can be placed either above or below the content, depending on the nature of the content.

Figure D–4 shows the Watched Topics and Popular Topics task flows containing tables having a `fetchSize` of 5 but both having more than five records in the data source. The Watched Topics task flow displays five records with pagination at the bottom, but the Popular Topics task flow displays only five records with no UI option to view other records.

Figure D–4 Task Flows With and Without Pagination Controls



Both task flows have N=5, meaning at most 5 records are fetched and shown at once.

Watched Topics would have pagination because you want to be able to access every one of your watched topics, and the order may be by name.

Popular Topics, on the other hand, would not necessarily be paginated, because the data set is essentially "all topics". A task flow that shows the N most popular topics, without the ability to see the N+1st most popular, is still a useful task flow.

Watched Topics
Bicycle Parking
Discount tickets to the Fair
New MacBook Pros
Things to do in the Bay Area
Suggestions for external ha...
Previous 1- 5 of 100 Next
Popular Topics
WebCenter Release Date
Bicycle Parking
Suggestions for external ha...
Where to find good carne asada
Safari 4 release issues

Pagination Specifics

Here are a few simple recommendations for creating a pagination control:

- Add a pagination message in the format `1 to N of M [prev][next]`.
- Align the pagination elements to the right so that the Previous and Next links do not move as you navigate pages.
- Ensure that the Next or Previous option is grayed out when it is not required.

For an example of how to use pagination controls, see Section D.3, "Example of a Portal Framework Application Containing a Task Flow Created By Following the Guidelines."

You can customize pagination controls using the following parameters:

- Position of Previous and Next links
- Labels for Previous and Next links, for example, Newer and Older
- Icons used with Previous and Next links
- The words or symbols used to represent to and of, for example, `1-5 of 100`
- Options for permitting random access, for example, `Prev 1 2 3 ... Next Last`

D.2 Guidelines for Efficient Use of Task Flow Parameters and Customization and Personalization Options

While creating a task flow, you can create parameters and provide options for users to customize and personalize the task flow. You can enable privileged users to customize the task flow for all users (customization) and edit the task flow's properties and parameters in Composer. You can enable all users viewing the page to customize their view of the page (personalization). This section provides guidelines for implementing task flow parameters and the customization and personalization options.

Table D–1 provides an overview of the various task flow editing options available to users.

Table D–1 Options Used to Define Task Flow Appearance and Behavior

Option	Description	When to Use	Who can See It
Parameters	A small set of ideally scalar values, used to program a task flow or set its context. Each parameter must have a good display name and description (which must include possible values and examples).	Use for a context like the city or pin code so that you can add multiple instances of the task flow, each showing different information or programmed to show information based on receiving a value from the page, programmatically or using the URL. In WebCenter Portal, you can use a parameter for a context like portal name. Precedence: 3 This value overrides built-in values in the task flow.	Users with Edit or Customize permission can see parameters in Composer's Component Properties dialog while editing a page. In WebCenter Portal, moderators can see and edit task flow parameters. When a task flow is exposed as a portlet, page designers can see these parameters while setting up the portlet.

Table D–1 (Cont.) Options Used to Define Task Flow Appearance and Behavior

Option	Description	When to Use	Who can See It
Customization/ Preferences	These two are synonymous. Customizations are typically considered changes a business user makes to the task flow. These changes are available to all viewers of the page and are used to specify values for options defined in the task flow. For example, users can decide whether to display the author name or revision date for a document. Preferences are referred to as a definition of the content in the task. For example, a query definition in the Document Viewer task flow, or a query in OmniPortlet.	Use these when the task flow must provide a user interface that assists the user in defining the task flow behavior. That is, when Lists of Values or specific UI components such as images or radio buttons guide the user better, or when the task flow setup is a multiple step wizard-style interface. Such assistance cannot be provided through parameters because they are strictly scalar values, with no assistance other than a description. Precedence: 2 If there is an identical parameter value (for example, portal name), customization overrides that value.	Users with can see the customization or preferences options. Typically, customization or preferences options are available on the chrome surrounding the task flow in Edit mode. However, users can also see these options on the chrome in View mode of the page. When a task flow is exposed as a portlet, the page designer sees these as Edit Defaults options while setting up the portlet.
Personalization	A subset of the customization and preferences options. You cannot have personalization options that are not also customization options.	Use these to allow all viewers of the page to tweak and tune the visual aspects of the task flow or the amount of data shown to them. For example, to set the number of items to display. Precedence: 1 If there is an identical customization value (for example, number of items), personalization overrides that value.	All end users with View permission can see these options. Personalization options are available on the chrome surrounding the task flow. When WebCenter Portal task flows are exposed as portlets, the Personalization options allow end users to tweak the same visual aspects.
Implicit Personalization	Options that are persisted for end users from session to session. Implicit personalization options are not available on the chrome surrounding the task flow, but are actions that can be performed directly in the body of the task flow. For example, sorting and column resizing are implicit personalization options.	Use these options sparingly and only for options that are frequently changing. Options like column resizing and sorting are available for free from Oracle ADF.	All end users with View permission on the page can perform personalizations.

To improve application performance, follow the guidelines in this section while implementing parameters and customization and personalization options in task flows.

D.2.1 Guidelines for Implementing Task Flow Parameters

At design time (in JDeveloper), you can create parameters by defining them in the task flow definition XML file. At runtime, users with Edit or Customize permission can edit task flow parameters in the Component Properties dialog in Composer. To provide a good user experience, you must adhere to the following guidelines when creating parameters:

- Provide a display name that is meaningful.
- Provide a description for each parameter, along with examples and the possible values it can take.

The following example shows the code to define a parameter called `layoutStyle` in the task flow definition file:

```
<input-parameter-definition>
  <name>layoutStyle</name>
  <description> Used to control whether the documents must display as a list, with
icons, or with document details.
Allowed values are list, icon, and detail.</description>
  <display-name>Layout Style</display-name>
</input-parameter-definition>
```

D.2.2 Guidelines for Implementing Customization

Users with Edit or Customize permission can access customization options from the chrome surrounding the task flow.

You must adhere to the following guidelines while implementing customization in your task flow:

- Customization options must be a subset of the task flow's parameters.
- Implement a view fragment within the task flow and expose an outcome to open this view in a separate dialog. For example, the control flow rule to invoke a view called `advancedEditPopupView` in a dialog is as follows:

  ```
  <control-flow-case>
    <from-outcome>dialog:advancedEditPopup</from-outcome>
    <to-activity-id>advancedEditPopupView</to-activity-id>
  </control-flow-case>
  ```

  Adhering to this guideline is mandatory for new task flows.
- Implement a view fragment within the task flow and expose an outcome to transition inline to this view. For example, the control flow rule to invoke a view called `advancedEditView` within the same screen is as follows:

  ```
  <control-flow-case>
    <from-outcome>advancedEdit</from-outcome>
    <to-activity-id>advancedEditView</to-activity-id>
  </control-flow-case>
  ```

  Although you can implement a task flow in this way, it is recommended that you expose an outcome to open the view in a dialog.
- Ensure that customizations are saved in the MDS level set up by the application. Unlike task flow parameters, which are stored in the task flow definition itself, customizations are saved in the Metadata Storage (MDS). If you do not explicitly specify the MDS layer to be used to save task flow customizations, customization metadata and the consuming application metadata may get stored in different layers.

  To ensure that customizations are saved to the same layer as application metadata, you must clone the application's MDS session in the task flow's preference file and reference that while configuring customization. For an example of how this is implemented, see Section D.3, "Example of a Portal Framework Application

Containing a Task Flow Created By Following the Guidelines."

D.2.3 Guidelines for Implementing Personalization

All users viewing the page can access personalization options from the chrome surrounding the task flow in View mode of the page.

You must adhere to the following guidelines while implementing personalization in your task flow:

- Ensure that personalization options are a subset of the customization options you define on the task flow.
- If a key aspect of the task flow is to show objects—for example, documents, users, or requests—then you must include a personalization option for users to set the maximum number of objects to display.
- Implement a view fragment within the task flow, and expose an outcome to open this view in a dialog. For example, the control flow rule to invoke a view called simpleEditPopupView in a dialog is as follows:

  ```
  <control-flow-case>
    <from-outcome>dialog:simpleEditPopup</from-outcome>
    <to-activity-id>simpleEditPopupView</to-activity-id>
  </control-flow-case>
  ```

  Adhering to this guideline is mandatory for new task flows.
- Implement a view fragment within the task flow and expose an outcome to transition inline to the view. For example, the control flow rule to invoke a view called simpleEditView within the same screen is as follows:

  ```
  <control-flow-case>
    <from-outcome>simpleEdit</from-outcome>
    <to-activity-id>simpleEditView</to-activity-id>
  </control-flow-case>
  ```

  Although you can implement a task flow in this way, it is recommended that you make a transition to bring this view up as a dialog.
- Ensure that personalizations are written to the MDS level set up by the application. Unlike task flow parameters, which are stored in the task flow definition itself, personalizations are saved in MDS. If you do not explicitly specify the MDS layer to be used to save personalizations, personalization metadata and application metadata may get stored in different layers.

  To ensure that personalizations are saved to the same layer as application metadata, you must clone the application's MDS session in the task flow's preference file and reference that while configuring personalization. For an example of how this is implemented, see Section D.3, "Example of a Portal Framework Application Containing a Task Flow Created By Following the Guidelines"

D.2.4 Guidelines for Implementing Implicit Personalization

Users perform implicit personalizations while using the task flow itself, by way of resizing, sorting table columns, and so on. Personalization options in this case are not invoked using dialogs and users may not even be aware that they are actually personalizing a page.

Adhere to the following guidelines while implementing implicit personalization:

- Do not overload the task flow with implicit personalization attributes. Select a few key, frequently used attributes to expose as implicit. Infrequently used or complex attributes can be handled with explicit personalization.
- Do not implement implicit personalization such that a dialog is invoked. Implicit personalization must be performed in the body of the task flow itself.

D.3 Example of a Portal Framework Application Containing a Task Flow Created By Following the Guidelines

As a companion to this document, a sample Portal Framework application was developed. This sample application, called `RecentPages`, is used as an example to illustrate how you can build a near-perfect task flow by adhering to the guidelines in this document. The `RecentPages` application contains a customizable page, `Welcome.jspx`, which contains a task flow named `recent-pages-taskflow-definition` created by following all the required guidelines.

This section only provides a high-level description of how the task flow was implemented. For detailed information about using task flows and Composer, see the following guides:

- *Fusion Developer's Guide for Oracle Application Development Framework*, for information about creating task flows.
- *Building Portals with Oracle WebCenter Portal*, for information about editing, customizing, and personalizing task flows in Composer.

The `RecentPages` sample application is available for download from the Oracle WebCenter Portal 11g Demonstrations and Samples page on OTN at `http://webcenter.oracle.com`. Click the link named "Sample Application with Optimal Task Flows" under Oracle Composer Samples.

The `RecentPages` application contains the following projects:

- A Model project
- A Portal project named `RecentPagesTaskFlow` that contains the `recent-pages-task-flow-definition` task flow
- Another Portal project named `WebPages` that contains the JSPX page in which the task flow is consumed

D.3.1 The RecentPagesTaskFlow Project

This project contains the task flow created by following the guidelines. The files of significance in this project are as follows:

- The `recent-pages-task-flow-definition.xml` file
- The `mainView.jsff` fragment
- The `simpleEditPopupView.jspx` page
- The `advancedEditPopupView.jspx` page
- The `recentPagesBean` Java bean
- The `Preference` Java bean

D.3.1.1 The recent-pages-task-flow-definition.xml File

This is an Oracle ADF task flow definition containing three views: `mainView`, `simpleEditPopupView`, and `advancedEditPopupView`. The task flow is designed such that `mainView` displays a list of recently created pages in the application, `simpleEditPopupView` displays a personalization option to all users, and `advancedEditPopupView` displays customization options to users with Edit or Customize permission.

The following table breaks down the code in `recent-pages-task-flow-definition.xml` and explains each snippet.

The outcomes from `mainView` to `simpleEditPopupView` and `advancedEditPopupView` are called `dialog:simpleEditPopupview` and `dialog:advancedEditPopupView` respectively. This is to ensure that the views open in separate dialogs, not inline. In addition, this task flow provides Refresh, Previous, and Next outcomes on `mainView`. The `simpleEditPopupView` and `advancedEditPopupView` views provide Save and Cancel outcomes.

Table D–2 describes significant sections of code in the `recent-pages-task-flow-definition.xml` file.

Table D–2 Sections Of Code in the Task Flow Definition File

Code	Description
`<default-activity>mainView</default-activity>`	Defining the default view for the task flow: `mainView`

`<managed-bean>`
`  <managed-bean-name>recentPagesBean</managed-bean-name>`
`  <managed-bean-class>view.RecentPangesBean</managed-bean-class>`
`  <managed-bean-scope>pageFlow</managed-bean-scope>`
`</managed-bean>`
	Referencing the `recentPagesBean` Java bean that is associated with the task flow definition. This bean was created as part of the `view` package.

`<view id="mainView">`
`  <page>/mainView.jsff</page>`
`</view>`
`  <view id="simpleEditPopupView">`
`  <page>/simpleEditPopupView.jspx</page>`
`</view>`
`  <view id="advancedEditPopupView">`
`  <page>/advancedEditPopupView.jspx</page>`
`</view>`
	Mapping task flow views to pages or page fragments. For example, `mainView` is associated with `mainView.jsff`.

Table D–2 (Cont.) Sections Of Code in the Task Flow Definition File

Code	Description

<control-flow-rule>
   <from-activity-id>mainView</from-activity-id>
   <control-flow-case>
       <from-outcome>refresh</from-outcome>
       <to-activity-id>mainView</to-activity-id>
   </control-flow-case>
   <control-flow-case>
       <from-outcome>dialog:simpleEditPoup</from-outcome>
       <to-activity-id>simpleEditPopupView</to-activity-id>
   </control-flow-case>
   <control-flow-case>
       <from-outcome>next</from-outcome>
        <to-activity-id>mainView</to-activity-id>
   </control-flow-case>
   <control-flow-case>
        <from-outcome>previous</from-outcome>
        <to-activity-id>mainView</to-activity-id>
   </control-flow-case>
   <control-flow-case>
         <from-outcome>dialog:advancedEditPopup</from-outcome>
         <to-activity-id>advancedEditPopupView</to-activity-id>
   </control-flow-case>
</control-flow-rule>
	Control flow rules from `mainView`. Each control flow case defines an outcome and a corresponding target view.

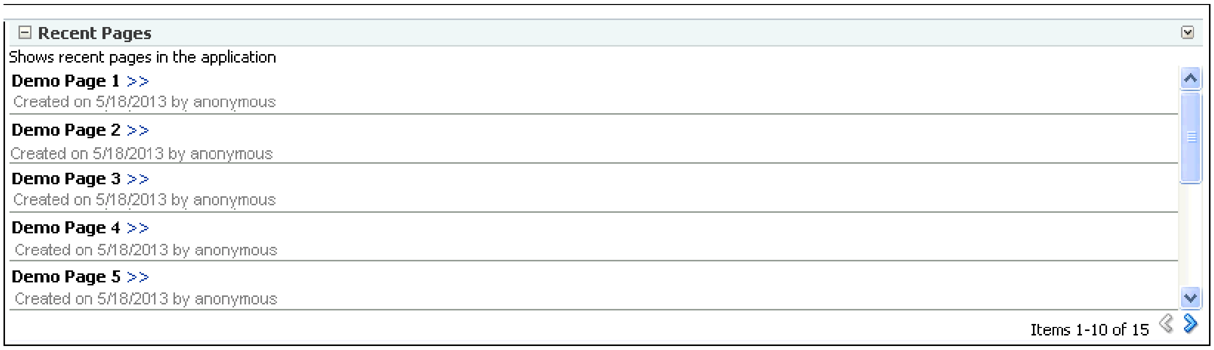
<control-flow-rule>
  <from-activity-id>simpleEditPopupView</from-activity-id>
   <control-flow-case>
        <from-outcome>save</from-outcome>
        <to-activity-id>mainView</to-activity-id>
   </control-flow-case>
   <control-flow-case>
         <from-outcome>cancel</from-outcome>
         <to-activity-id>mainView</to-activity-id>
   </control-flow-case>
</control-flow-rule>
	Control flow rules from `simpleEditPopupView`. Each control flow case defines an outcome and a corresponding target view.

<control-flow-rule> <from-activity-id>advancedEditPopupView</from-activity-id> <control-flow-case> <from-outcome>save</from-outcome> <to-activity-id>mainView</to-activity-id> </control-flow-case> <control-flow-case> <from-outcome>cancel</from-outcome> <to-activity-id>mainView</to-activity-id> </control-flow-case> </control-flow-rule>	Control flow rules from `advancedEditPopupView`. Each control flow case defines an outcome and a corresponding target view.

D.3.1.2 The mainView.jsff Fragment

Figure D–5 displays a list of recently created pages in the application. At runtime, the list looks like this:

Figure D–5 The mainView Fragment in the Task Flow



⊟ Recent Pages

Shows recent pages in the application

Demo Page 1 >>
Created on 5/18/2013 by anonymous

Demo Page 2 >>
Created on 5/18/2013 by anonymous

Demo Page 3 >>
Created on 5/18/2013 by anonymous

Demo Page 4 >>
Created on 5/18/2013 by anonymous

Demo Page 5 >>
Created on 5/18/2013 by anonymous

Items 1-10 of 15

The design features of this view fragment are as follows:

- The `autoHeightRows` attribute is defined on the table to control the number of items displayed in the table. The task flow then wraps to the height of the items displayed.
- The `fetchSize` attribute is defined to control the number of items to be fetched from the data source and displayed in the table.
- Pagination controls are included to display a message in the format "`Items 1-4 of 25`" along with previous and next icons.

Table D–3 describes significant sections of code in the `mainView.jsff` fragment.

Table D–3 The mainView Fragment Code

Code	Description

`<af:panelGroupLayout id="pgl1" layout="vertical">`
`    <af:outputText value="Shows recent pages in the application" id="ot1"/>`
	A single top-level component-`Panel Group Layout`. This component is designed to ensure that the task flow content flows vertically and always stretches horizontally. This allows geometry management.

`<af:table value="#{pageFlowScope.recentPagesBean.pages}" var="row"`
`   rowBandingInterval="0" id="t1" rowSelection="none"`
`    columnBandingInterval="0" width="100%"`
`    inlineStyle="border:none;width:100%;" columnStretching="last"`
`    horizontalGridVisible="true" verticalGridVisible="false"`
`autoHeightRows="#{pageFlowScope.recentPagesBean.number_of_items_to_show_at_a_time}"`
`    contentDelivery="immediate"`
`fetchSize="#{pageFlowScope.recentPagesBean.number_of_items_to_query}">`
	A table component that is a child of the `Panel Group Layout`.
	Table attributes:
	`autoHeightRows` (`N`): The number of items to display in the table at one time. An EL value is specified here such that a Java bean, `recentPagesBean`, populates this attribute with a value specified by the user at runtime.
	If there are more than `N` items to display, a scrollbar appears on the task flow.

Table D–3 (Cont.) The mainView Fragment Code

<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td></td><td>fetchSize (M): The maximum number of items to be fetched from the data source. An EL value is specified here such that a Java bean, recentPagesBean, populates this attribute with a value specified by the user at runtime.
If M is greater than N, pagination controls appear on the task flow to enable users to view the remaining items.</td></tr>
<tr><td><pre>
<af:column sortable="false" headerText="#{null}"
align="start" id="c1">
  <af:panelGroupLayout id="pgl11" styleClass="nowrap"
inlineStyle="padding-top:2px; font-weight:bold;">
    <af:outputText value="#{row.title}" id="ot4"/>
    <af:goLink destination="/faces#{row.contentMRef}"
              text=">>" targetFrame="_blank" id="gl1"/>
   </af:panelGroupLayout>
   <af:panelGroupLayout id="pgl10"
styleClass="AFFieldTextDisabled nowrap"
                       inlineStyle="padding-top:2px">
    <af:outputText value="Created on " id="ot7"/>
   <af:outputText value="#{row.createDate}" id="ot8"/>
    <af:outputText value=" by #{row.createdBy}"
id="ot9"/>
  </af:panelGroupLayout>
</af:column>
</pre></td><td>The table contains a single column that displays a list of pages in the application along with the creation date and author for each page.
Implicit personalization capability to sort the table column is turned off.</td></tr>
</table>

Table D–3 (Cont.) The mainView Fragment Code

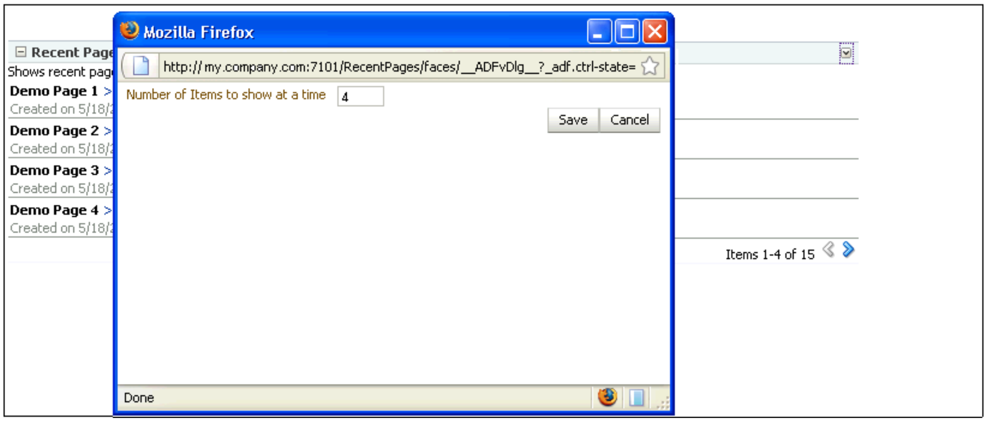
Code	Description

`<af:panelGroupLayout id="pgl2" halign="end"`
`layout="vertical"`
`          inlineStyle="margin:1px"`
 	
`rendered="#{pageFlowScope.recentPagesBean.showPageContro`
`l}">`
`   <af:panelGroupLayout id="pgl3">`
`     <af:outputText`
`value="#{pageFlowScope.recentPagesBean.footerText}"`
`               id="ot2"/>`
`     <af:commandLink id="cl1"`
 	
`actionListener="#{pageFlowScope.recentPagesBean.previous`
`}"`
`               disabled="#{not`
`pageFlowScope.recentPagesBean.showPrevious}"`
`               action="previous">`
`     <af:image`
`source="#{pageFlowScope.recentPagesBean.showPrevious ?`
`'/adf/webcenter/shuttleleft_ena.png' :`
`'/adf/webcenter/shuttleleft_dis.png'}"`
`                     id="i1" shortDesc="previous"/>`
`     </af:commandLink>`
`     <af:commandLink id="cl2"`
 	
`actionListener="#{pageFlowScope.recentPagesBean.next}"`
`               disabled="#{not`
`pageFlowScope.recentPagesBean.showNext}"`
`               action="next">`
`     <af:image`
`source="#{pageFlowScope.recentPagesBean.showNext ?`
`'/adf/webcenter/shuttleright_ena.png' :`
`'/adf/webcenter/shuttleright_dis.png'}"`
`                id="i2" shortDesc="next"/>`
`      </af:commandLink>`
`    </af:panelGroupLayout>`
`</af:panelGroupLayout>`
	Pagination controls to display records beyond those that are displayed in the table.
	The `recentPagesBean` code defines what is displayed to users at runtime.

D.3.1.3 The simpleEditPopupView.jspx Page

Figure D–6 displays an option to select the number of items to be displayed in the task flow. All users viewing the page can personalize the task flow using this option. The value specified by a user is applicable only for that user's view of the page.

Figure D–6 The simpleEditPopupView Page



Number of Items to show at a time 4

Table D–4 describes significant sections of code in the simpleEditPopupView.jspx page.

Table D–4 Code in the Personalization Page

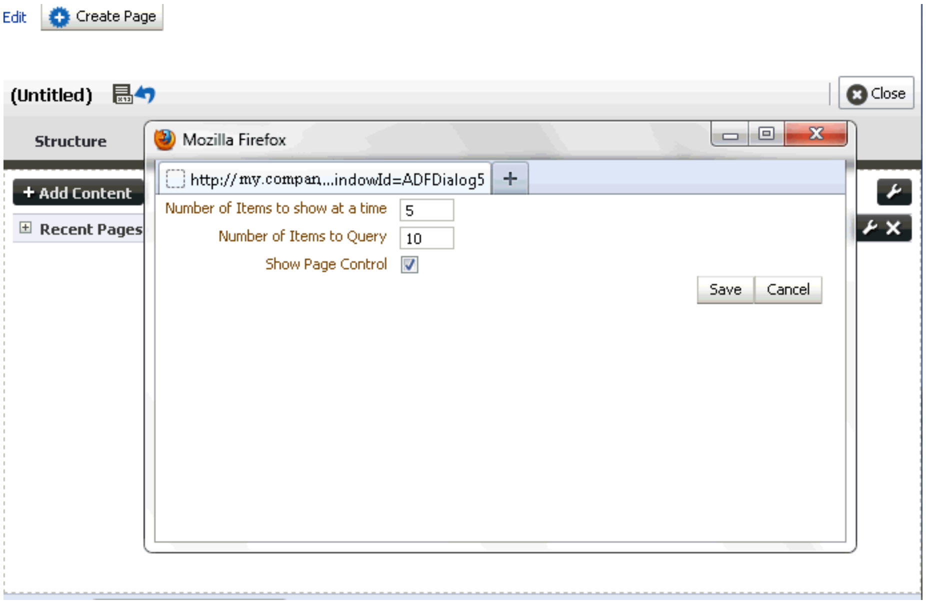
Code	Description

<af:panelStretchLayout id="psl1">
  <f:facet name="center">
    <af:group id="group1">
      <af:panelFormLayout id="pfl1">
        <af:inputText label="Number of Items to show at a
time"
                      id="it1"
     value="#{pageFlowScope.recentPagesBean.number_of_
items_to_show_at_a_time}"
                      columns="3"/>
      </af:panelFormLayout>
      <af:panelGroupLayout id="pgl2"
                           layout="horizontal"
                           halign="right"
                        inlineStyle="width:500px;">
        <af:commandButton text="Save" id="cb1"
 	
action="#{pageFlowScope.recentPagesBean.saveSettings}"/>
        <af:commandButton text="Cancel" id="cb2"
                          action="cancel"
 	
actionListener="#{pageFlowScope.recentPagesBean.cancel}"/
>
      </af:panelGroupLayout>
    </af:group>
  </f:facet>
</af:panelStretchLayout>
	A single top-level Panel Stretch Layout component with a Group component in its center facet. Within this group are a Panel Form Layout and a Panel Group Layout.
	The Panel Form Layout contains an Input Text component, which is populated with a value returned by recentPagesBean.
	The Panel Group Layout contains two Command Button components called Save and Close, which are wired to events defined in recentPagesBean.

D.3.1.4 The advancedEditPopupView.jspx Page

This page displays customization options to users with Edit or Customize permission. At runtime, this page opens in a separate dialog and displays options to select the number of items to be displayed and number of items to be queried, and a check box to show or hide pagination controls.

Figure D–7 The advancedEditPopupView.jspx Page



Number of Items to show at a time 5

Number of Items to Query 10

Show Page Control ☑

Table D–5 describes significant sections of code in the `advancedPopupView.jspx` page.

Table D–5 Code in the Customization Page

Code	Description

`<af:panelStretchLayout id="psl1">`
`  <f:facet name="center">`
`    <af:group id="group1">`
`      <af:panelFormLayout id="pfl1">`
`        <af:inputText label="Number of Items to show at a`
`time"`
`                      id="it1"`
`            value="#{pageFlowScope.recentPagesBean.number_`
`of_items_to_show_at_a_time}"`
`                     columns="3"/>`
`        <af:inputText label="Number of Items to Query"`
`id="it2"`
 	
`value="#{pageFlowScope.recentPagesBean.number_of_items_to_`
`query}"`
`                      columns="3"/>`
`         <af:selectBooleanCheckbox label="Show Page Control"`
`                                    id="sbc1"`
 	
`value="#{pageFlowScope.recentPagesBean.showPageControl}"/>`
`      </af:panelFormLayout>`
`      <af:panelGroupLayout id="pgl2"`
`                           layout="horizontal"`
`                           halign="right"`
`                          inlineStyle="width:500px;">`
`        <af:commandButton text="Save" id="cb1"`
 	
`action="#{pageFlowScope.recentPagesBean.saveSettings}"/>`
`        <af:commandButton text="Cancel" id="cb2"`
`                          action="cancel"`
 	
`actionListener="#{pageFlowScope.recentPagesBean.cancel}"/>`
`      </af:panelGroupLayout>`
`    </af:group>`
`  </f:facet>`
`</af:panelStretchLayout>`
	A single top-level `Panel Stretch Layout` component with a group component in its center facet. Within this group are a `Panel Form Layout` and a `Panel Group Layout`.
	The `Panel Form Layout` contains two `Input Text` components and a `Select Boolean Checkbox`. These components are populated with values returned by `recentPagesBean`.
	The `Panel Group Layout` contains two `Command Button` components called Save and Close, which are wired to events defined in `recentPagesBean`.

D.3.1.5 The recentPagesBean Java Bean

This Java bean contains the logic for the following:

- Displaying a specific number of items in the table based on user input.
- Handling the Save and Cancel events triggered from the `simpleEditPopupView` and `advancedEditPopupView` pages.
- Rendering Previous and Next icons while implementing pagination.
- Displaying the pagination message after retrieving the total number of pages.
- Referencing the `Preference` bean that defines where customizations and personalizations must be saved.

You can find the code for this bean in the `RecentPages` application.

Table D–6 describes significant sections of code in the `recentPagesBean.java` file.

Table D–6 The recentPagesBean Java Bean Code

Code	Description

`private String _getPreferenceFileName()`
`  {`
`    String taskflowId =`
	Logic for identifying the task flow and retrieving the instance-level preference file for the currently running task flow.

`ControllerContextFwk.getInstanceFwk().getCurrentVi`
`ewPortFwk().getClientId();`
`    if (taskflowId == null)`
`    {`
`      taskflowId =`
	Logic for identifying the task flow and retrieving the instance-level preference file for the currently running task flow.

`ControllerContextFwk.getInstanceFwk().getCurrentVi`
`ewPortFwk().getParentViewPort().getClientId();`
`    }`
`    String preferenceFileName =`
`     PREFERENCE_BASE + taskflowId.replace(".", "_`
`") + ".xml";`
`    return preferenceFileName;`
`  }`
`  private static PageServiceBean`
`getPageServiceBean()`
`  {`
`    String beanName = "pageServiceBean";`
`    Object bean = null;`
`    FacesContext ftx =`
`FacesContext.getCurrentInstance();`
`    bean =`
`ftx.getExternalContext().getRequestMap().get(beanN`
`ame);`
`     if (bean == null)`
`    {`
`      ELContext elContext = ftx.getELContext();`
`      ExpressionFactory exFactory =`
`ftx.getApplication().getExpressionFactory();`
`      ValueExpression expr =`
`       exFactory.createValueExpression(elContext,`
`"#{" + beanName + "}",PageServiceBean.class);`
`      bean = expr.getValue(elContext);`
`    }`
`    return (PageServiceBean) bean;`
`  }`
	Logic for identifying the task flow and retrieving the instance-level preference file for the currently running task flow.

Table D–6 (Cont.) The recentPagesBean Java Bean Code

<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td><pre>
public String saveSettings() throws Exception
  {
    if (number_of_items_to_query != null &&
        !number_of_items_to_query.isEmpty())
    {
      Preference.setNumberOfItemsToQuery(_
getPreferenceFileName(),

Integer.parseInt(number_of_items_to_query));
    }
    if (this.number_of_items_to_show_at_a_time !=
null &&
        !this.number_of_items_to_show_at_a_
time.isEmpty())
    {
      Preference.setNumberOfItemsToShow(_
getPreferenceFileName(),

Integer.parseInt(number_of_items_to_show_at_a_
time));
    }
    if (_showPageControl != null)
    {
      Preference.setShowPageControl(_
getPreferenceFileName(),_showPageControl);
    }

AdfFacesContext.getCurrentInstance().returnFromDia
log(null, null);
    return "save";
  }
</pre></td><td>Logic to define behavior of Save button in the personalization or customization dialog. Settings are saved in the task flow preference file.</td></tr>
<tr><td><pre>
public void setNumber_of_items_to_show_at_a_
time(String number_of_items_to_show_at_a_time)
 {
    this.number_of_items_to_show_at_a_time =
       number_of_items_to_show_at_a_time;
  }
  public String getNumber_of_items_to_show_at_a_
time()
  {
    String query =

Integer.toString(Preference.getNumberOfItemsToShow
(_getPreferenceFileName()));
    return query;
  }
</pre></td><td>Logic to populate the <code>Number of Items to show at a time</code> field in the personalization or customization dialog.</td></tr>
</table>

Table D–6 (Cont.) The recentPagesBean Java Bean Code

<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td><pre>
public void setNumber_of_items_to_query(String
number_of_items_to_query)
  {
    this.number_of_items_to_query = number_of_
items_to_query;
  }
  public String getNumber_of_items_to_query()
  {
    String query =

Integer.toString(Preference.getNumberOfItemsToQuer
y(_getPreferenceFileName()));
    return query;
  }
</pre></td><td>Logic to populate the <code>Number of Items to Query</code> field in the customization dialog.</td></tr>
<tr><td><pre>
public boolean getShowPageControl()
  {
    boolean showPageControl =
      Preference.getShowPageControl(_
getPreferenceFileName());
    return showPageControl;
  }
  public void setShowPageControl(boolean
showPageControl)
  {
    _showPageControl = showPageControl;
  }
</pre></td><td>Logic to set the <code>Show Page Control</code> check box in the customization dialog.</td></tr>
<tr><td><pre>
public List<PageDef> getPages()
{
  PageServiceBean psb = getPageServiceBean();
   List<PageDef> pages = psb.getPages();
   int start = getStart();
   int end = getEnd();
  if (start < 0 || start > pages.size())
  {
   start = 0;
  }
  if (end < 0 || end > pages.size())
  {
    end = pages.size();
  }
  List<PageDef> tempPages = pages.subList(start,
end);
  return tempPages;
}
public int getEnd()
{
  String items_to_query = this.getNumber_of_items_
to_query();
  int offset = Integer.parseInt(items_to_query);
  int end = getStart() + offset;
  if (end > this.getTableSize())
  {
    end = getTableSize();
  }
  return end;
}
</pre></td><td>Logic to retrieve the list of pages to display in the current view of the table.</td></tr>
</table>

Table D–6 (Cont.) The recentPagesBean Java Bean Code

Code	Description

public int getTableSize()
{
  int tableSize = -1;
   try
  {
    PageServiceBean psb = getPageServiceBean();
     List<PageDef> pages = psb.getPages();
     tableSize = pages.size();
   }
  catch (Exception e)
  {
    System.out.println(e.toString());
  }
   return tableSize;
}
	Logic to set the table size to the number of records retrieved.

public void cancel(ActionEvent actionEvent)
  {
 	
AdfFacesContext.getCurrentInstance().returnFromDia
log(null, null);
  }
	Logic to define behavior of Cancel button in the personalization or customization dialog.

public void previous(ActionEvent actionEvent)
  {
    int page_num = getPageNumber();
    page_num--;
    if (page_num <= 0)
    {
      page_num = 1;
    }
 	
RequestContext.getCurrentInstance().getPageFlowSco
pe().put("page_num", page_num);
  }
	Logic to define behavior of Previous action in the task flow's pagination control.

public void next(ActionEvent actionEvent)
{
  int page_num = getPageNumber();
  page_num++;
  String items_to_query =
 this.getNumber_of_items_to_query();
  int offset = Integer.parseInt(items_to_query);
  int total_page_num = getTotalPageNumber();
  if (page_num > total_page_num)
  {
    page_num = this.getTableSize()
 / offset;
  }
 	
RequestContext.getCurrentInstance().getPageFlowSco
pe().put("page_num", page_num);
  }
	Logic to define behavior of Next action in the task flow's pagination control.

Table D–6 (Cont.) The recentPagesBean Java Bean Code

Code	Description

`public boolean isShowPrevious()`
`  {`
`    int page_num = getPageNumber();`
`    if (page_num <= 1)`
`    {`
`      return false;`
`    }`
`    else`
`    {`
`      return true;`
`    }`
`  }`
	Logic to render Previous icon

`public boolean isShowNext()`
`  {`
`    int page_num = getPageNumber();`
`    if (page_num >= getTotalPageNumber())`
`    {`
`      return false;`
`    }`
`    else`
`    {`
`      return true;`
`    }`
`  }`
	Logic to render Next icon.

`public int getTotalPageNumber()`
`  {`
`    String items_to_query =`
`     this.getNumber_of_items_to_query();`
`    int offset = Integer.parseInt(items_to_query);`
`    int total_page_num = this.getTableSize()`
`    / offset;`
`    if (getTableSize() % offset > 0)`
`    {`
`      total_page_num++;`
`    }`
`    return total_page_num;`
`  }`
	Logic to return the total number of pages.

`public String getFooterText()`
`  {`
`    return "Items " + (this.getStart() + 1) + "-"`
`+ this.getEnd() +`
`" of " + " " + this.getTableSize() + " ";`
`  }`
	Logic for returning pagination text in the format `Items 1-4 of 25.`

D.3.1.6 The Preference Bean

This Java bean is a wrapper that provides APIs to get and set attributes in the task flow preference file. It contains the logic for saving personalizations and customizations on this task flow instance in the same MDS layer as that used by the application. In this sample application, portal-level customizations are stored in the `mds/mdssys/cust/site/site` directory. Therefore, the code in the `Preference` bean ensures that the application's MDS session is cloned and the task flow personalizations and customizations are stored in the same directory.

You can find the code for this bean in the `RecentPages` sample application.

Table D–7 describes significant sections of code in the `Preference.java` file.

Table D–7 The Preference Java Bean Code

Code	Description
private static MDSSession _getClonedMDSSession()	Logic to clone the application's MDS session.

{
MDSInstance instance = (MDSInstance)
ADFContext.getCurrent().getMDSInstanceAsObject();
MDSSession mdsSession = (MDSSession)
ADFContext.getCurrent().getMDSSessionAsObject();
mdsSession =
instance.createSession(mdsSession.getSessionOptions(),
mdsSession.getUserStateHandler());
return mdsSession;
}
	Logic to clone the application's MDS session.

private static MetadataObject _readPreference(MDSSession mdsSession,
String preferenceFileName)
{
MetadataObject mo = null;
try
{
mo =
mdsSession.getMutableMO(MOReference.create(preferenceFileName));
}
catch (MetadataNotFoundException mnfe)
{
_LOG.warning("Creating a new preference file " +
preferenceFileName);
}
catch (ReferenceException re)
{
_LOG.warning("Creating a new preference file " +
preferenceFileName);
}
catch (Exception e)
{
throw new RuntimeException(e);
}
	Logic to read the preference file in the MDS session or create one, if required.

Table D–7 (Cont.) The Preference Java Bean Code

Code	Description

// preference file is not available create a new one
    if (mo == null)
    {
      try
      {
        DocumentBuilderFactory builderFactory =
          DocumentBuilderFactory.newInstance();
        builderFactory.setNamespaceAware(true);
        builderFactory.setValidating(false);
       DocumentBuilder builder =
 builderFactory.newDocumentBuilder();
        Document document =
          builder.parse(new
ByteArrayInputStream(CONTENTS.getBytes()));
        mo =
 mdsSession.createMetadataObject(preferenceFileName, document);
        mdsSession.flushChanges();
        mo =
 mdsSession.getMutableMO(MOReference.create(preferenceFileName));
      }
      catch (Exception e)
      {
        throw new RuntimeException(e);
      }
    }
    return mo;
  }
	Logic to read the preference file in the MDS session or create one, if required.

public static void setNumberOfItemsToShow(String preferenceFileName,
int numberOfItemsToShow)
  {
    MDSSession session = _getClonedMDSSession();
    MetadataObject mo = _readPreference(session,
preferenceFileName);
 	
mo.getDocument().getDocumentElement().setAttribute("numberOfItemsToS
how",
Integer.toString(numberOfItemsToShow));
   _flushChanges(session);
  }
  public static int getNumberOfItemsToShow(String
preferenceFileName)
  {
    MDSSession session = _getClonedMDSSession();
    MetadataObject mo = _readPreference(session,
preferenceFileName);
    String show =
 	
mo.getDocument().getDocumentElement().getAttribute("numberOfItemsToS
how");
    return Integer.parseInt(show);
  }
	Logic to get and set the number of items to show in the table at a time.

Table D–7 (Cont.) The Preference Java Bean Code

<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td><pre>
public static void setNumberOfItemsToQuery(String
preferenceFileName,
int _numberOfItemsToQuery)
  {
    MDSSession session = _getClonedMDSSession();
    MetadataObject mo = _readPreference(session,
preferenceFileName);

mo.getDocument().getDocumentElement().setAttribute("numberOfItemsToQ
uery",
Integer.toString(_numberOfItemsToQuery));
    _flushChanges(session);
  }
  public static int getNumberOfItemsToQuery(String
preferenceFileName)
  {
    MDSSession session = _getClonedMDSSession();
   MetadataObject mo = _readPreference(session, preferenceFileName);
    String query =

mo.getDocument().getDocumentElement().getAttribute("numberOfItemsToQ
uery");
    return Integer.parseInt(query);
  }
</pre></td><td>Logic to get and set the number of items to query from the data source.</td></tr>
</table>

Table D–7 (Cont.) The Preference Java Bean Code

Code	Description

public static void setShowPageControl(String preferenceFileName,
boolean showPageControl)
  {
    MDSSession session = _getClonedMDSSession();
    MetadataObject mo = _readPreference(session,
preferenceFileName);
 	
mo.getDocument().getDocumentElement().setAttribute("showPageControl"
,
Boolean.toString(showPageControl));
    _flushChanges(session);
  }
public static boolean getShowPageControl(String preferenceFileName)
  {
    MDSSession session = _getClonedMDSSession();
    MetadataObject mo = _readPreference(session,
preferenceFileName);
    String pageControl =
 	
mo.getDocument().getDocumentElement().getAttribute("showPageControl"
);
    return Boolean.parseBoolean(pageControl);
  }
	Logic to get and set whether to show page control on the task flow.

private static void _flushChanges(MDSSession session)
  {
    try
    {
      session.flushChanges();
    }
    catch (Exception e)
    {
      throw new RuntimeException(e);
    }
  }
	Logic to save changes made to the task flow into the MDS session. If a sand box is set up in the MDS session, the changes are saved to the sand box. Else, they are permanently written to MDS.

private static final String CONTENTS =
 "<preference numberOfItemsToShow='5'
              numberOfItemsToQuery='10'
              showPageControl='true'
   xmlns='http://xmlns.oracle.com/apps/preference'/>";
}
	Logic to display defaults in the Number of Items to show at a time and `Number of Items to query fields` and the `Show Page Control` check box. When a user first accesses an instance of the `RecentPages` task flow, a new preference file is created with this content.

The `RecentPages` project containing all these files is deployed to Oracle ADF and the task flow is then consumed in the customizable `Welcome.jspx` page in the `WebPages` project.

D.3.2 The WebPages Project

This project contains the `Welcome.jspx` page in which the `recent-pages-task-flow-definition` task flow is consumed.

D.3.2.1 The Welcome.jspx File

Welcome.jspx is a customizable page containing a Panel Stretch Layout component. The top facet of the Panel Stretch Layout contains a Change Mode Link and a Page Create task flow. The center facet contains a Page Customizable with a child Panel Customizable, which in turn contains a Show Detail Frame component with the recent-pages-task-flow-definition task flow.

The stretchContent and showResizer attributes on the Show Detail Frame are set to false and never respectively to ensure that this component does not stretch its child task flow.

Also, the refresh attribute is set to ifNeeded in the task flow binding. This is to ensure that customizations made to the page at runtime are reflected when users perform a refresh.

The Welcome.jspx page contains the following code:

```
<?xml version='1.0' encoding='US-ASCII'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
          xmlns:f="http://java.sun.com/jsf/core"
          xmlns:h="http://java.sun.com/jsf/html"
          xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
          xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
          xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable">
  <jsp:directive.page contentType="text/html;charset=US-ASCII"/>
  <f:view>
    <af:document id="d1">
      <af:form id="f1">
        <af:panelStretchLayout id="psl1">
          <f:facet name="top">
            <af:panelGroupLayout layout="horizontal"
      xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
                                 id="pgl2">
              <pe:changeModeLink id="cml1"/>
              <af:spacer width="10" height="10" id="s2"/>
              <af:region value="#{bindings.pagecreatepage1.regionModel}"
                         id="r1"/>
              <af:panelGroupLayout id="pgl1"/>
            </af:panelGroupLayout>
          </f:facet>
          <f:facet name="center">
            <pe:pageCustomizable id="pageCustomizable1">
              <cust:panelCustomizable id="panelCustomizable1" layout="scroll">
                <cust:showDetailFrame text="Recent Pages" id="sdf1"
                 stretchContent= "never" showResizer="never">
                  <af:region
value="#{bindings.recentpagestaskflowdefinition1.regionModel}"
                             id="r2"/>
                </cust:showDetailFrame>
              </cust:panelCustomizable>
              <f:facet name="editor">
                <pe:pageEditorPanel id="pep1"/>
              </f:facet>
            </pe:pageCustomizable>
          </f:facet>
          <f:facet name="start"/>
          <f:facet name="end"/>
        </af:panelStretchLayout>
      </af:form>
    </af:document>
  </f:view>
```

```
</jsp:root>
```

D.3.2.2 The adf-config.xml File

You can add a task flow inside a `Show Detail Frame` component and display the task flow's outcomes as actions on the chrome of the parent `Show Detail Frame` component. This is possible by defining custom actions on the parent `Show Detail Frame` component. You can define custom actions at the instance level where `Custom Action` components are added as child components of the `Show Detail Frame`, or at the global level where `Custom Action` elements are defined in the application's `adf-config.xml` file. Global custom actions are enabled on all `Show Detail Frame` instances in the application, but are displayed only when a `Show Detail Frame` instance contains the task flow as its child.

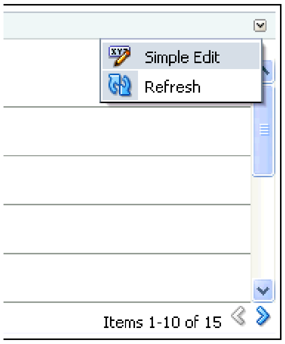
In this application, custom actions corresponding to the task flow's outcomes, `dialog:simpleEditPopupView` and `dialog:advancedEditPopupView`, are defined globally in the `adf-config.xml` file as follows:

```
<customizableComponentsSecurity
xmlns="http://xmlns.oracle.com/adf/faces/customizable/config">
    <enableSecurity value="true"/>
    <customActions>
      <customAction action="refresh" text="Refresh"
                    shortDesc="Refresh"
                    location="menu" rendered="true"
                    icon="/adf/pe/images/refresh_ena.png"/>
      <customAction action="dialog:simpleEditPoup"
                    text="Simple Edit"
                    shortDesc="Simple Edit"
                    location="menu"
                    rendered="#{!changeModeBean.inEditMode}"
                icon="/adf/pe/images/editproperties_ena.png"/>
      <customAction action="dialog:advancedEditPopup"
                    text="Advanced Edit"
                    shortDesc="Advanced Edit" location="menu"
                    rendered="#{changeModeBean.inEditMode}"
                icon="/adf/pe/images/editproperties_ena.png"/>
    </customActions>
  </customizableComponentsSecurity>
```

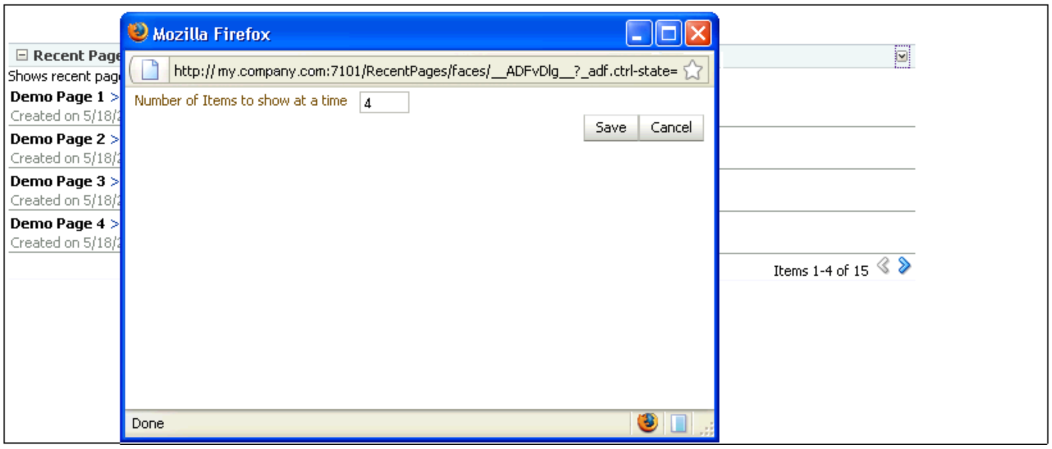
D.3.3 Runtime Behavior

This configuration results in the following behavior at runtime:

- All users see a Simple Edit action on the chrome surrounding the task flow while viewing the page.

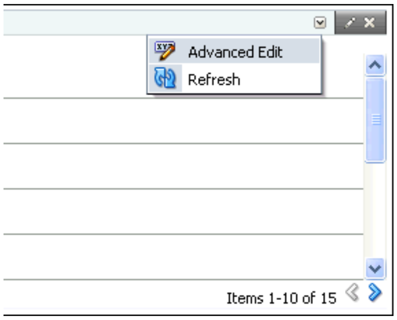


Clicking this action displays the personalization option in a separate dialog.

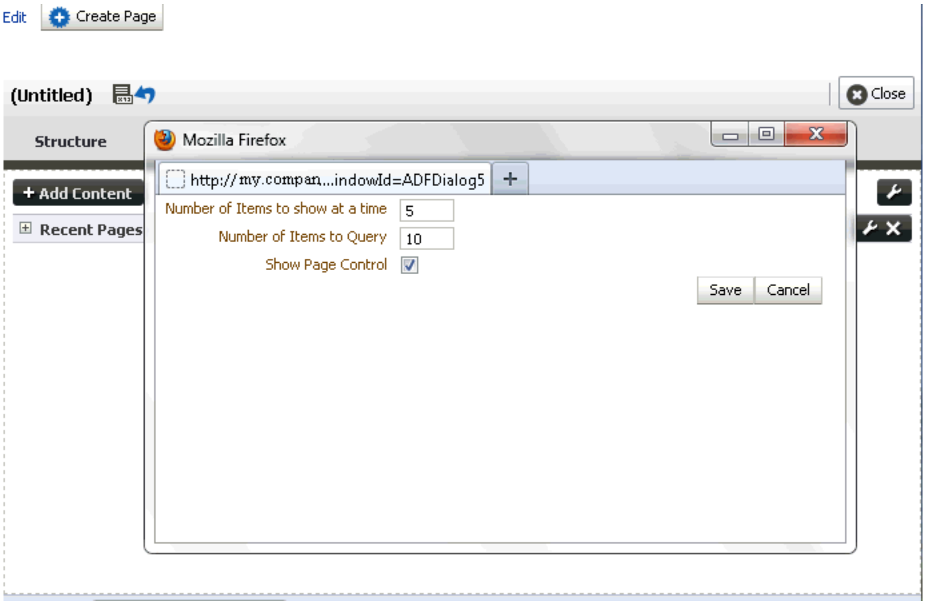


Number of Items to show at a time 4

- Users with Edit or Customize permission see an Advanced Edit action on the chrome surrounding the task flow while editing the page.



Clicking this action displays customization options in a separate dialog.



Number of Items to show at a time 5

Number of Items to Query 10

Show Page Control ☑

D.4 Conclusion

In Portal Framework application pages containing task flows, task flow design can have a significant impact on application performance. Also, slow response time and inconsistent UI can lead to an unpleasant experience for application users. To ensure better performance and a good user experience for Portal Framework application users, follow the guidelines in this document while implementing task flows to be consumed in the application.

E

Using ADF JavaScript Partitioning for Performance

This appendix describes how to get optimal performance when using JavaScript with WebCenter Portal pages.

This appendix contains the following topics:

- Section E.1, "Using JavaScript Partitioning"
- Section E.2, "Using Partitioning for Performance"

E.1 Using JavaScript Partitioning

ADF UI components are complex entities, each containing one or more HTML, CSS, and JavaScript (JS) elements. When a component is rendered, the HTML tags are stamped on the page with right CSS style classes attached. ADF is smart enough to download only the JS files belonging to the components rendered on the page. If individual JS files are downloaded, however, it will cause a lot of network traffic per page, slowing down the page performance. The solution is to use JavaScript Partitions.

ADF's JavaScript Partitioning feature helps combine individual JS files from ADF components together into buckets, thereby reducing the number of downloads. By default, all ADF pages need the `boot.js` and `core.js` files to operate. Additionally, JS files are downloaded either combined as partitions or one for each component (if no partition is defined). For more information about JavaScript partitioning, see "Using JavaScript Library Partitioning" in *Web User Interface Developer's Guide for Oracle Application Development Framework*.

E.2 Using Partitioning for Performance

The general rules to get optimal JS performance are:

- Keep the number of static file downloads less to avoid network latency
- Keep individual file size to be around the same else the largest file will delay the page load.
- Construct the home page carefully so that subsequent browser pages need fewer file downloads

Keeping these general rules in mind, follow these steps to tune the JS partitions for optimal performance:

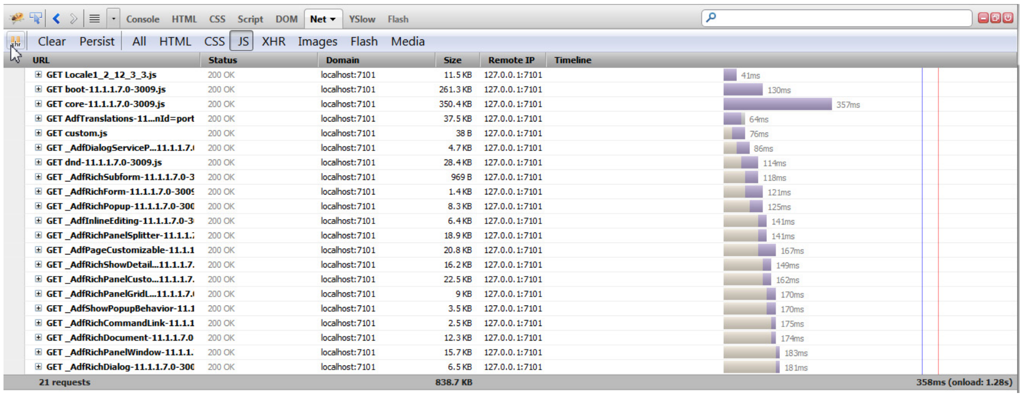
1. Create a new file called `adf-js-partitions.xml` file in WEB-INF and add the XML as described in the "How to Create JavaScript Partitions" section in Web User Interface Developer's Guide for Oracle Application Development Framework.

2. Remove all the features from the core partition that start with `Adf*`.

> **Note:** Remember to redeploy the application and clear the browser cache every time you test the `adf-js-partitions.xml` file.

3. Test the home page and note the JS files downloaded. Figure E–1 shows the results using Firebug.

Figure E–1 Initial results for downloaded files for the home page

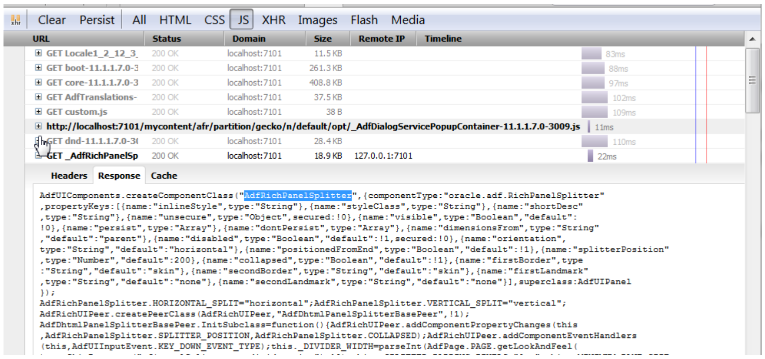


URL	Status	Domain	Size	Remote IP	Timeline
GET Locale1_2_12_3_3.js	200 OK	localhost:7101	11.5 KB	127.0.0.1:7101	41ms
GET boot-11.1.1.7.0-3009.js	200 OK	localhost:7101	261.3 KB	127.0.0.1:7101	130ms
GET core-11.1.1.7.0-3009.js	200 OK	localhost:7101	350.4 KB	127.0.0.1:7101	357ms
GET AdfTranslations-11...nId=port	200 OK	localhost:7101	37.5 KB	127.0.0.1:7101	64ms
GET custom.js	200 OK	localhost:7101	38 B	127.0.0.1:7101	76ms
GET _AdfDialogServiceP...11.1.1.7.	200 OK	localhost:7101	4.7 KB	127.0.0.1:7101	86ms
GET dnd-11.1.1.7.0-3009.js	200 OK	localhost:7101	28.4 KB	127.0.0.1:7101	114ms
GET _AdfRichSubform-11.1.1.7.0-3	200 OK	localhost:7101	969 B	127.0.0.1:7101	118ms
GET _AdfRichForm-11.1.1.7.0-300	200 OK	localhost:7101	1.4 KB	127.0.0.1:7101	121ms
GET _AdfRichPopup-11.1.1.7.0-300	200 OK	localhost:7101	8.3 KB	127.0.0.1:7101	125ms
GET _AdfInlineEditing-11.1.1.7.0-3	200 OK	localhost:7101	6.4 KB	127.0.0.1:7101	141ms
GET _AdfRichPanelSplitter-11.1.1.	200 OK	localhost:7101	18.9 KB	127.0.0.1:7101	141ms
GET _AdfPageCustomizable-11.1.1	200 OK	localhost:7101	20.8 KB	127.0.0.1:7101	167ms
GET _AdfRichShowDetail...11.1.1.7.	200 OK	localhost:7101	16.2 KB	127.0.0.1:7101	149ms
GET _AdfRichPanelCusto...11.1.1.7.	200 OK	localhost:7101	22.5 KB	127.0.0.1:7101	162ms
GET _AdfRichPanelGridL...11.1.1.7.	200 OK	localhost:7101	9 KB	127.0.0.1:7101	170ms
GET _AdfShowPopupBehavior-11.1	200 OK	localhost:7101	3.5 KB	127.0.0.1:7101	170ms
GET _AdfRichCommandLink-11.1.1	200 OK	localhost:7101	2.5 KB	127.0.0.1:7101	175ms
GET _AdfRichDocument-11.1.1.7.0	200 OK	localhost:7101	12.3 KB	127.0.0.1:7101	174ms
GET _AdfRichPanelWindow-11.1.1.	200 OK	localhost:7101	15.7 KB	127.0.0.1:7101	183ms
GET _AdfRichDialog-11.1.1.7.0-300	200 OK	localhost:7101	6.5 KB	127.0.0.1:7101	181ms
21 requests			838.7 KB		358ms (onload: 1.28s)

4. To create partitions, examine the individual JS files downloaded by your page. The files starting with `Adf` don't have partitions defined, while files such as `dnd-11.1.1.7` are partitions. Remove (or comment out) all those partitions as well in the `adf-js-partitions.xml` file.

5. To find the feature name, open the JS file in Firebug or similar tool. The `createComponentClass` usually contains the feature name as shown in Figure E–2.

Figure E–2 Finding the feature name



URL	Status	Domain	Size	Remote IP	Timeline
GET Locale1_2_12_3_	200 OK	localhost:7101	11.5 KB		83ms
GET boot-11.1.1.7.0-3	200 OK	localhost:7101	261.3 KB		88ms
GET core-11.1.1.7.0-3	200 OK	localhost:7101	408.8 KB		97ms
GET AdfTranslations-	200 OK	localhost:7101	37.5 KB		102ms
GET custom.js	200 OK	localhost:7101	38 B		109ms
http://localhost:7101/mycontent/afr/partition/gecko/n/default/opt/_AdfDialogServicePopupContainer-11.1.1.7.0-3009.js					11ms
GET dnd-11.1.1.7.0-3	200 OK	localhost:7101	28.4 KB		110ms
GET _AdfRichPanelSp	200 OK	localhost:7101	18.9 KB	127.0.0.1:7101	22ms

```
AdfUIComponents.createComponentClass("AdfRichPanelSplitter",{componentType:"oracle.adf.RichPanelSplitter"
,propertyKeys:[{name:"inlineStyle",type:"String"},{name:"styleClass",type:"String"},{name:"shortDesc"
,type:"String"},{name:"unsecure",type:"Object",secured:!0},{name:"visible",type:"Boolean","default":
!0},{name:"persist",type:"Array"},{name:"dontPersist",type:"Array"},{name:"dimensionsFrom",type:"String"
,"default":"parent"},{name:"disabled",type:"Boolean","default":!1,secured:!0},{name:"orientation",
type:"String","default":"horizontal"},{name:"positionedFromEnd",type:"Boolean","default":!1},{name:"splitterPosition"
,type:"Number","default":200},{name:"collapsed",type:"Boolean","default":!1},{name:"firstBorder",type
:"String","default":"skin"},{name:"secondBorder",type:"String","default":"skin"},{name:"firstLandmark"
,type:"String","default":"none"},{name:"secondLandmark",type:"String","default":"none"}],superclass:AdfUIPanel
});
AdfRichPanelSplitter.HORIZONTAL_SPLIT="horizontal";AdfRichPanelSplitter.VERTICAL_SPLIT="vertical";
AdfRichUIPeer.createPeerClass(AdfRichUIPeer,"AdfDhtmlPanelSplitterBasePeer",!1);
AdfDhtmlPanelSplitterBasePeer.InitSubclass=function(){AdfRichUIPeer.addComponentPropertyChanges(this
,AdfRichPanelSplitter.SPLITTER_POSITION,AdfRichPanelSplitter.COLLAPSED);AdfRichUIPeer.addComponentEventHandlers
(this,AdfUIInputEvent.KEY_DOWN_EVENT_TYPE);this._DIVIDER_WIDTH=parseInt(AdfPage.PAGE.getLookAndFeel(
```

6. Create a new partition (for example, `custom-webcenter`), and using the technique above, add all the downloaded features to the new partition as shown in Example E–1. Note that this is only an example, and that your partition will be different depending on the content of the home page.

Example E–1 Sample JavaScript partition

```
<partition>
<partition-name>custom-webcenter</partition-name>
<feature>AdfRichDialog</feature>
```

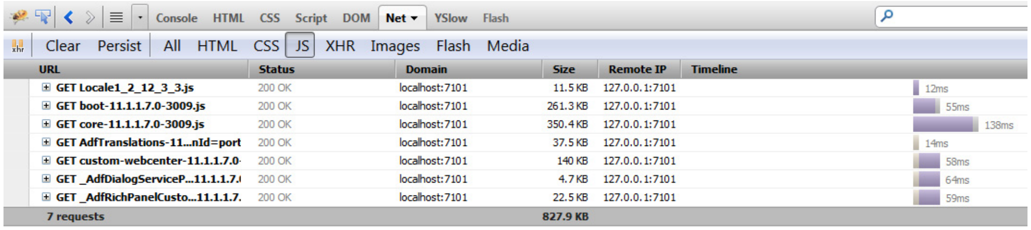
```
<feature>AdfRichSubform</feature>
<feature>AdfRichForm</feature>
<feature>AdfRichPopup</feature>
<feature>AdfInlineEditing</feature>
<feature>AdfRichPanelSplitter</feature>
<feature>AdfPageCustomizable</feature>
<feature>AdfRichShowDetailFrame</feature>
<feature>AdfRichPanelGridLayout</feature>
<feature>AdfShowPopupBehavior</feature>
<feature>AdfRichCommandLink</feature>
<feature>AdfRichCommandButton</feature>
<feature>AdfRichDocument</feature>
<feature>AdfRichPanelWindow</feature>
<feature>AdfDragAndDrop</feature>
<feature>AdfRichPanelCustomizable</feature>
<feature>AdfDialogServicePopupContainer</feature>
</partition>
```

Note: There is a dependency between `AdfUIEditableValue` and `AdfRichOutputLabel`, and consequently `AdfRichOutputLabel` should be in the core partition even when an output label is not used on the page. If this is not done, the following error is produced:

```
<FeatureUtils> <_resolveFeatures> Ignoring
feature-dependency on feature "AdfDvtCommon". No such
feature exists.
```

7. Remove the features which you added to custom from the existing partitions and re-run the application to see the difference in number of downloads and (more importantly) the time to render.

Figure E–3 Results for downloaded files for the home page after partitioning



URL	Status	Domain	Size	Remote IP	Timeline
GET Locale1_2_12_3_3.js	200 OK	localhost:7101	11.5 KB	127.0.0.1:7101	12ms
GET boot-11.1.1.7.0-3009.js	200 OK	localhost:7101	261.3 KB	127.0.0.1:7101	55ms
GET core-11.1.1.7.0-3009.js	200 OK	localhost:7101	350.4 KB	127.0.0.1:7101	138ms
GET AdfTranslations-11...nId=port	200 OK	localhost:7101	37.5 KB	127.0.0.1:7101	14ms
GET custom-webcenter-11.1.1.7.0-	200 OK	localhost:7101	140 KB	127.0.0.1:7101	58ms
GET _AdfDialogServiceP...11.1.1.7.	200 OK	localhost:7101	4.7 KB	127.0.0.1:7101	64ms
GET _AdfRichPanelCusto...11.1.1.7.	200 OK	localhost:7101	22.5 KB	127.0.0.1:7101	59ms
7 requests			827.9 KB		

8. Repeat the process for any other complex pages. Note that since the home page will have downloaded most of the JS files they will be cached by the browser and this time there will be a lot less features to partition.

F

Reuse of Oracle Portal Components

This appendix describes how to reuse components from your existing Oracle Portal application in an application built with Oracle WebCenter Portal Framework.

This appendix includes the following topics:

- Section F.1, "Introduction to Oracle Portal Components"
- Section F.2, "Reusing Portlets"
- Section F.3, "Reusing Items"

F.1 Introduction to Oracle Portal Components

The two most basic building blocks of Oracle Portal are as follows:

- Portlets are the fundamental building blocks of a portal page. Portlets can be deployed to Oracle Portal through three producer (known in Oracle Portal as provider) types:

  – **Web (or Oracle PDK-Java) producers** use open standards, such as XML, SOAP, HTTP, or J2EE for deployment, definition, and communication with applications. The Oracle PDK-Java provides a framework that simplifies the task of building Web producers.

  – **WSRP producers** serve as the containers for standards-based portlets.

  – **Database producers** own one or more database portlets. Examples of database portlets include, portlets built using the Oracle PDK-PL/SQL, Portlet Builder portlets (charts, forms, reports, and so on), and Oracle Portal page portlets).

  In WebCenter Portal Framework, you can make Web and WSRP portlets available by registering their producers with the application. For more information, see Section F.2.1, "How to Reuse JSR 286 and Oracle PDK-Java Portlets."

  You can also make database portlets available to Portal Framework applications by using the Federated Portal Adapter. For more information, see Section F.2.8, "How to Use the Federated Portal Adapter to Reuse Database Portlets."

- Items are individual pieces of content (text, hyperlink, image, and so on) that reside on a page in an item region. Users with an appropriate privilege level can add items to a page. Item content and metadata are stored in the Oracle Portal schema of the Metadata Repository. Items are rendered on the page according to the layout, style, and attribute display defined for the item region.

  Because items are stored in a content repository, you can retrieve them with Java Content Repository (JCR) data controls. A default adapter for the Oracle Portal content repository is provided with WebCenter Portal Framework. For more information, see Section F.3, "Reusing Items."

Given the technical differences between Oracle Portal and WebCenter Portal, there is no direct upgrade available across the platform. However, key components of your portal can be exposed within WebCenter Portal.

F.2 Reusing Portlets

You can make the portlets used in your portal available to your Portal Framework applications.

This section includes the following topics:

- Section F.2.1, "How to Reuse JSR 286 and Oracle PDK-Java Portlets"
- Section F.2.2, "What You May Need to Know About Events"
- Section F.2.3, "What You May Need to Know About Mobile Portlets"
- Section F.2.4, "What You May Need to Know About the Portlet Chrome"
- Section F.2.5, "What You May Need to Know About Personalizations and Customizations"
- Section F.2.6, "What You May Need to Know About Oracle Portal System Resources"
- Section F.2.7, "What You May Need to Know About Partner and External Applications"
- Section F.2.8, "How to Use the Federated Portal Adapter to Reuse Database Portlets"
- Section F.2.9, "What You May Need to Know About Troubleshooting the Federated Portal Adapter"
- Section F.2.10, "What You May Need to Know About Limitations of the Federated Portal Adapter"
- Section F.2.11, "How to Reuse Oracle PDK-Java Producers from Earlier Oracle Application Server Versions"

F.2.1 How to Reuse JSR 286 and Oracle PDK-Java Portlets

To reuse JSR 286 and Oracle PDK-Java portlets in your Portal Framework application, simply register the producers in the same way as any other producer.

To reuse JSR 286 and Oracle PDK-Java portlets:

1. In Oracle JDeveloper, access the WSRP or Oracle PDK-Java Producer Registration wizard.
2. Step through the wizard providing information about the producer, including the URL endpoint.
3. Open the page to which you to add the portlet.
4. Drag the portlet from the registered producer to the appropriate part of the page.

For more detailed information about consuming portlets in a Portal Framework application, see Chapter 63, "Consuming Portlets."

F.2.2 What You May Need to Know About Events

Oracle PDK-Java events are not supported in WebCenter Portal Framework. If you have Oracle PDK-Java portlets that use events and you deploy them in an WebCenter Portal Framework environment, then the events are ignored.

F.2.3 What You May Need to Know About Mobile Portlets

Mobile portlets are not supported in WebCenter Portal Framework. If you have Oracle PDK-Java mobile portlets, then they do not work in a WebCenter Portal Framework environment.

F.2.4 What You May Need to Know About the Portlet Chrome

In WebCenter Portal Framework, the portlet does not provide the chrome. The consuming application provides the chrome. This behavior conforms to the WSRP convention, but it is a change from Oracle Portal, where Oracle PDK-Java provided the chrome for portlets. Hence, the Oracle PDK-Java portlet header is filtered out in the WebCenter Portal Framework environment.

As part of this filtering process, WebCenter Portal Framework parses the title area of PDK-Java portlets to preserve the title and add the necessary portlet mode links. The filtering algorithm is as follows:

- If the portlet has multiple tables, then the title area is considered to be the first table. If the portlet has only one table, then the title area is considered to be the first row in that table.
- The first text in the title area is considered to be the title. If the portlet has no tables or a discernible title, then the title is taken from the `adfp:portlet` component.
- Any link that contains the fragment `_mode=` *`parameter`* is considered to be a portlet mode link. These links are moved into the portlet menu by WebCenter Portal Framework.

If you want to bypass the rendition of the header section of your portlet chrome and reuse its original, Oracle PDK-Java header, then you can set the `displayHeader` attribute of the `adfp:portlet` tag to `false` and `retainPortletHeader` as `true` in the associated portlet bindings of the page definition XML. Setting `retainPortletHeader=true` in the page definition portlet binding retains the portlet header in the portlet response. Setting `displayHeader=false` in the `adf:portlet` tag suppresses the application's header for the portlet chrome, and hides the icons and links normally displayed in the header.

F.2.5 What You May Need to Know About Personalizations and Customizations

Portlet customizations and personalizations that you or your users applied to your portlets in Oracle Portal are not carried over to your Portal Framework application. In a Portal Framework application, your Oracle Portal portlets are treated as new instances. Hence, previous personalizations and customizations are not available.

F.2.6 What You May Need to Know About Oracle Portal System Resources

Portlets built with a target consumer of Oracle Portal in mind tend to make invalid assumptions about the runtime environment. For example, the portlet might assume the presence of Oracle Portal resources, such as images or JavaScript functions. In WebCenter Portal Framework, these resources are not available. Hence, you must bundle the resources the portlet needs with the producer to ensure that the portlet runs properly in the WebCenter Portal Framework environment.

Another common issue with portlets designed for Oracle Portal consumption is the portlet assuming the Oracle Portal URL format and the presence of Oracle Portal parameters. The page URL of an Oracle ADF application is different from that of Oracle Portal. Therefore, portlet developers cannot make assumptions about the page URL and must prepare their Oracle PDK-Java portlets for execution in the WebCenter Portal Framework environment by using the proper portlet APIs.

F.2.7 What You May Need to Know About Partner and External Applications

Partner applications are not supported. External applications are supported. Automatic login is supported through an external application automated login servlet, which is automatically configured in your application when you register a producer.

F.2.8 How to Use the Federated Portal Adapter to Reuse Database Portlets

The Federated Portal Adapter is a component of Oracle Portal that enables Oracle Portal instances to share their database portlets through the Web portlet interface. The Federated Portal Adapter receives the SOAP messages for a Web producer, parses the SOAP and then dispatches the messages to a database producer as PL/SQL procedure calls. In effect, the Federated Portal Adapter makes a database producer behave in the same way as a Web producer. You can make Oracle Portal database portlets, including PL/SQL portlets, Portlet Builder portlets, and page portlets, available for use in your Portal Framework applications.

Note: You can also expose Oracle Portal pages in WebCenter Portal through the Federated Portal Adapter by publishing them as portlets in Oracle Portal.

Implementing the Federated Portal Adapter for your portal exposes the Oracle Portal portlets through the Oracle PDK-Java Web producer protocol making it possible to register them as PDK-Java producers. Registering the producer with a Portal Framework application causes the portlets to appear in the Component Palette, and you can then drag and drop them onto pages in the same way as any other portlet. Without the Federated Portal Adapter, you cannot access these producers from a Portal Framework application.

For more information about the Federated Portal Adapter, see the "Using the Federated Portal Adapter" chapter in the *Administrator's Guide for Oracle Portal*.

To register a Federated Portal Adapter producer with WebCenter Portal:

1. Set up the Oracle Portal environment for the Federated Portal Adapter. For more information, see the "Setting Up the Environment to Use the Federated Portal Adapter" section in the *Administrator's Guide for Oracle Portal*.
2. To register an instance of Oracle Portal through the Federated Portal Adapter, the portal must have a user named "PORTAL" in Oracle Internet Directory. To create this user:
   a. Log in to the Oracle Portal instance as the portal administrator user.
   b. In the **User** portlet, click **Create New Users.**

      By default, the **User** portlet is on the **Administer** tab of the **Portal Builder** page, on the **Portal** subtab.
   c. In the **Last Name** field, enter `PORTAL`.

d. In the **User ID** field, enter `PORTAL`.

e. In the **Password** and **Confirm Password** fields, enter an appropriate password.

f. In the **Email Address** field, enter an appropriate email address.

g. Click **Submit,** then **Done.**

h. In the **Portal User Profile** portlet, enter `PORTAL` in the **Name** field, and click **Edit.**

   By default, the **Portal User Profile** portlet is on the **Administer** tab of the **Portal Builder** page, on the **Portal** subtab.

i. In the **Default Group** field, enter `PORTLET_PUBLISHERS`.

j. Click **OK.**

3. If you want to display Oracle Portal pages in your Portal Framework applications, you must first publish each of those pages as portlets. To display Oracle Portal pages, edit the page properties and select **Publish As Portlet** on the **Optional** tab. For more information, see the "Placing One Page Onto Another" section in the *User's Guide for Oracle Portal*.

4. Confirm that the users of the Portal Framework application have appropriate privileges on the portlets and pages exposed through the Federated Portal Adapter, and that they map to the users of the Oracle Portal instance. The user name for a person on the Portal Framework application should map to the user name of the same person in Oracle Portal. For example, JSMITH should represent the same person in both the Portal Framework application and Oracle Portal.

5. In Oracle JDeveloper, register the producer as an Oracle PDK-Java producer using the Federated Portal Adapter URL and Service ID:

```
http://host:port/adapter/dad/schema
```

   To verify the URL, enter it in a browser. If the URL is correct you should see the following message:

```
Congratulations - you got to the adapter test page
```

   If you are logged in you should see a list of producers, their service IDs, and the portlets each provides. If you are logged in as an Oracle Portal administrator, you should also see additional details about page portlets and Oracle Portal HMAC registrations.

   When you register the producer, ensure that you select the **Establish Producer Sessions** check box on the Specify Connection Details page of the wizard. This is so that the WebCenter Portal user information is correctly propagated to Oracle Portal.

   For more information, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

6. You can drag and drop the producer's portlets onto a page.

7. To secure communication between the Oracle Portal instance and WebCenter Portal, provide a shared key using Hash Message Authentication Code (HMAC):

   a. Go to SQL*Plus and log in as the portal schema owner.

   b. Run:

```
@wwc/proadssr.sql http://www.oracle.com/adapter/portal
```

Note that, for Portal Framework applications, the adapter URL is always the same:

```
http://www.oracle.com/adapter/portal
```

c. Enter a shared key code.

d. In Oracle JDeveloper, enter this shared key code into the **Shared Key** field on the Specify Additional Registration Details step of the Create/Edit Oracle PDK-Java Portlet Producer wizard or dialog.

> **Note:** To remove the shared key from the Oracle Portal instance use:
>
> ```
> @wwc/proadsdr.sql
> ```

8. Certain portlets built in Oracle Portal, such as page portlets and several sample database portlets, assume that the set of images shipped in the portal middle tier are available in the path `/images` in the Web server of the portal page. These images are not available by default for your Portal Framework applications. For these images to display correctly:

   a. Download the following zip file:

   `http://download.oracle.com/otndocs/tech/portal/files/portal-images.zip`

   b. Extract the contents of the zip file and mount the contents under the URL `/images`.

9. You can now run the page that contains the portlet.

F.2.9 What You May Need to Know About Troubleshooting the Federated Portal Adapter

The following information may help when trying to resolve issues with the Federated Portal Adapter in WebCenter Portal.

This section includes the following topics:

- Section F.2.9.1, "On Registration"
- Section F.2.9.2, "During Runtime"

F.2.9.1 On Registration

Error occurred trying to register producer

The shared key has not been set up in the Oracle Portal instance or it does not match that given in Oracle JDeveloper, or the service ID has not been entered.

Could not Contact Producer

Either the portal registration URL is not correct, the service ID given in Oracle JDeveloper does not match a provider in the Oracle Portal instance, the Oracle Portal instance could not be contacted (for example, it is behind a firewall or is not available), or the users in Oracle JDeveloper do not match those in Oracle Portal. The details of the message should give further information about the cause:

- 404 Not Found: The Oracle Portal instance could not be contacted or has timed out. Try increasing the time out period.

- 406 Not Acceptable: The provider with the given service ID could not be found in this Oracle Portal instance or HMAC authentication has either failed or been incorrectly configured.
- 503 Service Unavailable: the PORTAL user could not be found in Oracle Internet Directory. The Oracle Portal administrator may not have added the PORTAL user to Oracle Internet Directory.

F.2.9.2 During Runtime

Could not Contact Producer

Either the portal registration URL is not correct, the service ID given in Oracle JDeveloper does not match a provider in the Oracle Portal instance, the Oracle Portal could not be contacted (for example, if it is behind a firewall or not available), or the users in Oracle JDeveloper do not match those in Oracle Portal. The details of the message should give further information about the cause:

- 404 Not Found: The Oracle Portal instance could not be contacted or has timed out. Try increasing the time out period.
- 406 Not Acceptable: The provider with the given service ID could not be found in this Oracle Portal instance or HMAC authentication has either failed or been incorrectly configured.
- 503 Service Unavailable: the PORTAL user could not be found in Oracle Internet Directory. The Oracle Portal administrator may not have added the PORTAL user to Oracle Internet Directory.

Portlet does not render properly

- If images are missing or appear as links, see the instructions for downloading the images zip file provided in Section F.2.8, "How to Use the Federated Portal Adapter to Reuse Database Portlets."
- If navigation does not work properly, try editing the page and setting `RenderPortletInIframe` to `true`. Some portlets work better in their own inline frame (IFRAME).
- If the portlet responds with the following message, try putting the portlet in an IFRAME, by setting `RenderPortletInIframe` to `true`:

  ```
  The portlet attempted to issue a redirect in response to a render request.
  ```

- If popups, lists of values, and so on do not work in the portlet, it may be because JavaScript exceptions are raised in an attempt to avoid XSS attacks. The popup must have the same server URL as the Portal Framework application.
- If a portlet renders a blank screen for Customize or Personalize, it may be that the user does not have permission to edit the portlet. Check the Portal log files.

F.2.10 What You May Need to Know About Limitations of the Federated Portal Adapter

The following limitations apply when using the Federated Portal Adapter with WebCenter Portal:

- Deep linking may not work. In some cases, putting the portlet in an IFRAME helps (setting `RenderPortletInIframe` to `true`).
- Links rendered by the portlet must be absolute URLs.
- If a page portlet displays a page with tabs it should be placed into an IFRAME.

- Refresh, Collapse, and Remove portlet links do not work in portlets displayed in page portlets.
- Not all objects are returned by the Federated Portal Adapter, and thus are not visible in WebCenter Portal. For a full list, see the "Oracle Portal - Limitations" section in *Administering Oracle WebCenter Portal*.

F.2.11 How to Reuse Oracle PDK-Java Producers from Earlier Oracle Application Server Versions

If you have a producer that you designed and deployed on Oracle Application Server Release 2 (10.1.2) or earlier, then you can reuse it in either one of two ways:

- You can consume a portlet from a producer running on an Oracle Application Server Release 2 (10.1.2.0.2) middle tier. In this case, the producer's code is running on Release 2 (10.1.2.0.2) while the application consuming the producer is running on Release 11.
- You can redeploy the producer application as an EAR file on Oracle WebLogic Server and consume its portlets in other Portal Framework applications. In this case, both the producer's code and the consuming application run on Release 11.

In either of these cases, you must take some additional steps to get the producer's portlets to operate correctly. Portlets built for Oracle Portal expect certain boilerplate images to be present on the page assembly servlet and they break if those images are not available. These images were included in the middle-tier servlet by default in Oracle Application Server Release 2 (10.1.2.0.2), but for WebCenter Portal Framework you must manually ensure that the images can be found by portlets.

This section includes the following topics:

- Section F.2.11.1, "Consuming a Portlet from Oracle Portal"
- Section F.2.11.2, "Redeploying PDK-Java Producers from Oracle Portal"

F.2.11.1 Consuming a Portlet from Oracle Portal

In WebCenter Portal, to consume a portlet running on a page in an Oracle Portal instance, you can do either of the following:

- Obtain the Oracle Portal images zip file from the Oracle Technology Network and unzip it inside the ADFP servlet.
- Properly configure the resource servlet as follows:

1. Add an initialization parameter to the Web servlet as shown is Example F–1.

Example F–1 Web Servlet Initialization Parameters

```
<servlet>
 <servlet-name>SOAPServlet</servlet-name>
 <display-name>SOAPServlet</display-name>
 <description>Extended Portal SOAP Server</description>
 <servlet-class>oracle.webdb.provider.v2.adapter.SOAPServlet</servlet-class>
 ...
 <init-param>
   <param-name>resourceServletMapping</param-name>
   <param-value>/pdkresource</param-value>
 </init-param>
</servlet>
```

2. Add a servlet definition for the resource servlet as shown in Example F–2.

Example F–2 Servlet Definition for Resource Servlet

```
<servlet>
 <servlet-name>ResourceServlet</servlet-name>
  <display-name>ResourceServlet</display-name>
  <description>Image resource servlet</description>
  <servlet-class>oracle.webdb.provider.v2.adapter.ResourceServlet</servlet-class>
</servlet>
```

3. Add a servlet mapping for the resource servlet as shown in Example F–3.

Example F–3 Servlet Mapping for Resource Servlet

```
<servlet-mapping>
 <servlet-name>ResourceServlet</servlet-name>
 <url-pattern>/pdkresource/*</url-pattern>
</servlet-mapping>
```

4. Now you can register this PDK-Java producer in the same way as any other PDK-Java producer. For more information about registering PDK-Java producers, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

F.2.11.2 Redeploying PDK-Java Producers from Oracle Portal

If you choose to take a PDK-Java producer built for Oracle Portal and redeployed on Oracle WebLogic Server, then you must enable the resource servlet as follows:

1. Add an initialization parameter to the Web servlet as shown in Example F–4.

Example F–4 Web Servlet Initialization Parameter

```
<servlet>
 <servlet-name>SOAPServlet</servlet-name>
 <display-name>SOAPServlet</display-name>
 <description>Extended Portal SOAP Server</description>
 <servlet-class>oracle.webdb.provider.v2.adapter.SOAPServlet</servlet-class>
 ...
 <init-param>
   <param-name>resourceServletMapping</param-name>
   <param-value>/pdkresource</param-value>
 </init-param>
</servlet>
```

2. Add a servlet definition for the resource servlet as shown in Example F–5.

Example F–5 Servlet Definition for Resource Servlet

```
<servlet>
 <servlet-name>ResourceServlet</servlet-name>
  <display-name>ResourceServlet</display-name>
  <description>Image resource servlet</description>
  <servlet-class>oracle.webdb.provider.v2.adapter.ResourceServlet</servlet-class>
</servlet>
```

3. Add a servlet mapping for the resource servlet as Example F–6.

Example F–6 Servlet Mapping for Resource Servlet

```
<servlet-mapping>
 <servlet-name>ResourceServlet</servlet-name>
 <url-pattern>/pdkresource/*</url-pattern>
</servlet-mapping>
```

4. Now you can register this PDK-Java producer in the same way as any other PDK-Java producer. For more information about registering PDK-Java producers, see Section 63.2.2, "Registering an Oracle PDK-Java Portlet Producer with a WebCenter Portal Framework Application."

F.3 Reusing Items

Items from Oracle Portal have no equivalent in WebCenter Portal Framework. As such, creating, maintaining, and publishing items is not supported in WebCenter Portal Framework. To replicate the behavior of items with WebCenter Portal Framework, you can use JCR data controls to include content from Oracle Portal. Oracle Portal is a content repository that WebCenter Portal Framework supports out of the box in the Create a Content Repository Data Control dialog in JDeveloper. For more information about integrating content from Oracle Portal, see Chapter 25, "Configuring Content Repository Connections."

G

Expression Language Expressions

This appendix describes the Expression Language (EL) expressions that you can use in your portals built with WebCenter Portal and Portal Framework applications built with JDeveloper.

This appendix includes the following topics:

- Section G.1, "Introduction to Expression Language (EL) Expressions"
- Section G.2, "Expression Language Example Use Case"
- Section G.3, "ELs Related to Applications"
- Section G.4, "ELs Related to Security"
- Section G.5, "ELs Related to General Settings"
- Section G.6, "ELs Related to Portal Resources"
- Section G.7, "ELs Related to Navigation"
- Section G.8, "ELs Related to Tools and Services"
- Section G.9, "ELs Related to Documents"
- Section G.10, "ELs Related to People Connections"
- Section G.11, "ELs Related to Personalization"
- Section G.12, "ELs Related to Impersonation"
- Section G.13, "EL Expressions Relevant to Composer"
- Section G.14, "EL Expressions Relevant Only to WebCenter Portal"
- Section G.15, "EL Expressions Related to Device Settings"

> **See Also:** For additional information about EL APIs, see *Java API Reference for Oracle WebCenter Portal*.

G.1 Introduction to Expression Language (EL) Expressions

When configuring page components or assets, you can express values as variables that take advantage of the current application context. For example, you can use variables to obtain the name of the current user, the user's assigned role, the state of the current page, and so on. Such flexibility is made possible by using EL expressions.

This section includes the following subsections:

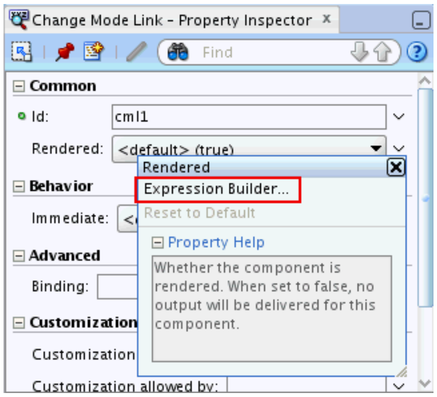
- Section G.1.1, "Introducing the Expression Builder"
- Section G.1.2, "Introducing the Expression Editor in WebCenter Portal"

G.1.1 Introducing the Expression Builder

You use EL expressions throughout a Portal Framework application to bind attributes to object values determined at runtime. At runtime, the value of certain components is determined by their value attribute. While a component can have static text as its value, typically the value attribute will contain an EL expression that the runtime infrastructure evaluates to determine what data to display.

You can create EL expressions using the JDeveloper Expression Builder. You can access the builder from the Property Inspector. In the Property Inspector, locate the attribute you wish to modify and click the Property Menu icon, and select choose **Expression Builder** from the popup (Figure G–1).

Figure G–1 Accessing the Expression Builder



Id: cml1

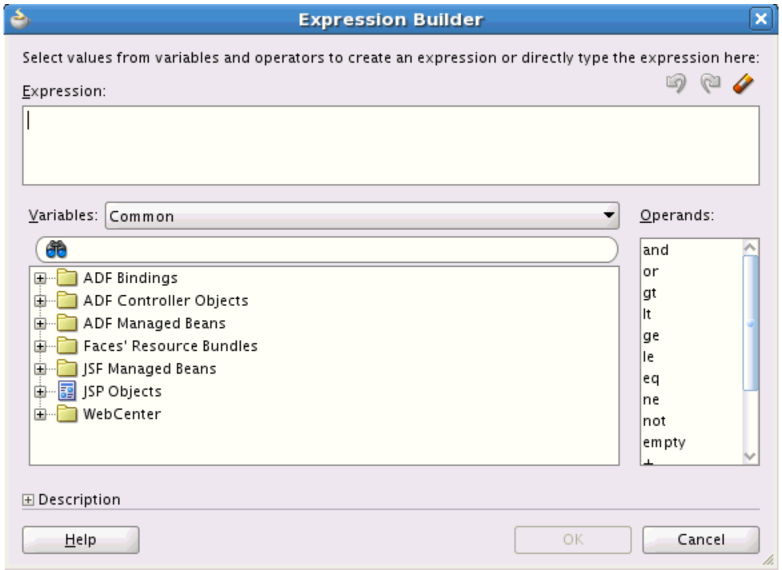
Rendered: <default> (true)

Whether the component is rendered. When set to false, no output will be delivered for this component.

In the Expression Builder dialog (Figure G–2), you can directly type your EL expression in the Expression box. You can also use the Variables drop-down list to select items that you want to include in the expression. Use the operator buttons to add logical or mathematical operators to the expression.

For more information about Expression Builder, see the "Getting Started with ADF Faces" chapter in *Web User Interface Developer's Guide for Oracle Application Development Framework*.

Figure G–2 Expression Builder Dialog



Select values from variables and operators to create an expression or directly type the expression here:

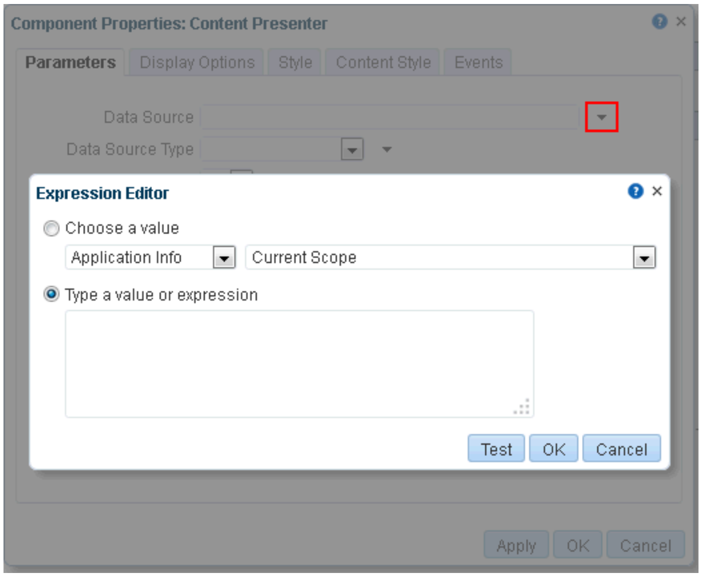
Variables: Common

G.1.2 Introducing the Expression Editor in WebCenter Portal

WebCenter Portal provides a simple Expression Language (EL) editor, called the Expression Editor. Use the Expression Editor when you want to formulate a dynamic computation for an otherwise unknown property value, for example, to specify the current user, the current page mode, and so on.

The Expression Editor is available through the administration and editing screens in WebCenter Portal. You can open the Expression Editor by clicking the **Advanced Edit Options** icon next to a field, check box or drop-down list, and then clicking **Expression Builder**. (Figure G–3).

Figure G–3 Advanced Edit Options Icon Next to a Parameter Value Field and the Resulting Editor



○ Choose a value

Application Info | Current Scope

● Type a value or expression

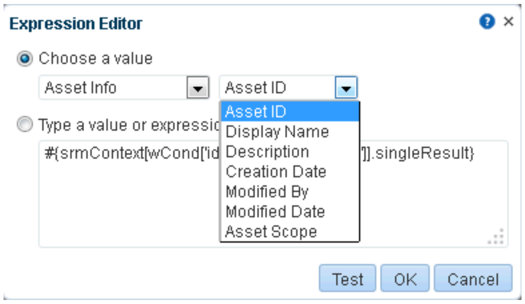
> **See Also:** For information about accessing component properties, see the "Modifying Component Properties" section in *Building Portals with Oracle WebCenter Portal*.

The Expression Editor provides two options for entering expressions:

- **Choose a value**, for selecting a seeded EL expression
- **Type a value or expression**, for entering an expression manually

The options under **Choose a value** are categorized according to the type of information an expression returns. Select a category from the first menu, and then select the type of value you want returned from the second menu (Figure G–4).

Figure G–4 Options Under Choose a Value in the Expression Builder



● Choose a value

Asset Info | Asset ID

Asset ID
Display Name
Description
Creation Date
Modified By
Modified Date
Asset Scope

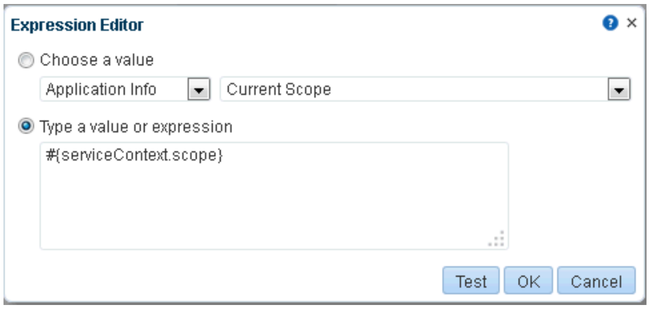
○ Type a value or expressic

#{srmContext[wCond['id ']].singleResult}

> **See Also:** For information about seeded EL expressions, see Section G.14.2, "Seeded Expressions in the Expression Editor."

The option **Type a value or expression** is followed by a text box, which you can use to manually enter the expression you intend (Figure G–5).

Figure G–5 Text Box Under Type a value or expression in the Expression Editor



○ Choose a value

Application Info | Current Scope

● Type a value or expression

```
#{serviceContext.scope}
```

Many expressions in the tables in this appendix are building blocks for narrowing down the object or objects you want returned. That is, they are not necessarily meant to be used by themselves, but rather in an assembly of ELs to form the desired query.

For example, the following expression uses three asset-related ELs to form a single query that returns a particular portal template. It retrieves the template `storesMasterTemplate` from the parent portal `stores`:

```
#{srmContext.resourceScope['stores'].resourceType['siteTemplate'].displayName['sto
resMasterTemplate'].singleResult}
```

In the Expression Editor, you can either:

- Select **Choose a value**, then select predefined values from the drop-down lists.
- Select **Type a value or expression**, then enter a value or EL expression. Use the following formats:
  - a literal number: `#{123}`
  - a literal string: `#{'string'}`
  - a literal Boolean: `#{true}`
  - a Java Bean called to return a value: `#{generalSettings.preferredTimeStyle}`

  The editor provides a **Test** button for validating your EL entry. The **Test** button is available for expressions entered in the text box under **Type a value or expression**.

Validation checks the EL syntax and evaluates the expression. Because expression values vary according to the context in which they are executed, the resulting value that appears in the editor may differ from the value returned during actual use.

Note, however, that only EL syntax is validated when you click **Test**; other types of values are not validated. Test results are shown in a popup.

> **Note:** When you enter EL in the generic **Display Options** tab in the Component Properties dialog, the parser reports an error only if it detects invalid syntax, such as a missing closing bracket. Validation is performed only on syntax, not on the expression value. Generic Display Options are those cataloged in the "Display Options Properties" table in *Building Portals with Oracle WebCenter Portal*.
>
> EL validation is not performed on non-generic display options.

G.2 Expression Language Example Use Case

This section provides an example of using EL expressions to display something based on a user's role, permissions, and so on.

In this example, we will use Expression Language to reveal or hide an item in the navigation model based on the user's role. Because there is Expression Language for almost every piece of metadata maintained by Oracle WebCenter Portal, using ELs to personalize the user's experience is an extremely powerful tool.

You can use the following EL to determine a user's role:

```
#{WCSecurityContext.userInScopedRole['Role 1'] or
WCSecurityContext.userInScopedRole['Role 2']}
```

This EL compares the current user's credentials (in this case, the *role*), against what is specified in the EL. If the result is `true`, that is, if the user is assigned one of the specified roles then the navigation item is visible to the user. If the result is `false`, the navigation item is hidden from the user.

The roles referred to in EL can be a system role (such as `Administrator`, `Moderator`, or `Participant`) or a custom role.

Notice that this EL joins two conditions with the use of an `OR` clause; that is, the user must have either Role 1 OR Role 2 to be able to see the navigational item.

These steps demonstrate how to add a navigational item (a page query for another portal) that is visible only to user assigned the role `Moderator`.

> **Note:** This exercise assumes you have applied a custom navigation model to your portal. You cannot edit a seeded navigation model.

To personalize navigation in a portal:

1. In the portal administration, go to the Assets page, then click Navigations in the left pane

   You can also enter the following URL in your browser to navigate directly to the Assets page:

   ```
   http://host:port/webcenter/portal/portalName/admin/assets
   ```

2. Click the **Edit** quick link for the navigation model that the portal is using.

   > **Tip:** To find out which navigation model the current portal is using, go to the portal's administration settings, and look for the value in the **Navigation** field.

3. In the Edit - *navigation model* dialog, expand the **Add** menu, and select **Pages Query**.
4. On the **Target** tab:
   - In the **Name** field, enter a name for your query, for example, `moderatorQuery`.
   - Next to **Find Page in**, select **Portal**, and ensure that the current portal name appears in the field.
   - Click the **Advanced Edit Options** icon next to the **Visible** check box, and select **Expression Builder**.
5. Select **Choose a value**, and then select **Portal Info** from the first drop-down list, and **CurrentPortal Role - Moderator** from the second list.

   The expression `#{WCSecurityContext.userInScopedRole['Moderator']}` appears in the text field.

   > **Tip:** If you are working with a custom role, select **CurrentPortal Role - Custom**. In the text area, highlight `CustomRole`, then type in the name of your custom role.

6. Click **OK** until you return to the **Assets** tab.
7. Click **Save**.

To test this, add a member to the portal, and assign this user any role other than `Moderator`. Log off and log back in as that user. You should not see the Pages Query navigational item.

G.3 ELs Related to Applications

Table G–1 lists the EL expression relevant to an application and describes the type of functionality it provides. The listed EL applies to both portals built with WebCenter Portal and Portal Framework applications built with JDeveloper.

For information about EL expressions relevant only to WebCenter Portal, see Section G.14.3, "EL Expressions Relevant to WebCenter Portal Information."

Table G–1 EL Expression Relevant to an Application

Expression	Function
`#{requestContext.skinFamily}`	Returns the name of the ADF Faces skin family being used for the current web request, depending on factors such as what has been configured at the application level, the current user's preference setting, and so on. Returns the same value as `#{adfFacesContext.skinFamily}`.

G.4 ELs Related to Security

Table G.4 lists EL expressions relevant to application security and describes the types of functionality they provide. Some of these expressions can be used in both Portal Framework applications and portals built with WebCenter Portal. The **Context** column indicates whether the EL is exclusive to Framework applications, exclusive to WebCenter Portal, or can be used with both (Both).

Table G–2 EL Expressions Relevant to Security

Expression	Function	Context
`#{security.authenticated}`	Returns `true` when the current user is authenticated in the context in which the EL is being invoked, otherwise `false`.	Both
`#{securityContext.userName}`	Returns the user name of the currently logged in user. If the current user is not logged in, this expression returns no value.	Both
`#{WCSecurityContext.currentUser['`*`userName`*`']}`	Returns the value `true` if the current user is the specified user, otherwise `false`.	Both
`#{WCSecurityContext.userInAppRole['`*`role`*`']}`	Returns the value `true` if the current user is assigned the specified OPSS application role. This expression is useful in Portal Framework applications that are scope unaware (that is, that do not support portals). Example: `#{WCSecurityContext.userInAppRole['AppConnectionManager']}`	Framework applications
`#{WCSecurityContext.userInGroup['`*`group`*`']}`	Returns the value *true* if the current user is assigned the specified group, for example: `#{WCSecurityContext.userInGroup['Administrators']}`	Both
`#{security.pageContextCommunityModerator}`	Returns the value *true* if the current user is a moderator of the current portal.	WebCenter Portal
`#{WCSecurityContext.userInScopedRole['`*`role`*`']}`	Returns the value *true* if the current user is assigned the specified role in the current scope. Role can be `Moderator`, `Participant`, `Viewer`, or a custom role defined in that scope. The scope is implicitly resolved to be the current scope. If you use this EL in the Home portal, it resolves to Home portal GUID and roles defined at the application level. If you use this EL in a portal scope, it resolves to roles defined for the portal.	WebCenter Portal

G.4.1 Example: Restricting Access to Structure View in Composer Using EL Expressions

This section provides an example of using EL expressions to display something based on a user's role. In the example, you will create a page style and edit its source code to add an EL expression that allows only users granted the `AdvancedEdit` role to be able to access Structure view of Composer in the Home portal.

To restrict access to Structure view in Composer in the Home portal:

1. Log on to WebCenter Portal with administrative privileges, and navigate to the **Security** tab in WebCenter Portal Administration.
2. Create a new role called `AdvancedEdit`, and assign it to the user, `weblogic`.

   For information about application-level roles and permissions in WebCenter Portal, see the "Managing Security Across Portals" chapter in *Administering Oracle WebCenter Portal*.

The user `weblogic` will now have two roles: `Administrator` and `AdvancedEdit`.

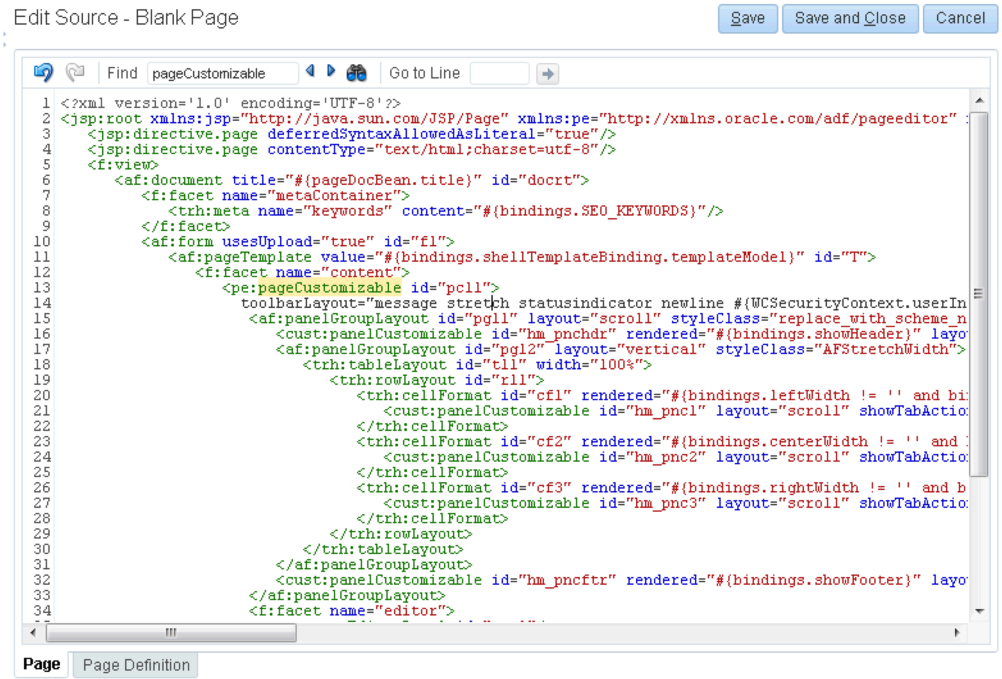
3. Create a new page style, say Blank Page (For information about creating page styles, see the "Creating a Page Style" section in *Building Portals with Oracle WebCenter Portal*.)

4. To grant access to Composer's Structure view only to the users with the `AdvancedEdit` role, edit the source code of the page style and add the following attribute to the `<pe: pageCustomizable>` tag (Figure G–6):

```
toolbarLayout="message stretch statusindicator newline designViews="design
#{WCSecurityContext.userInScopedRole['AdvancedEdit'] ? 'source' : '}"
addonpanels stretch help button"
```

   For information about editing the source code, see the "Editing the Source Code of an Asset" section in *Building Portals with Oracle WebCenter Portal*.

Figure G–6 Editing Source Code of a Page Style



```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
   <jsp:directive.page deferredSyntaxAllowedAsLiteral="true"/>
   <jsp:directive.page contentType="text/html;charset=utf-8"/>
   <f:view>
      <af:document title="#{pageDocBean.title}" id="docrt">
         <f:facet name="metaContainer">
            <trh:meta name="keywords" content="#{bindings.SEO_KEYWORDS}"/>
         </f:facet>
         <af:form usesUpload="true" id="f1">
            <af:pageTemplate value="#{bindings.shellTemplateBinding.templateModel}" id="T">
               <f:facet name="content">
                  <pe:pageCustomizable id="pcl1">
                    toolbarLayout="message stretch statusindicator newline #{WCSecurityContext.userIn
                     <af:panelGroupLayout id="pgl1" layout="scroll" styleClass="replace_with_scheme_n
                        <cust:panelCustomizable id="hm_pnchdr" rendered="#{bindings.showHeader}" layo
                        <af:panelGroupLayout id="pgl2" layout="vertical" styleClass="AFStretchWidth">
                           <trh:tableLayout id="tl1" width="100%">
                              <trh:rowLayout id="rl1">
                                 <trh:cellFormat id="cf1" rendered="#{bindings.leftWidth != '' and bi
                                    <cust:panelCustomizable id="hm_pnc1" layout="scroll" showTabActio
                                 </trh:cellFormat>
                                 <trh:cellFormat id="cf2" rendered="#{bindings.centerWidth != '' and
                                    <cust:panelCustomizable id="hm_pnc2" layout="scroll" showTabActio
                                 </trh:cellFormat>
                                 <trh:cellFormat id="cf3" rendered="#{bindings.rightWidth != '' and b
                                    <cust:panelCustomizable id="hm_pnc3" layout="scroll" showTabActio
                                 </trh:cellFormat>
                              </trh:rowLayout>
                           </trh:tableLayout>
                        </af:panelGroupLayout>
                        <cust:panelCustomizable id="hm_pncftr" rendered="#{bindings.showFooter}" layo
                     </af:panelGroupLayout>
                     <f:facet name="editor">
```

5. Log in as a user other than `weblogic`, and in the Home portal create a page using the Blank Page page style. When you open the page in Composer, the page appears in Design view, and no Structure tab is available because the user is not granted the `AdvancedEdit` role.

   Applying this technique to all page styles available to users in the Home portal completely controls access to Structure view. You can follow the same technique for other portals.

G.5 ELs Related to General Settings

Table G.5 lists EL expressions relevant to general application settings and describes the types of functionality they provide. All listed ELs apply to both portals built with WebCenter Portal and Portal Framework applications built with JDeveloper.

Table G–3 EL Expressions Relevant to General Settings

Expression	Function
`#{generalSettings.userTimeZone}`	Returns the time zone the current user has selected in application preferences.
`#{generalSettings.preferredDateStyle}`	Returns the date format the current user has selected in application preferences.
`#{generalSettings.preferredDatePattern}`	Returns the current user's preferred date format pattern if it has been set, else, returns `null`. Note that date + pattern is applicable only to Portal Framework applications, where they take precedence over date + style if they are set.
`#{generalSettings.preferredTimeStyle}`	Returns the time format the current user has selected in application preferences.
`#{generalSettings.preferredTimePattern}`	Returns the current user's preferred time format pattern if it has been set, else, returns `null`.
`#{generalSettings.preferredDateTimePattern}`	Returns the current user's preferred date and time format pattern if it has been set, else, returns `null`.
`#{generalSettings.preferredAccessibilityMode}`	Returns the current user's preferred accessibility mode (either `default`, `inaccessible`, or `screenReader`)
`#{generalSettings.preferredSkinName}`	The current user's preferred skin name if one is specified, otherwise the default value.
`#{generalSettings.formattedCurrentDate}`	Returns the current date in the current user's selected locale.
`#{generalSettings.formattedCurrentTime}`	Returns the current time in the current user's selected locale.
`#{generalSettings.formattedCurrentDateTime}`	Returns the current date and time in the current user's selected locale.
`#{requestContext.skinFamily}`	Returns the name of the ADF Faces skin family being used for the current web request, depending on factors such as what has been configured at the application level, the current user's preference setting, and so on.

G.6 ELs Related to Portal Resources

Use the expressions in this section to query for portal resources. Querying for a portal resource through an EL expression is similar to querying for it through an API call. That is, you must set query parameters in the format `.`*`property`*`['`*`value`*`']`, where *`property`* is the name of the property, for example, `id`, `resourceScope`, and so on, and *`value`* is the search value for the attribute.

A query can result in single or multiple results. The query designer must decide what is wanted. The query designer determines whether to return one or multiple results by encountering one of the following values in the expression:

- `singleResult`—Returns a single portal resource. When no matching resource is found, null is returned.
- `resultList`—Returns a list of portal resources. When no matching portal resources are found, an empty list is returned.

> **Note:** Occurrences of `singleResult` or `resultList` in the expression are used internally as the query end point, and, after this, the query is executed immediately. Anything set after the end point can result in unexpected behavior.

The following example returns the first page template portal resource found with a display name that contains `myPage`:

```
#{srmContext.resourceType['siteTemplate'].displayName['myPage'].singleResult}
```

The following example returns a list of page template portal resources residing in the directory `resourceDir`, with a description that contains `sampleDesc`:

```
#{srmContext.resourceType['siteTemplate'].description['sampleDesc'].contentDirecto
ry['resourceDir'].resultList}
```

A property of this class includes any attribute of this class. Example properties include: `Id`, `DisplayName`, `iconURI`, `contentDirectory`, and so on.

The property value can be an explicit value or an EL expression that returns that type of value. For example, the following two queries return the same result:

```
#{srmContext.id['resourceId'].singleResult}

#{srmContext.id['spacesContext.currentSpace.uiMetadata.siteTemplateId'].singleResu
lt}
```

You can use any property of this class in an EL-based query in the format *`property`*`['`*`value`*`']` and in any order. For example, the following two queries return the same result:

```
#{srmContext.resourceScope['scopeName'].id['resourceId'].singleResult}

#{srmContext.id['resourceId'].resourceScope['scopeName'].singleResult}
```

Table G–4 lists EL expressions relevant to portal resources and describes the types of functionality each provides. Many of the expressions in Table G–4 are building blocks for narrowing down the portal resource or resources you want returned. That is, they are not necessarily meant to be used by themselves, but rather in an assembly of ELs to form the desired query.

For example, the following expression uses three portal resource-related ELs to form a single query that returns a particular portal template. It retrieves the template `storesMasterTemplate` from the parent portal `stores`:

```
#{srmContext.resourceScope['stores'].resourceType['siteTemplate'].displayName['sto
resMasterTemplate'].singleResult}
```

For information about EL expressions relevant only to WebCenter Portal assets, see Section G.14.4, "EL Expressions Relevant to Assets."

Table G–4 ELs Relevant to Portal Resources

EL	Function
#{srmContext.id['*resourceGUID*']}	Returns the portal resource with the specified ID
#{srmContext.displayName['*resourceDisplayName*']}	Returns any portal resources with the specified display name
#{srmContext.displayNameKey['*displayNameKey*']}	Returns any portal resources with the specified display name key
#{srmContext.description['*resourceDescription*'].singleResult}	Returns one result of a portal resource that contains the specified value in its description To get multiple results, use resultList in lieu of singleResult.
#{srmContext.descriptionKey[*descriptionKey*].singleResult}	Returns one result of a portal resource with the specified description key The description key is the key in the xsrt file for the portal resource description. To get multiple results, use resultList in lieu of singleResult.
#{srmContext.createdDate['*resourceCreationDate*']}	Returns any portal resource with the specified creation date
#{srmContext.modifiedBy['*resourceLastModifiedBy*']}	Returns any portal resource that was last modified by the user with the specified user name
#{srmContext.modifiedDate['*resourceLastModifiedDate*']}	Returns any portal resource that was last modified by the specified date
#{srmContext.resourceScope['*resourceScope*']}	Returns any portal resource that falls within the specified scope
#{srmContext.category['*categoryName*']}	Returns any portal resource that falls within the specified category For example: #{srmContext.category['siteTemplates']}
#{srmContext.contentDirectory['*contentDirectory*']}	Returns any portal resource that is stored within the specified directory
#{srmContext.metadataFile['*metadataFileLocation*']}	Returns portal resource metadata from the specified metadata file For example, the following expression returns resource metadata from the following file /home/metadata/data.xml: #{srmContext.metadataFile['/home/metadat/data.xml']}
#{srmContext.jspx['*jspxFileLocation*']}	Returns any jspx file in the specified location For example, the following expression returns the page.jspx file: #{srmContext.jspx['/home/web/page.jspx']}
#{srmContext.pageDef['*pageDefinition*']}	Returns any jspx file with the specified page definition
#{srmContext.iconURI['*iconURI*']}	Returns the icon at the specified icon URI

Table G–4 (Cont.) ELs Relevant to Portal Resources

EL	Function
`#{srmContext.excludeFrom['`*`excludeFromScopes`*`']}`	In a larger expression, returns all specified portal resources except those available in the excluded scopes
`#{srmContext.usesCustomSecurity['`*`usesCustomSecurity`*`']}`	In a larger expression, returns any portal resource that either does or does not use custom security Set *`usesCustomSecurity`* to `TRUE` or `FALSE`. For example: `#{srmContext.usesCustomSecurity['TRUE']}`
`#{srmContext.seeded['`*`seeded`*`']}`	In a larger expression, returns any portal resource that is or is not seeded, depending on the provided value Set *`seeded`* to `TRUE` or `FALSE`. For example: `#{srmContext.seeded['TRUE']}`
`#{srmContext.visibleType['`*`visibleType`*`']}`	In a larger expression, returns any portal resource that is of the specified type of visibility Set *`visibleType`* to `TRUE`, `FALSE`, or `NEVER` to indicate that the portal resource is never shown. For example, the following expression returns portal resources that are visible, that is, portal resources that are set to **Show**: `#{srmContext.visibleType['TRUE']}`
`#{srmContext.visible['`*`visible`*`']}`	In a larger expression, returns one or multiple portal resources with visibility set to either `TRUE` or `FALSE`
`#{srmContext.createdBy['`*`resourceCreator`*`']}`	In a larger expression, returns any portal resource created by the specified user
`#{srmContext.resourceType['`*`resourceType`*`']}`	In a larger expression, returns one or multiple portal resources of the specified type For example, the following expression searches for a portal resource of the type `SITE_TEMPLATE`: `#{srmContext.resourceType['SITE_TEMPLATE']}` Note that all resource types are listed in *Java API Reference for Oracle WebCenter Portal*, in the `GenericSiteResourceTypes` class.

Table G–4 (Cont.) ELs Relevant to Portal Resources

EL	Function
`#{srmContext.version['version']}`	In a larger expression, returns one or multiple portal resources available in the application of the specified version
`#{srmContext.resourceScope['scopeName']}`	In a larger expression, returns one or multiple portal resources available in the specified scope For example, the following expression searches for portal resources in the scope (in this instance, the portal) `MyPortal`: `#{srmContext.resourceScope['MyPortal']}` To search in the default scope, that is, the application scope, use `defaultScope`.
`#{srmContext.searchType['searchType']}`	In a larger expression, returns one or multiple portal resources that contain or equal the values set by other included expressions Set *searchType* to `CONTAINS` or `EQUALS`.

G.7 ELs Related to Navigation

Table G.7 lists EL expressions relevant to application navigation and describes the types of functionality they provide. All listed navigation ELs apply to both portals built with WebCenter Portal and Portal Framework applications built with JDeveloper.

Table G–5 EL Expressions Relevant to Navigation

Expression	Function
Navigation Context Expressions	
`#{navigationContext.defaultNavigationModel}`	Returns default navigation model. It gets the value from the preference bean. The preference bean gets the value based on the preference setting in `adf-config.xml`, `static value`. The following example returns the specified default tree model: `#{navigationContext.defaultNavigationModel.defaultTreeModel}` You can also use `defaultMenuModel` and `defaultListModel` (see next listing).
`#{navigationContext.currentNavigationModel}`	Returns the navigation model used to navigate to the current view (that is, the current page) There may be a number of navigation models on the page. Only the one used to navigate to the page is the current navigation model. The current navigation model is set only when the `processAction` is called. The following example returns the default tree model for the current navigation model: `#{navigationContext.currentNavigationModel.defaultTreeModel}` You can also use `defaultMenuModel` and `defaultListModel`. **See Also:** `#{navigationContext.processAction}`.

Table G–5 (Cont.) EL Expressions Relevant to Navigation

Expression	Function

`#{navigationContext.navigationModel['`*`model_path`*`']}`	Returns the navigation model specified by path.
	Example:
	`#{navigationContext.navigationModel['/oracle/webcenter/portalapp/navigations/default-navigation-model']}`
	User can simply enter the path in the square bracket without having to remember the parameter name. For backward compatibility, comma-separated parameters are also supported. Available parameters (with examples) are:
	■ `modelPath=/oracle/webcenter/portalapp/navigations/default-navigation-model`
	■ `modelScope=/oracle/webcenter/portalapp/navigation`
	■ `modelId=default-navigation-model`
	Note: `modelScope` and `modelId` are used together, for example:
	`#{navigationContext.navigationModel['modelScope=/oracle/webcenter/portalapp/navigations,modelId=default-navigation-model']}`

Table G–5 (Cont.) EL Expressions Relevant to Navigation

Expression	Function

`#{navigationContext.processAction}`	Returns the default navigation method for binding to UI component's `actionListener` attribute. This assumes that the target resource to navigate to is passed in through the action UI component's `node` or `path` attribute.
	The `node` attribute is typically used for the iterative case; while the `path` attribute is typically used to create a static link. If both are specified, the `node` attribute is used. Note that when using the `path` attribute, you must also specify the `model` attribute to pass in the navigation model object. If the `model` attribute is not specified, the current navigation model is used.
	Example using the `node` attribute:
	`<af:forEach var="node" varStatus="vs"`
	`  items="#{navigationContext.defaultNavigationModel.roo`
	`tNode.children}">`
	`    <af:subform id="pt_sfm1">`
	`      <af:commandLink id="pt_cl1"`
	`        text="#{node.title}"`
	`        inlineStyle="font-size:small;color:White;"`
	`        actionListener="#{navigationContext.processActio`
	`n}"`
	`        action="pprnav">`
	`      <f:attribute name="node" value="#{node}"/>`
	`        <af:showPopupBehavior popupId="menuPopup"`
	`          align="afterStart"`
	`          triggerType="mouseOver"/>`
	`    </af:commandLink>`
	Example using the `path` attribute:
	`<af:commandLink id="pt_cl1" text="Prescriptions"`
	`    inlineStyle="font-size:small; color:White;"`
	`    actionListener="#{navigationContext.processAction}"`
	`    action="pprnav">`
	`<f:attribute name="path" value="/prescriptions"/>`
	`<f:attribute name="model"`
	`    value="#{navigationContext.defaultNavigationModel}"`
	`/>`
	`</af:commandLink>`

Navigation Model Expressions	

`#{navigationContext.defaultNavigationModel.defaultTreeModel}`
`#{navigationContext.defaultNavigationModel.defaultMenuModel}`
`#{navigationContext.defaultNavigationModel.defaultListModel}`
`#{navigationContext.defaultNavigationModel.defaultSiteMap}`
	Returns a tree/menu/list model based on the default settings
	The default values for the settings are specified in the next row. For example, the default value for `depth` is `0`.
	For `defaultSiteMap`, it returns the XML for the site map of the navigation based on the default settings.
	This expression returns a model of type:
	■ `ChildPropertyTreeModel`—used in `<af:tree>` component
	■ `ChildPropertyMenuModel`—used in `<af:breadcrumbs>` or <af:menu> component
	■ `List`*`NavigationResource`*—used in `<af:foreach>`

Table G–5 (Cont.) EL Expressions Relevant to Navigation

Expression	Function

`#{navigationContext.defaultNavigationModel.treeModel['`*`parameters`*`']}`
`#{navigationContext.defaultNavigationModel.menuModel['`*`parameters`*`']}`
`#{navigationContext.defaultNavigationModel.listModel['`*`parameters`*`']}`
`#{navigationContext.defaultNavigationModel.siteMap['`*`parameters`*`']}`
	Returns tree/menu/list model based on the specified comma-separated parameters. Available parameters (with default values as examples) are:
	■ `startNode=/`—specify the starting node of the model (do not need "/" prefix unless requesting the root node, for example, `home`).
	■ `includeStartNode=true`—specify `true` if you want to include the starting node (for example, the root node above) or `false` to start from its children.
	■ `depth=0`—defines the initial depth of fetching. "0" means fetch the entire tree, which may take a long time. In which case, use "1" to fetch on demand (when users click the **Expand** icon).
	■ `prefetchOnly=false`—by default (`true`), it returns nodes up to the depth level requested initially; deeper level nodes are returned on demand. Use `false` if you want only the initial sets of nodes. In which case, it does not return deeper nodes later on when requested, even when there are deeper nodes.
	For `siteMap`, the available parameters are `startNode` and `includeStartNode`.
	Example:
	`#{navigationContext.defaultNavigationModel.treeModel['`
	`startNode=home,includeStartNode=false,depth=2']}`

`#{navigationContext.defaultNavigationModel.rootNode}`	Returns a root node (of type `NavigationResource`) of the navigation model.
	Example:
	`<af:commandLink id="pt_cl1" text="Prescriptions"`
	`   inlineStyle="font-size:small; color:White;"`
	`   actionListener="#{navigationContext.processAction}"`
	`   action="pprnav">`
	`  <f:attribute name="node"`
	`       value="#{navigationContext.`
	`       defaultNavigationModel.`
	`       rootNode.children[2]"/>`
	`</af:commandLink>`

`#{navigationContext.defaultNavigationModel.node['`*`path`*`']}`	Returns a node (of type `NavigationResource`) based on the path specified (you do not need "/" prefix unless you are requesting the root node, for example, `'/'`)
	Example:
	`#{navigationContext.defaultNavigationModel.node['home/`
	`page1']}`

`#{navigationContext.defaultNavigationModel.currentSelection}`	Returns currently selected navigation portal resource.

Table G–5 (Cont.) EL Expressions Relevant to Navigation

Expression	Function

`#{navigationContext.defaultNavigationModel.newCurrentSelection['path']}`	Sets the current selection to a node specified by the given path (you do not need "/" prefix unless you are requesting the root node, for example, `'/'`). If successful, returns the newly selected node of type `NavigationResource`.
	The user must have the ability to explicitly set the current selection without having to actually navigate to a node.
	This can be used where the user enters a page directly, and no selection is set. It provides a mechanism for the user to control what is the default when there is no current selection.
	Example:
	`<c:set`
	`  value="${navigationContext.defaultNavigationModel.new`
	`CurrentSelection['home/page1']}"`
	`  var="currSel" scope="session"/>`
	`<c:if test="${currSel!=null}">`
	`  <af:forEach items="#{currSel.children}"`
	`    var="cnode" varStatus="cnodestatus">`
	`...`
	`</c:if>`

`#{navigationContext.defaultNavigationModel.attributes.Description}`
`#{navigationContext.defaultNavigationModel.attributes['Description']}`
	Returns the value of the specified attribute of the navigation model.

`#{navigationContext.defaultNavigationModel.properties['`propertyName`']}`	Returns the value of the specified property of the navigation model, where propertyName is either `rootNode` or `currentSelection`.
Navigation Portal Resource Expressions	

`#{node.attributes.Description}`
`#{node.attributes['Description']}`
	Returns the value of the specified attribute of the navigation portal resource.

`#{node.parameters.StockSymbol}`
`#{node.parameters['StockSymbol']}`
	Returns the value of the specified parameter of the navigation portal resource.

`#{node.parametersRaw.StockSymbol}`
`#{node.parametersRaw['StockSymbol']}`
	Returns the raw value of the specified parameter of the navigation portal resource (before it is evaluated).

`#{node.title}`	Returns the title of the navigation portal resource.
`#{node.path}`	Returns the path to the navigation portal resource.
`#{node.externalURL}`	Returns the URL for the navigation portal resource of type `External Link`.
`#{node.prettyUrl}`	Returns the identifying path for this navigation portal resource.

`#{node.prettyUrlPath}`
`#{node.prettyUrlPath[N]}`
	Returns a collection of identifying paths by depth to enable its use as a starting path to drive another navigation view.
	For example, assuming the `currentSelection` is `home/company/products/applications`, the following EL returns `home/company/products`:
	`#{node.prettyUrlPath[3]}`

Table G–5 (Cont.) EL Expressions Relevant to Navigation

Expression	Function

`#{`*node*`.goLinkPretty Url}`	Returns the identifying path for this navigation portal resource suitable for `goLink` destination
	`<af:goLink id="pt_gl2" text="#{node.title}"`
	`     destination="#{node.goLinkPrettyUrl}"`
	`     targetFrame="#{node.attributes['Target']}"`
	`     inlineStyle="font-size:small;#{node.selected ?`
	`     'font-weight:bold;' : ''}"/>`

`#{`*node*`.separator ? ... : ...}`	Returns whether this portal resource is a separator item.
`#{`*node*`.navigable ? ... : ...}`	Returns whether it is possible to navigate to this portal resource.
`#{`*node*`.selected ? ... : ...}`	Returns whether this portal resource is currently selected.
`#{`*node*`.currentlySelected ? ... : ...}`	Returns whether the portal resource is the currently selected portal resource and the model is the currently selected model.

`#{`*node*`.onSelectedPath ? ... : ...}`	Returns whether this node lies on the selected path. This is useful for highlighting the selected tab, for example.
	For example, assuming the currently selected node is `home/company/products/applications`, the following EL highlights the `home` tab.
	`<c:set`
	`  value="${navigationContext.defaultNavigationModel.nod`
	`e['home']}"`
	`  var="home" scope="session"/>`
	`    <af:commandImageLink id="cil1"`
	`        icon="#{(home.onSelectedPath) ?`
	`        '/images/caremark/nav/HomeSelected.png' :`
	`        '/images/caremark/nav/HomeIcon.png'}"`
	`        actionListener="#{navigationContext.processActio`
	`n}"`
	`        action="pprnav">`
	`    <f:attribute name="node" value="#{home}"/>`
	`</af:commandImageLink>`

`#{`*node*`.leaf ? ... : ...}`	Returns whether this resource is a leaf node.
`#{`*node*`.parent}`	Returns the parent node (of type `NavigationResource`) of this node. For the root node, `null` is returned.
`#{`*node*`.ancestors}`	Returns the hierarchy list of ancestors of this node (of type NavigationResource) starting with the root node. For example, assuming the current node is `home/company/products/applications`, the following ELs return the following values: ■ `#{node.ancestors[1]}` returns the node for `home` ■ `#{node.ancestors[3]}` returns the node for home/company/products
`#{`*node*`.depth}`	Returns the depth of this node from the root node. Root node has a depth of zero.
`#{`*node*`.siblings}`	Returns the list of siblings (of type `NavigationResource`) of this node (inclusive).

Table G–5 (Cont.) EL Expressions Relevant to Navigation

Expression	Function

`#{`*node*`.nextSibling}`	Returns the next sibling in the list (of type `NavigationResource`) of this node.
	For example, the following code ensures that you do not output two separators in a row:
	`<c:if test="${(node.separator) && (!node.nextSibling.separator}">`
	`   <af:separator id="s166"/>`
	`</c:if>`

`#{`*node*`.previousSibling}`	Returns the previous sibling in the list (of type `NavigationResource`) of this node.
`#{`*node*`.index}`	Returns the zero-relative index of this node relative to its siblings.

`#{`*node*`.children}`
`#{`*node*`.children[`*N*`].title}`
`#{`*node*`.children[`*N*`].children[`*N*`].title}`
	Returns a collection of child resources.

`#{`*node*`.childCount}`	Returns the number of children of this node.
`#{`*node*`.childByIndex['index']}`	Returns the child node (of type `NavigationResource`) specified by the zero-relative index. If not found, this returns `null`.
`#{`*node*`.childByPath['admin']}`	Returns the child node (of type `NavigationResource`) specified by the path relative to this node. The path can be deeper than one level and does not need the `'/'` prefix. If not found, this returns `null`.
#{*node*`.properties['propertyName']}`	Returns the value of the specified property of the navigation portal resource, where `propertyName` is one of the following: `separator`, `title`, `prettyUrl`, `prettyUrlPath`, `depth`, `leaf`, `childCount`, `navigable`, `selected`, or `currentlySelected`.

G.7.1 Example: Using EL Expressions for Navigation

This section provides an example of using a navigation model to monitor activities of two subportals from a shared page in the parent portal. In this example, you use a page containing the Activity Stream task flow. The content of the task flow is determined by a parameter passed to the page. The navigation model includes two links that link to the page. The first link passes `subportal1` as the parameter so that the Activity Stream task flow shows activities of `subportal1`. The second link passes `subportal2` as the parameter. So, the content of the page is different depending on which link you click in the navigation.

To build a navigation model that uses ELs to monitor subportal activity from a parent portal:

1. In WebCenter Portal, create a portal, and two subportals. While creating subportals, note down the internal name used (for example, `subportal1` and `subportal2`).
2. In your portal, create a page called `Subportal Activity`, and add the Activity Stream task flow to the page. For information about adding a task flow, see the "Adding Components to a Page" section in *Building Portals with Oracle WebCenter Portal*.

3. Create a page parameter, say `subportalName`, for the newly created page. For information, see the "Adding or Modifying Page Parameters" section in *Building Portals with Oracle WebCenter Portal*.

   Use the following EL as the value of the parameter:

   ```
   #{empty
   navigationContext.currentNavigationModel.currentSelection.parameters.subspaceNa
   me ? 'subportal1' :
   navigationContext.currentNavigationModel.currentSelection.parameters.subspaceNa
   me}
   ```

   where '`subportal1`' is the value to be used for the page parameter if none is passed to it from the navigation.

4. Edit the settings of the Activity Stream task flow. In the Component Properties dialog, on the **Parameters** tab, for the **Spaces** parameter, open the Expression Builder, and for **Page Parameter**, select **subportalName**.

5. On the **Display Options** tab, for the **Text** field, specify a value that shows the name of the subportal whose activity is shown. For example, use the following EL:

   ```
   #{bindings.subspaceName} Activity
   ```

6. Build a navigation that passes the portal to show your page:

   a. Create a navigation based on **Portal Default Navigation Model**.

   b. Edit the navigation by adding a Link navigation item.

   c. On the **Target** tab, in the **Name** field, specify the name of the Link item as `Sub Portal 1`.

   d. In the **Path** field, select the `Subportal Activity` page.

   e. On the **Parameters** tab, for the `subportalName` field, specify the internal name of the first subportal, `subportal1`.

7. Copy the newly created link, and edit it to make a link for the second subportal, `subportal2`.

   While editing, on the **Target** tab you only need to change the **Name** of the link. On the **Parameters** tab, you only need to change the value of the **subportalName** parameter to `subportal2` (the internal name of the second subportal).

8. Make sure the newly created navigation is set as the current navigation for your portal.

9. You now have two links that take you to the shared `Subportal Activity` page, passing different values for the portal depending on the link you click.

G.8 ELs Related to Tools and Services

Table G.8 lists EL expressions relevant to tools and services and describes the types of functionality they provide. All listed ELs apply to both portals built with WebCenter Portal and Portal Framework applications built with JDeveloper.

Table G–6 EL Expressions Relevant to Tools and Services

Expression	Function
`#{webcenterService['`*`serviceId`*`']}`	An `oracle.webcenter.framework.service.Service` object representing the WebCenter Portal tool or service represented by the service ID `serviceId`. For example, the following EL returns *Documents Service*: `#{webcenterService['oracle.webcenter.doclib']}` For service IDs, see Table G–7.
`#{webcenterService['`*`serviceId`*`'].configured}`	Returns a Boolean value that indicates whether the WebCenter Portal tool or service represented by the service ID *`serviceId`* is configured for use in the current Portal Framework application. For example, the following EL returns `true` if discussions can be used in the application, `false` otherwise: `#{webcenterService['oracle.webcenter.collab.forum'].configured}` For service IDs, see Table G–7.
`#{sessionContext['oracle.webcenter.collab.forum'].groupInfo['`*`portalName`*`'].forumId}`	Returns the forum ID of the specified portal discussion forum. Enter the portal name in lieu of *`portalName`*.
`#{sessionContext['oracle.webcenter.collab.forum'].groupInfo['`*`portalName`*`'].categoryId}`	Returns the category ID of the specified portal discussion forums. Enter the portal name in lieu of *`portalName`*.

Table G–7 lists service IDs associated with WebCenter Portal tool and services.

Table G–7 Service and Tool IDs

Service/Tool	ID
Announcements	oracle.webcenter.collab.announcement
Discussions	oracle.webcenter.collab.forum
Documents and Wikis	oracle.webcenter.doclib
Events	oracle.webcenter.collab.calendar.community
Instant Messaging and Presence (IMP)	oracle.webcenter.collab.rtc
Links	oracle.webcenter.relationship
Lists	oracle.webcenter.list
Mail	oracle.webcenter.collab.mail
Notifications	oracle.webcenter.notification
Page	oracle.webcenter.page
People Connections: Activity Stream	oracle.webcenter.activitystreaming
People Connections: Connections	oracle.webcenter.peopleconnections.connections
People Connections: Feedback	oracle.webcenter.peopleconnections.kudos
People Connections: Message Board	oracle.webcenter.peopleconnections.wall
People Connections: Profile	oracle.webcenter.peopleconnections.profile
Polls	oracle.webcenter.collab.survey
Recent Activities	oracle.webcenter.recentactivity

Table G–7 (Cont.) Service and Tool IDs

Service/Tool	ID
Activity Graph	oracle.webcenter.activitygraph
RSS	oracle.webcenter.rss
Search	oracle.webcenter.search
Tags	oracle.webcenter.tagging
Blogs	oracle.webcenter.blog
Worklist	oracle.webcenter.worklist

G.9 ELs Related to Documents

Table G–8 lists EL expressions relevant to documents and describes the types of functionality they provide. All listed ELs apply to both portals built with WebCenter Portal and Portal Framework applications built with JDeveloper.

Table G–8 EL Expressions Relevant to Documents

Expression	Function
`#{documentsService.defaultConnectionName}`	Gets the default content repository connection name. Returns `null` if no connection name is defined.
`#{documentsService.configured}`	Checks whether the documents feature is configured. Returns `true` if the documents feature is configured, otherwise `false`.

G.10 ELs Related to People Connections

Table G–9 lists EL expressions relevant to the Profile feature of the people connections and describes the types of functionality they provide. All listed ELs apply to both portals built with WebCenter Portal and Portal Framework applications built with JDeveloper.

> **Note:** The entry `securityContext.userName`, included in every Profile expression, returns the name of the current user. Note also that information is returned only if it is present in the user's profile. If the information is not included in the profile, a null value is returned.

Table G–9 EL Expressions Relevant to People Connections (Profile)

Expression	Function

`#{webCenterProfile[`*`userName`*`].ManagerDisplayName}`
`#{webCenterProfile[securityContext.userName].ManagerDisplayName}`
	The display name of the specified user's manager if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].employeeNumber}`
`#{webCenterProfile[securityContext.userName].employeeNumber}`
	The specified user's employee number if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].businessPOBox}`
`#{webCenterProfile[securityContext.userName].businessPOBox}`
	The post office box number associated with the specified user if the current user is allowed to know it.

Table G–9 (Cont.) EL Expressions Relevant to People Connections (Profile)

Expression	Function

`#{webCenterProfile[`*userName*`].timeZone}`
`#{webCenterProfile[securityContext.userName].timeZone}`
	The time zone in which the specified user's home office is located if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].description}`
`#{webCenterProfile[securityContext.userName].description}`
	A description of the specified user (from Profile "About Me") if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].department}`
`#{webCenterProfile[securityContext.userName].department}`
	The department to which the specified user belongs if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].businessPager}`
`#{webCenterProfile[securityContext.userName].businessPager}`
	The specified user's business pager number if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].businessCity}`
`#{webCenterProfile[securityContext.userName].businessCity}`
	The city in which the specified user is located if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].maidenName}`
`#{webCenterProfile[securityContext.userName].maidenName}`
	The specified user's surname or last name before marriage if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].businessFax}`
`#{webCenterProfile[securityContext.userName].businessFax}`
	The specified user's business fax number if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].dateofHire}`
`#{webCenterProfile[securityContext.userName].dateofHire}`
	The specified user's date of hire if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].nameSuffix}`
`#{webCenterProfile[securityContext.userName].nameSuffix}`
	Additional information appended to the user's name, such as `Esq.`, `Jr.`, and so on if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].middleName}`
`#{webCenterProfile[securityContext.userName].middleName}`
	The specified user's middle name if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].homePhone}`
`#{webCenterProfile[securityContext.userName].homePhone}`
	The specified user's home phone number if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].employeeType}`
`#{webCenterProfile[securityContext.userName].employeeType}`
	The specified user's employee type classification, for example, `IC4` if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].lastName}`
`#{webCenterProfile[securityContext.userName].lastName}`
	The specified user's surname or last name if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].dateofBirth}`
`#{webCenterProfile[securityContext.userName].dateofBirth}`
	The specified user's birthday if the current user is allowed to know it.

`#{webCenterProfile[`*userName*`].businessState}`
`#{webCenterProfile[securityContext.userName].businessState}`
	The state in which the specified user's home office is located if the current user is allowed to know it.

Table G–9 (Cont.) EL Expressions Relevant to People Connections (Profile)

Expression	Function

`#{webCenterProfile[`*`userName`*`].homeAddress}`
`#{webCenterProfile[securityContext.userName].homeAddress}`
	The specified user's home street address if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].businessStreet}`
`#{webCenterProfile[securityContext.userName].businessStreet}`
	The street on which the specified user's home office is located if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].businessPostalCode}`
`#{webCenterProfile[securityContext.userName].businessPostalCode}`
	The specified user's postal or ZIP code if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].initials}`
`#{webCenterProfile[securityContext.userName].initials}`
	The specified user's initials if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].firstName}`
`#{webCenterProfile[securityContext.userName].firstName}`
	The specified user's first name if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].organizationalUnit}`
`#{webCenterProfile[securityContext.userName].organizationalUnit}`
	The organizational unit to which the specified user belongs, for example, `D10`, if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].wirelessAcctNumber}`
`#{webCenterProfile[securityContext.userName].wirelessAcctNumber}`
	The specified user's wireless account number if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].businessPhone}`
`#{webCenterProfile[securityContext.userName].businessPhone}`
	The specified user's business telephone number if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].businessCountry}`
`#{webCenterProfile[securityContext.userName].businessCountry}`
	The country in to which the specified user is assigned if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].preferredLanguage}`
`#{webCenterProfile[securityContext.userName].preferredLanguage}`
	The specified user's preferred language if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].displayName}`
`#{webCenterProfile[securityContext.userName].displayName}`
	The specified user's display name if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].userName}`
`#{webCenterProfile[securityContext.userName].userName}`
	The specified user's actual name if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].title}`
`#{webCenterProfile[securityContext.userName].title}`
	The specified user's job title if the current user is allowed to know it.

`#{webCenterProfile[`*`userName`*`].businessEmail}`
`#{webCenterProfile[securityContext.userName].businessEmail}`
	The specified user's business email address if the current user is allowed to know it.

Table G–9 (Cont.) EL Expressions Relevant to People Connections (Profile)

Expression	Function

`#{webCenterProfile[userName].organization}`
`#{webCenterProfile[securityContext.userName].organization}`
	The organization to which the specified user belongs, for example, `Sales`, if the current user is allowed to know it.

`#{webCenterProfile[userName].businessMobile}`
`#{webCenterProfile[securityContext.userName].businessMobile}`
	The specified user's cell or mobile phone number if the current user is allowed to know it.

`#{webCenterProfile[userName].expertise}`
`#{webCenterProfile[securityContext.userName].expertise}`
	The specified user's business expertise if the current user is allowed to know it.

G.11 ELs Related to Personalization

Table G–10 lists EL expressions relevant to personalization and describes the types of functionality they provide. All listed ELs apply to both portals built with WebCenter Portal and Portal Framework applications built with JDeveloper.

Table G–10 EL Expressions Relevant to Personalization

Expression	Function

`#{p13nContext.reset}`	Clears the state of the context object in which it is invoked.
	Other examples:
	`#{p13nContext.conductor['ConductorConnection'].reset}`
	`#{p13nContext.conductor['ConductorConnection'].namespaces['MyNamespace'].reset}`
	`#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].reset}`

`#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].update}`	Updates the property set with new values if bound to a form. The `update` method applies only to the context `PropertySetContext`, and can be called only as part of a form-based action.

`#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].results}`	Retrieves the results of the context object. In the case of `PropertySetContext`, it retrieves the property set by name and property set definition, if they exist.
	In the case of `ScenarioExecutionContext` and `ParameterizedScenarioExecutionContext`, the scenario results are retrieved.
	Other examples:
	`#{p13nContext.conductor['ConductorConnection'].namespaces['MyNamespace'].scenario['MyScenario'].results}`
	`#{p13nContext.conductor['ConductorConnection'].namespaces['MyNamespace'].scenario['MyScenario'].withInput['input1=val1;input2=value2;input3=value3'].results}`

`#{p13nContext.conductor['PropertiesConnection'].namespaces['MyNamespace'].scenario['MyScenario'].results}`	Executes a scenario by name.

Table G–10 (Cont.) EL Expressions Relevant to Personalization

Expression	Function
`#{p13nContext.conductor['ConductorConnection'].namespaces['MyNamespace'].scenario['MyScenario'].withInput['input1=val1;input2=value2;input3=value3'].results}`	Executes a scenario by name with input parameters. Input parameters must be in the following format: `<paramOne>=<valueOne>;<paramTwo>=<valueTwo>;<paramThree>=<valueThree>` Where each parameter name and value is separated by semicolon. The `withInput` method applies only to the context `ScenarioExecutionContext`.
`#{p13nContext.conductor['ConductorConnection'].namespaces[myManagedBean.namespace].scenario[myManagedBean.scenario].isError}`	Determines if an error has occurred in the current context object. The `isError` method applies only to `PropertySetContext` and `~ScenarioExecutionContext`. Other examples: `#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].isError}`
`#{p13nContext.conductor['ConductorConnection'].namespaces['myManagedBean.namespace'].scenario['myManagedBean.scenario'].errorMessage}`	Returns the error message if an error has occurred in the current context object. The errorMessage method applies only to `PropertySetContext` and `~ScenarioExecutionContext`. Other examples: `#{p13nContext.properties['PropertiesConnection'].namespaces['MyNamespace'].setDefinitions['MyPropertySetDefinition'].set['MyPropertySet'].errorMessage}`

G.12 ELs Related to Impersonation

Table G–11 lists EL expressions relevant to WebCenter Portal Impersonation and describes the types of functionality they provide. All listed ELs apply to both portals built with WebCenter Portal and Portal Framework applications built with JDeveloper.

For more information about using these ELs, see Section 74.19, "Using WebCenter Portal Impersonation ELs and APIs."

Table G–11 EL Expressions Relevant to Impersonation

Expression	Function
`#{WCSecurityContext.impersonationConfigured}`	Returns whether or not impersonation has been enabled for the current domain. This EL can be useful when determining if an error was caused by an impersonation session ending prematurely, or to provide an additional indicator that a session has ended.
`#{WCSecurityContext.userInImpersonationSession}`	Returns whether the current user is in an impersonation session or not. You can use this EL to protect content and render it inaccessible during an impersonation session. For example, you could map the rendered attribute of an administration task flow on a page to this EL only rendering the task flow if the user is not viewing the task flow in an impersonation session.
`#{WCSecurityContext.currentImpersonator}`	This EL could be used to modify the page template to display the impersonator or render content accessible only to a particular impersonator.

G.13 EL Expressions Relevant to Composer

Table G–12 lists EL expressions relevant to Composer. These EL expressions can be used both in portals built with WebCenter Portal and Portal Framework applications built with Oracle JDeveloper.

Table G–12 EL Expressions Relevant to Composer

Expression	Function

`#{composerContext.inEditMode}`	Determines whether the current page is in View mode or Edit mode.
	For example:
	`<af:outputText id="ot1"`
	`   value="#{composerContext.inEditMode ne`
	`   true ? 'View mode' : 'Edit mode'} />`
	This example shows an ADF Faces `outputText` component that returns `View mode` when the page is in View mode and `Edit mode` when the page is in Edit mode.

`#{changeModeBean.inEditMode}`	The `childCreation` attribute determines whether the children of popup dialogs can be viewed in Composer. By default, this attribute is set to `deferred` and users are unable to see the children of popup dialogs. Setting the value to `immediate` allows users to view the children of popup dialogs.
	For example:
	`<af:popup childCreation="#{changeModeBean.inEditMode`
	`   ? 'immediate' : 'deferred'}" />`
	There is a performance impact by setting the `childrenCreation` attribute to `immediate`. If you do not need to use the popup on the page, using the default setting of `deferred` will avoid the penalty of CPU and memory usage when it is not needed. Note that the popup will be shown non-modally, thus, the application must be able to handle that fact without error.

G.13.1 Example: Using EL Expressions for Composer

This section provides an example of using an EL expression to display different pages in View mode and Edit mode. Consider that you want one of your pages, `Page1`, to display another page, `Page2`, in View mode. However, while editing `Page1`, instead of `Page2`, you want to display a website, `www.example.com`. You can use the EL of the following format:

```
#{ composerContext.inEditMode ? 'http://www.example.com' : 'url_of_Page2' }
```

This EL displays the specified website when your page is in Edit mode, and shows `Page2` when in View mode.

The following steps demonstrate how to display different pages depending on the page mode.

1. Open a page named `Page1` in the page editor (Composer).
2. In Design view, in the resource catalog, click **Web Development**.
3. Click **Add** displayed next to **Web Page**.
4. Click the Edit icon for the newly added Web Page.
5. In the Component Properties dialog, on the **Display Options** tab, in the **Source** field, enter the value as per the following format:

   ```
   #{ composerContext.inEditMode ? 'website_url' : 'url_of_Page2' }
   ```

6. Click **OK**.

   In Composer, `Page1` should now display the website you specified. Save and close the page. `Page1` should now show `Page2`.

G.14 EL Expressions Relevant Only to WebCenter Portal

This section contains the following subsections:

- Section G.14.2, "Seeded Expressions in the Expression Editor"
- Section G.14.3, "EL Expressions Relevant to WebCenter Portal Information"
- Section G.14.4, "EL Expressions Relevant to Assets"
- Section G.14.5, "EL Expressions Relevant to Specific Portals"
- Section G.14.6, "EL Expressions Relevant to Specific Pages"
- Section G.14.7, "EL Expressions Relevant to Portal Event Contexts"
- Section G.14.8, "Utilitarian EL Expressions"

G.14.1 Desupport of Freeform JPQL WHERE and SORT Clauses in Portal Queries

In WebCenter Portal, if you have introduced an EL expression for querying portals based on a JPQL `WHERE` clause, you should know that the freeform JPQL `WHERE` clause is desupported. Instead, use a structured `WHERE` clause. Freeform `SORT` clauses are also desupported. Instead, specify sort criteria on a portal query in a structured way.

For example, suppose that you have used the following syntax to form a `WHERE` clause on a portal query:

```
#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].
whereClause['sp.keywords like \'forquery%\' and not
(sp.discoverable is null or sp.discoverable =  \'N\')'].listSpaces}
```

Going forward, you must use the following syntax to form a `WHERE` clause:

```
#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].
where[wCond['sp.keywords']['like']['forquery']['and'][wCond['sp.discoverable']
['is']['null']['or'][wCond['sp.discoverable']['=']['N']]['not']]].listSpaces}
```

Where:

- `wCond` is an atomic condition that can be expressed as `wCond[`*`p`*`][`*`op`*`][`*`v`*`]`.

  Where:

  – *`p`* is a portal attribute (a field in `WcSpaceHeader`, see the following bullet list).

  – *`op`* is one among a restricted set of JPQL comparison operators ('`=`', '`like`', '`!=`', '<', '>', '<=', '>=', '`is`').

  – *`v`* is a string whose interpretation depends on the operator *`op`*.

    If the operator is `is`, *`v`* can be the string `'null'` or `'not null'`, and the condition is understood as the attribute being checked for null or not null respectively in JPQL. If the operator is anything else, *`v`* is interpreted as a literal, and the condition is understood to be the attribute being compared with the literal value.

  You can use any field defined in `WcSpaceHeader` in the `WHERE` clause, including:

  – `closed`

  – `createDate`

  – `createdBy`

  – `description`

  – `discoverable`

  – `displayName`

  – `keywords`

  – `icon`

  – `logo`

  – `lastUpdateDate`

  – `selfSubEnabled`

  – `rssEnabled`

  – `spaceGuid`

  – `spaceId`

  – `spaceOffline`

  – `spacePublic`

  – `spacesType`

  – `spacesUser`

  – `updatedBy`

  – `version`

  – `parentGuid`

  – `securityParentGuid`

   - `ancestorPath`
   - `seeded`
   - `groupSpaceMemCount`

- `sp` represents the JPA entity for a portal, `WcSpaceHeader`.

  For example, you can use the following condition to create a filter for all portals created by users having user names starting with `monty` on which self subscription is enabled:

  ```
  sp.createdBy like 'monty%' and not (sp.selfSubEnabled is null or
  sp.selfSubEnabled = 'N')
  ```

- `and`, `or`, `not` (along with `wCond`) are types of conditions.

  Where:

   - `and` represents a conjunction of two conditions. You can express a conjunction condition as *cond1*`['and'][`*cond2*`]` where *cond1* and *cond2* are the expressions for the two conditions being conjoined.
   - `or` represents a disjunction condition. You can express a disjunction condition as *cond1*`['or'][`*cond2*`]` where *cond1* and *cond2* are the expressions for the two conditions being disjoined.
   - `not` represents a negation condition. You can express a negation condition as *cond*`['not']` where *cond* is the expression for the condition being conjoined.

For example, the following EL returns a list of all portals (to which the current user has access) that are created by users having names starting with `monty` and on which self subscription is enabled:

```
#{spaceContext.spacesQuery.unionOf.ALL_QUERIABLE.where[wCond['sp.createdBy']
['like']['monty%'] ['and'] [wCond['sp.selfSubEnabled']['is']['null'] ['or']
[wCond['sp.selfSubEnabled']['=']['N']] ['not'] ] ].listSpaces}
```

Now imagine that you have used the following syntax to specify `SORT` criteria on a portal query:

```
#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].sortCriteria
['sp.discoverabledesc, sp.keywords'].listSpaces}
```

Going forward, you must use the following syntax to specify `SORT` criteria on a portal query:

```
#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].sort['sp.discoverable']
['desc'].sort['sp.keywords']['asc'].listSpaces}
```

Where:

- `sp` represents the JPA entity for a portal, `WcSpaceHeader` (see previous bullet list for fields defined in `WcSpaceHeader`).
- `desc` and `asc` define sort order, descending and ascending, respectively.

For example, the following query returns a list of portals to which the user has access and sorts the result set on the fields `discoverable` and `lastUpdateDate`.

```
#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].sort['sp.discoverable']
['asc'].sort['sp.lastUpdateDate']['desc'].listSpaces}
```

Oracle *strongly* recommends that you convert all existing freeform JPQL `WHERE` and `SORT` clauses to the new syntax.

If for any reason you must retain the existing syntax, your WebCenter Portal administrator must explicitly enable support for freeform JPQL in the `webcenter-config.xml.xml` file by setting the following global flag:

```
oracle.webcenter.spaces.query.DIRECT_JPQL_CLAUSE_SUPPORTED
```

> **Note:** The `webcenter-config.xml.xml` file is the customization document for `webcenter-config.xml`.

Set this flag to `true` for continued support of legacy freeform `WHERE` and `SORT` clauses. When this option is set to `true`, WebCenter Portal log files will contain warnings.

To set this flag in `webcenter-config.xml.xml`:

1. Export the latest `webcenter-config.xml.xml` from MDS.

   For example:

   ```
   exportMetadata(application='webcenter', server='WC_Spaces',
   toLocation='/tmp/mydata',docs='/oracle/webcenter/webcenterapp/metadata/mdssys/c
   ust/site/webcenter/webcenter-config.xml.xml')
   ```

2. Open the file in a text editor and modify settings, as required.

   For example:

   ```
   <mds:insert parent="webcenter(xmlns(webcenter=http://
        xmlns.oracle.com/webcenter/webcenterapp))/webcenter:custom-attributes"
        position="last">
             <attribute name=
                  "oracle.webcenter.spaces.query.DIRECT_JPQL_CLAUSE_SUPPORTED"
                  xmlns="http://xmlns.oracle.com/webcenter/webcenterapp">
                       <description/>
                       <type>java.lang.String</type>
                       <value>true</value>
                       <visible/>
             </attribute>
   </mds:insert>
   ```

3. Save and close `webcenter-config.xml.xml`.
4. Import the updated `webcenter-config.xml.xml` file to WebCenter Portal.

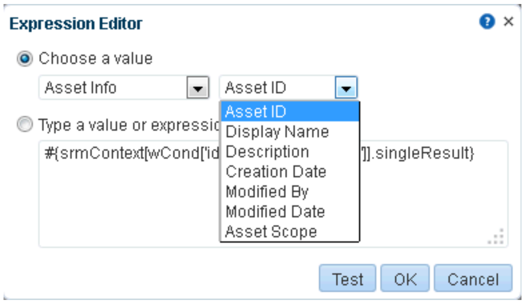
   For example:

   ```
   importMetadata(application='webcenter', server='WC_Spaces',
   fromLocation='/tmp/mydata',
   docs='/oracle/webcenter/webcenterapp/metadata/mdssys/cust/site/webcenter/webcen
   ter-config.xml.xml')
   ```

G.14.2 Seeded Expressions in the Expression Editor

In the Expression Editor, when you select the option **Choose a value** you can populate the text box in the dialog with a seeded EL expression. First, select an expression category, and then select the type of information you want the expression to return. Your selection's associated EL appears in the text box at the bottom of the dialog (Figure G–7).

Figure G–7 Options Under Choose a value in the Expression Editor



#{srmContext[wCond['id ...]].singleResult}

This section is broken into subsections for each category. Each subsection lists and describes the ELs associated with that category.

This section includes the following subsections:

- Section G.14.2.1, "Application Info Seeded ELs"
- Section G.14.2.2, "Asset Info Seeded ELs"
- Section G.14.2.3, "Page Info Seeded ELs"
- Section G.14.2.4, "Page Parameter Seeded ELs"
- Section G.14.2.5, "Portal Info Seeded ELs"
- Section G.14.2.6, "Portal Page Info Seeded Paths"
- Section G.14.2.7, "System Seeded ELs"
- Section G.14.2.8, "User Info Seeded ELs"
- Section G.14.2.9, "WebCenter Events Seeded ELs"

G.14.2.1 Application Info Seeded ELs

Application Info seeded EL expressions return values related to WebCenter Portal. For example, the expression `#{WCAppContext.application.applicationConfig.title}`, returns the application name specified on the General page in WebCenter Portal administration.

> **See Also:** For additional EL expressions related to the application, see Section G.14.3, "EL Expressions Relevant to WebCenter Portal Information."

Table G–13 lists the seeded EL expressions available under the category Application Info and provides an example of the types of values they return.

Table G–13 Seeded EL Expressions Under Application Info

Option	Expression	Example of Returned Value
Current Scope	`#{serviceCtx.scope}`	`Scope[name=standards, guid=sa78185d3_9d65_49ab_ac1d_4809380d0b30]`
Current Page Template Scope	`#{WCAppContext.currentScope}`	`Scope[name=standards, guid=sa78185d3_9d65_49ab_ac1d_4809380d0b30]`
Previously Set Page Template	`#{WCAppContext.previouslySetPageTemplate}`	`Fusion Side Navigation`

Table G–13 (Cont.) Seeded EL Expressions Under Application Info

Option	Expression	Example of Returned Value
Application	`#{WCAppContext.application}`	`oracle.webcenter.webcenterapp.internal.view.shell.WCApplication`
Application URL	`#{WCAppContext.applicationURL}`	`http://host:port/webcenter`
Current WebCenter Portal URI	`#{WCAppContext.currentWebCenterURI}`	`/oracle/webcenter/page/scopedMD/GUID/businessRolePages/Page3.jspx?wc.contextURL=%2Fspaces`
Application Config	`#{WCAppContext.application.applicationConfig}`	`oracle.webcenter.webcenterapp.beans.WebCenterMetadataImpl@123db9d`
Application Config Title	`#{WCAppContext.application.applicationConfig.title}`	`WebCenter`
Application Config Logo	`#{WCAppContext.application.applicationConfig.logo}`	`/oracle/webcenter/webcenterapp/metadata/images/logo.gif`
Application Config HelpPage	`#{WCAppContext.application.applicationConfig.helpPage}`	`/webcenterhelp/spaces?topic=welcome_main`
Application Config CopyrightMessage CustomValue	`#{WCAppContext.application.applicationConfig.copyrightMessage.customValue}`	`http://www.example.com/html/copyright.html`
Application Config Privacy Policy URL	`#{WCAppContext.application.applicationConfig.privacyPolicyUrl}`	`http://www.example.com/html/privacy.html`
Application Config Skin	`#{WCAppContext.application.applicationConfig.skin}`	`webcenterfx`

For example, consider that you want a link to appear in all pages of a portal that lets you copy and share the current page's URL. You can add an HTML Markup item to a page template, and add the EL that returns page URL.

These steps demonstrate how to use ELs to retrieve page URLs:

1. Open a custom page template in Edit mode.
2. In Design view, in the resource catalog, click **Web Development**.
3. Click **Add** next to **HTML Markup**.
4. Click the Edit icon for the newly added HTML Markup.
5. In the Component Properties dialog, on the **Display Options** tab, in the **Value** field, enter the following EL:

```
<a href="javascript:{
    var returnvalue = prompt( '#{pageDocBean.title}
URL','#{WCAppContext.applicationURL}/faces#{WCAppContext.currentWebCenterURI}')
;
}">Share Link</a>
```

6. Click **OK**.
7. Apply the page template to your portal.

G.14.2.2 Asset Info Seeded ELs

Asset Info seeded EL expressions return values related to WebCenter Portal resources, such as templates, styles, resource catalogs, and so on. For example, the expression `#{srmContext.id['`*`ResourceID`*`'].singleResult}`, returns the asset with the specified GUID.

> **See Also:** For additional asset-related EL expressions, see Section G.14.4, "EL Expressions Relevant to Assets."

Table G–14 lists the seeded EL expressions available under the category Asset Info and provides an example of the types of values each returns.

Table G–14 Seeded EL Expressions Under Asset Info

Option	Expression	Example of Returned Value
Asset ID	`#{srmContext[wCond['id']['like']['ResourceID']].singleResult}`	`id:gsr3396194a_3a72_44d6_90b4_57fd6efe4ff7 resourceScope:Scope[name=defaultScope, guid=s8bba98ff_4cbb_40b8_beee_296c916a23ed] resourceType:siteTemplate serviceId:oracle.webcenter.siteresources.sitetemplate category: displayName:Fusion Side Navigation displayNameKey:SITE_TEMPLATE_FUS_SIDE_STRETCH_NAV_DN description:Stretching Page Layout with Side Navigation. Use Fusion FX Skin. descriptionKey:SITE_TEMPLATE_FUS_SIDE_STRETCH_NAV_DESC contentDirectory:/oracle/webcenter/siteresources/shared metadataFile: jspx:/oracle/webcenter/webcenterapp/view/templates/WCSiteTemplateSideNavStretch.jspx pageDef:/oracle/webcenter/webcenterapp/bindings/pageDefs/oracle_webcenter_webcenterapp_view_templates_WCSiteTemplateSideNavStretchPageDef.xml iconURI: excludeFrom: usesCustomSecurity:false visible:TRUE seeded:true createdBy:system createdDate:Fri Jul 02 05:44:19 PDT 2010 modifiedBy:system resourceBundle:oracle.webcenter.sitetemplate.view.resource.SiteTemplateBundle modifiedDate:Fri Jul 02 05:44:19 PDT 2010 logoUrl:/adf/webcenter/srm_dflt_logo_qualifier.png attributes:[]`
Display Name	`#{srmContext[wCond['displayName']['like']['DisplayName']].singleResult}`	See Asset ID for an example of a returned value.
Description	`#{srmContext[wCond['description']['like']['Description']].singleResult}`	See Asset ID for an example of a returned value.
Creation Date	`#{srmContext[wCond['createdDate']['like']['CreationDate']].singleResult}`	See Asset ID for an example of a returned value.

Table G–14 (Cont.) Seeded EL Expressions Under Asset Info

Option	Expression	Example of Returned Value
Modified By	`#{srmContext[wCond['modifiedBy']['like']['UserName']].singleResult}`	See Asset ID for an example of a returned value.
Modified Date	`#{srmContext[wCond['modifiedDate']['like']['ModifiedDate']].singleResult}`	See Asset ID for an example of a returned value.
Asset Scope	`#{srmContext[wCond['resourceScope']['like']['ResourceScope']].singleResult}`	See Asset ID for an example of a returned value.

G.14.2.3 Page Info Seeded ELs

Page Info seeded EL expressions return values related to WebCenter Portal pages. For example, the expression `#{pageDocBean.createdBy}`, returns the user name of the person who created the current page.

Table G–15 lists the seeded EL expressions available under the category Page Info and provides an example of the types of values each returns.

Table G–15 Seeded EL Expressions Under Page Info

Option	Expression	Example of Returned Value
Title	`#{pageDocBean.title}`	`Welcome Page (BRP)`
Created By	`#{pageDocBean.createdBy}`	j.doe
Create Date String	`#{pageDocBean.createDateString}`	`2010-11-17T13:27:52`
Last Updated By	`#{pageDocBean.lastUpdatedBy}`	`j.smith`
Last Update Date String	`#{pageDocBean.lastUpdateDateString}`	`2010-11-17T13:27:52`
Page Path	`#{pageDocBean.pagePath}`	`/oracle/webcenter/page/scopedMD/GUID/businessRolePages/Page3.jspx`
Name	`#{pageDocBean.name}`	`Page3.jspx`
UI CSS Style	`#{pageDocBean.UICSSStyle}`	`WCSchemeCustom`
UI Scheme BG Image	`#{pageDocBean.UISchemeBGImage}`	`#{facesContext.externalContext.requestContextPath}/adf/oracle/webcenter/page/images/clouds.png`
UI Scheme BG Color String	`#{pageDocBean.UISchemeBGColorString}`	null
Page Permission	`#{pageDocBean.pagePermission}`	`oracle.webcenter.page.model.security.CustomPagePermission`
Page Security Target	`#{pageDocBean.pageSecurityTarget}`	`oracle_webcenter_page_scopedMD_sa78185d3_9d65_49ab_ac1d_4809380d0b30_COIHomePageDef`

G.14.2.4 Page Parameter Seeded ELs

Page Parameter seeded EL expressions return values related to WebCenter Portal page parameters. The editor lists all parameters that are defined for the current page. If no parameters are defined, the Page Parameter category is not available.

For example, the seeded page style **Three Column** provides five seeded page parameters (see Table G–16). The `width` parameters describe the percentage of total width allotted to each column. The `show` parameters specify whether a page header and footer are rendered. Of the seeded page styles, **Blank**, **Home Page**, **Left Narrow**, and **Right Narrow** all provide the same seeded page parameters (see Table G–16). Additionally, any page may have its own custom page parameters.

Whether seeded or custom, available page parameters are exposed in the Expression Editor under the Page Parameter category.

> **See Also:** For more information about creating and using page parameters, see the "Wiring Components and Page Parameters" section in *Building Portals with Oracle WebCenter Portal*.

Table G–16 lists the EL expressions available under the Page Parameter category for pages based on the styles Three Column, Blank, Home Page, Left Narrow, and Right Narrow. It provides an example of the types of values each returns.

Table G–16 Seeded EL Expressions Under Page Parameter

Option	Expression	Example of Returned Value
leftWidth	`#{bindings.leftWidth}`	`25%`
centerWidth	`#{bindings.centerWidth}`	`50%`
rightWidth	`#{bindings.rightWidth}`	`25%`
showHeader	`#{bindings.showHeader}`	`false`
showFooter	`#{bindings.showFooter}`	`false`

G.14.2.5 Portal Info Seeded ELs

Portal Info seeded EL expressions return values related to portals (other than the Home portal). For example, the expression `#{spaceContext.space['`*`portalName`*`'].children}`, returns a list of the subportals under the named parent portal.

> **See Also:** For additional portal-related EL expressions, see Section G.14.5, "EL Expressions Relevant to Specific Portals."

Table G–17 lists the seeded EL expressions available under the category Portal Info and provides an example of the types of values each returns.

> **Note:** Use the EL expressions listed in Table G–17 only in the context of portals other than the Home portal.

Table G–17 Seeded EL Expressions Under Portal Info

Option	Expression	Example of Returned Value
NamedPortal	`#{spaceContext.space['`*`portalName`*`']}`	`oracle.webcenter.spaces.internal.model.SpaceImpl@15fc839`
CurrentPortal	`#{spaceContext.currentSpace}`	`oracle.webcenter.spaces.internal.model.SpaceImpl@d5e197`
CurrentPortal Name	`#{spaceContext.currentSpaceName}`	`standards`
NamedPortal Metadata Path	`#{spaceContext.space['`*`portalName`*`'].metadataPath}`	`/oracle/webcenter/space/metadata/spaces/portalName/space.xml`
CurrentPortal Metadata Path	`#{spaceContext.currentSpace.metadataPath}`	`/oracle/webcenter/space/metadata/spaces/standards/space.xml`

Table G–17 (Cont.) Seeded EL Expressions Under Portal Info

Option	Expression	Example of Returned Value
NamedPortal Metadata	`#{spaceContext.space['`*`portalName`*`'].metadata}`	`oracle.webcenter.spaces.beans.SpaceMetadataImpl@1d7320a`
CurrentPortal Metadata	`#{spaceContext.currentSpace.metadata}`	`oracle.webcenter.spaces.beans.SpaceMetadataImpl@1096c64`
NamedPortal Metadata DisplayName	`#{spaceContext.space['`*`portalName`*`'].metadata.displayName}`	`Standards`
CurrentPortal Metadata DisplayName	`#{spaceContext.currentSpace.GSMetadata.displayName}`	`Sales`
NamedPortal Metadata Icon	`#{WCPrepareImageURL[spaceContext.space['portalName'].metadata.icon]['']}`	`/webcenter-spaces-resources/oracle/webcenter/space/metadata/spacetemplate/PortalSite/images/portal_icon.png`
CurrentPortal Metadata Icon	`#{WCPrepareImageURL[spaceContext.currentSpace.metadata.icon]['']}`	`/webcenter-spaces-resources/oracle/webcenter/space/metadata/spaces/Test_Space/images/wc_prj_icon.png`
NamedPortal Metadata Description	`#{spaceContext.space['`*`portalName`*`'].metadata.description}`	`Central point for all standards, templates, and stylesheets for company collateral`
CurrentPortal Metadata Description	`#{spaceContext.currentSpace.GSMetadata.description}`	`Sales Force Team Site`
NamedPortal Metadata CreationDate	`#{spaceContext.space['`*`portalName`*`'].metadata.creationDate}`	`java.util.GregorianCalendar[time=1290103432242,areFieldsSet=true,areAllFieldsSet=false,lenient=false,zone=java.util.SimpleTimeZone[id=,offset=-28800000,dstSavings=3600000,useDaylight=false,startYear=0, startMode=0,startMonth=0,startDay=0,startDayOfWeek=0,startTime=0,startTimeMode=0,endMode=0,endMonth=0,endDay=0,endDayOfWeek=0,endTime=0,endTimeMode=0],firstDayOfWeek=1,minimalDaysInFirstWeek=1,ERA=1, YEAR=2010,MONTH=10,WEEK_OF_YEAR=?,WEEK_OF_MONTH=?,DAY_OF_MONTH=18,DAY_OF_YEAR=?,DAY_OF_WEEK=?,DAY_OF_WEEK_IN_MONTH=?,AM_PM=0,HOUR=10,HOUR_OF_DAY=10,MINUTE=3,SECOND=52,MILLISECOND=242,ZONE_OFFSET=?,DST_OFFSET=?]`

Table G–17 (Cont.) Seeded EL Expressions Under Portal Info

Option	Expression	Example of Returned Value
CurrentPortal Metadata CreationDate	#{spaceContext.currentSpace.metadata.creationDate}	`java.util.GregorianCalendar[time=1290103432242,areFieldsSet=true,areAllFieldsSet=false,lenient=false,zone=java.util.SimpleTimeZone[id=,offset=-28800000,dstSavings=3600000,useDaylight=false,startYear=0, startMode=0,startMonth=0,startDay=0,startDayOfWeek=0,startTime=0,startTimeMode=0,endMode=0,endMonth=0,endDay=0,endDayOfWeek=0,endTime=0,endTimeMode=0],firstDayOfWeek=1,minimalDaysInFirstWeek=1,ERA=1,YEAR=2010,MONTH=10, WEEK_OF_YEAR=?,WEEK_OF_MONTH=?,DAY_OF_MONTH=18,DAY_OF_YEAR=?,DAY_OF_WEEK=?,DAY_OF_WEEK_IN_MONTH=?,AM_PM=0,HOUR=10,HOUR_OF_DAY=10,MINUTE=3,SECOND=52,MILLISECOND=242,ZONE_OFFSET=?,DST_OFFSET=?]`
NamedPortal Metadata CreatedBy	`#{spaceContext.space['`*`portalName`*`'].metadata.createdBy}`	`j.doe`
NamedPortal Metadata Keywords	`#{spaceContext.space['`*`portalName`*`'].metadata.keywords}`	`standards templates style sheets collateral`
CurrentPortal Metadata Keywords	`#{spaceContext.currentSpace.metadata.keywords}`	`sales salesReports salesNews salesTeam`
NamedPortal Metadata Offline	`#{spaceContext.space['`*`portalName`*`'].metadata.offline}`	`false` or `true`, depending on whether the named portal is offline
CurrentPortal Metadata Offline	`#{spaceContext.currentSpace.metadata.offline}`	`false` or `true`, depending on whether the current portal is offline
NamedPortal Metadata Closed	`#{spaceContext.space['`*`portalName`*`'].metadata.offline}`	`false` or `true`, depending on whether the named portal is closed
CurrentPortal Metadata Closed	`#{spaceContext.currentSpace.metadata.closed}`	`false` or `true`, depending on whether the current portal is closed
NamedPortal Metadata SelfRegistration	`#{spaceContext.space['`*`portalName`*`'].metadata.selfRegistration}`	`false` or `true`, depending on whether self registration is enabled for the named portal
CurrentPortal Metadata SelfRegistration	`#{spaceContext.currentSpace.metadata.selfRegistration}`	`false` or `true`, depending on whether self registration is enabled for the current portal
NamedPortal Metadata Discoverable	`#{spaceContext.space['`*`portalName`*`'].metadata.discoverable}`	`false` or `true`, depending on whether the named portal is discoverable
CurrentPortal Metadata Discoverable	`#{spaceContext.currentSpace.metadata.discoverable}`	`false` or `true`, depending on whether the current portal is discoverable
NamedPortal Metadata PublishRSS	`#{spaceContext.space['`*`portalName`*`'].metadata.publishRSS}`	`false` or `true`, depending on whether the named portal can be published in an RSS reader
CurrentPortal Metadata PublishRSS	`#{spaceContext.currentSpace.metadata.publishRSS}`	`false` or `true`, depending on whether the current portal can be published in an RSS reader
NamedPortal Distribution List	`#{spaceContext.space['`*`portalName`*`'].distributionList}`	`standardsGroup@myCompany.com`

Table G–17 (Cont.) Seeded EL Expressions Under Portal Info

Option	Expression	Example of Returned Value
CurrentPortal Distribution List	`#{spaceContext.currentSpace.distributionList}`	`salesTeam@myCompany.com`
NamedPortal Metadata CustomAttributes	`#{spaceContext.space['`*`portalName`*`'].metadata.customAttributes['`*`attributeName`*`']}`	Returns the value provided for the named custom attribute **Note:** If you use this EL to provide a value for a field in WebCenter Portal Administration, clicking the **Test** button may return a blank value. However, the value will resolve correctly in the running portal.
CurrentPortal Metadata CustomAttributes	`#{spaceContext.currentSpace.metadata.customAttributes['`*`attributeName`*`']}`	Returns the value provided for the named custom attribute **Note:** If you use this EL to provide a value for a field in WebCenter Portal Administration, clicking the **Test** button may return a blank value. However, the value will resolve correctly in the running portal.
CurrentPortal Metadata Logo	`#{WCPrepareImageURL[spaceContext.currentSpace.metadata.logo]['']}`	`/webcenter-spaces-resources/oracle/webcenter/space/metadata/spacetemplate/PortalSite/images/portal_logo.png`
CurrentPortal Role - Moderator	`#{WCSecurityContext.userInScopedRole['Moderator']}`	`false` or `true`, depending whether any users in the current scope are assigned the role `Moderator`
CurrentPortal Role - Participant	`#{WCSecurityContext.userInScopedRole['Participant']}`	`false` or `true`, depending whether any users in the current scope are assigned the role `Participant`
CurrentPortal Role - Viewer	`#{WCSecurityContext.userInScopedRole['Viewer']}`	`false` or `true`, depending whether any users in the current scope are assigned the role `Viewer`
CurrentPortal Role - Custom	`#{WCSecurityContext.userInScopedRole['`*`CustomRole`*`']}`	`false` or `true`, depending on if any users in the current scope are assigned the named custom role
NamedPortal Children	`#{spaceContext.space['`*`portalName`*`'].children}`	`[oracle.webcenter.spaces.internal.model.SpaceImpl@5705f4, oracle.webcenter.spaces.internal.model.SpaceImpl@147d658]` **Note:** The braces ([]) denote a set.
CurrentPortal Children	`#{spaceContext.currentSpace.children}`	`[oracle.webcenter.spaces.internal.model.SpaceImpl@5705f4, oracle.webcenter.spaces.internal.model.SpaceImpl@147d658]` **Note:** The braces ([]) denote a set.
NamedPortal Parent	`#{spaceContext.space['`*`portalName`*`'].parent}`	`oracle.webcenter.spaces.internal.model.SpaceImpl@15fc839`
CurrentPortal Parent	`#{spaceContext.currentSpace.parent}`	`oracle.webcenter.spaces.internal.model.SpaceImpl@15fc839`
NamedPortal Security Parent	`#{spaceContext.space['`*`portalName`*`'].securityParent}`	`oracle.webcenter.spaces.internal.model.SpaceImpl@1392793`

Table G–17 (Cont.) Seeded EL Expressions Under Portal Info

Option	Expression	Example of Returned Value
CurrentPortal Security Parent	#{spaceContext.currentSpace.securityParent}	oracle.webcenter.spaces.internal.model.SpaceImpl@1392793
All visible root level spaces	#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE,DISCOVERABLE,PUBLIC_ACCESSIBLE,ALLUSER_ACCESSIBLE,USER_JOINED,USER_MODERATED'].shape['ROOT_LEVEL']}	oracle.webcenter.spaces.query.SpacesQueryParameters@ae34c8
All children and descendent portals for specified Parent Portal GUID	#{spaceContext.spacesQuery.parentSpaceGuid['*portalGuid*'].shape['RECURSIVE_FLATTENED']}	oracle.webcenter.spaces.query.SpacesQueryParameters@4da22f
Immediate Sub Portals for specified Parent Portal name	#{spaceContext.spacesQuery.parentSpaceName['*portalGuid*'].shape['ROOT_LEVEL']}	oracle.webcenter.spaces.query.SpacesQueryParameters@1089971
List of Portals matching given Portal Names	#{spaceContext.spacesQuery.containingNames['*portal1, portal2,portal3*']}	oracle.webcenter.spaces.query.SpacesQueryParameters@68e467
List of Portals matching given Portal GUID	#{spaceContext.spacesQuery.containingGuids['*portalGuid1, portalGuid2*']}	oracle.webcenter.spaces.query.SpacesQueryParameters@1c56009
List of Portals sorted based on criteria	#{spaceContext.spacesQuery.unionOf.ALL_QUERIABLE.sort['sp.lastUpdateDate']['desc']}	oracle.webcenter.spaces.query.SpacesQueryParameters@6c3def
List of Portals based on search pattern	#{spaceContext.spacesQuery.unionOf.ALL_QUERIABLE.search['*searchKeyword*']}	oracle.webcenter.spaces.query.SpacesQueryParameters@19b2cf3
List of Portals with limited page size	#{spaceContext.spacesQuery.unionOf.USER_JOINED.itemsPerPage[*n*].pageNumber[*n*]}	oracle.webcenter.spaces.query.SpacesQueryParameters@4f8818
List of portals matching the where clause	#{spaceContext.spacesQuery.unionOf.USER_JOINED.where[wCond['sp.createdBy']['=']['userName']]}	oracle.webcenter.spaces.query.SpacesQueryParameters@1ba816d

G.14.2.6 Portal Page Info Seeded Paths

Rather than EL expressions, the selections under Portal Page Info are directory paths to different application pages. Use them, for example, to provide navigation information to a specified page.

Table G–18 lists the seeded directory paths available under the category Portal Page Info and provides an example of the types of values each returns. The number of values in the dropdown list depends on the template used and the pages created by users.

Table G–18 Seeded Paths Under Portal Page Info

Option	Path	Destination
PortalSiteHome.jspx	`/faces/oracle/webcenter/page/scopedMD/se2dff4fb_202a_4f4c_b56d_c7cf59ad1c04/PortalSiteHome.jspx`	Path to the Home page of the current portal
GroupSpaceDocLibMainView.jspx	`/faces/oracle/webcenter/page/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/businessRolePages/GroupSpaceDocLibMainView.jspx`	Path to the Documents page in the current portal
ForumMainView.jspx	`/faces/oracle/webcenter/page/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/businessRolePages/ForumMainView.jspx`	Path to Discussions page in the current portal
AnnouncementsMainView.jspx	`/faces/oracle/webcenter/page/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/businessRolePages/AnnouncementsMainView.jspx`	Path to Announcements page in current portal
ListsMainView.jspx	`/faces/oracle/webcenter/page/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/businessRolePages/ListsMainView.jspx`	Path to Lists page in current portal
EventsMainView.jspx	`/faces/oracle/webcenter/page/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/businessRolePages/EventsMainView.jspx`	Path to Events page in current portal
GroupSpaceActivityStreamMainView.jspx	`/faces/oracle/webcenter/page/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/businessRolePages/GroupSpaceActivityStreamMainView.jspx`	Path to Activity Stream page in current portal

G.14.2.7 System Seeded ELs

System seeded EL expressions return values related to system settings, such as the user name of the current user or the current user's specified locale. For example, the expression `#{securityContext.userName}`, returns the name of the currently logged in user. For example, if user j.doe is viewing a page where this expression is used, the returned value in j.doe's view is `j.doe`. If user j.smith is looking at the same page, the value returned in j.smith's view is `j.smith`.

> **See Also:** For additional utilitarian EL expressions, see Section G.14.8, "Utilitarian EL Expressions."

Table G–19 lists the seeded EL expressions available under the category System and provides an example of the types of values each returns.

Table G–19 Seeded EL Expressions Under System

Option	Expression	Example of Returned Value
User	`#{securityContext.userName}`	The current user's user name
Locale	`#{facesContext.externalContext.requestLocale}`	The current user's specified locale This may be taken from application or portal-level settings or user Preferences, whichever is taking precedence. For example: `en_US`

G.14.2.8 User Info Seeded ELs

User Info seeded EL expressions return values related to a given user's Profile. For example, the expression `#{webCenterProfile[securityContext.userName].description}`, returns the content of the About Me attribute of the current user's Profile.

See Also: For additional user-related expressions, see Section G.10, "ELs Related to People Connections."

Table G–20 lists the seeded EL expressions available under the category User Info and provides an example of the types of values each returns.

Table G–20 Seeded EL Expressions Under User Info

Option	Expression	Example of Returned Value
About Me	`#{webCenterProfile[securityContext.userName].description}`	Returns the content of the About Me attribute of the current user's Profile
Username	`#{webCenterProfile[securityContext.userName].userName}`	The user name specified in the current user's Profile Compare this with the current user's display name.
First Name	`#{webCenterProfile[securityContext.userName].firstName}`	The current user's first name
Middle Name	`#{webCenterProfile[securityContext.userName].middleName}`	The current user's middle name
Last Name	`#{webCenterProfile[securityContext.userName].lastName}`	The current user's last name
Initials used	`#{webCenterProfile[securityContext.userName].initials}`	The current user's initials
Display Name	`#{webCenterProfile[securityContext.userName].displayName}`	The current user's display name Compare this with the current user's user name.
Email	`#{webCenterProfile[securityContext.userName].businessEmail}`	The current user's business email address
Department	`#{webCenterProfile[securityContext.userName].department}`	The current user's department
Job Title/Designation	`#{webCenterProfile[securityContext.userName].title}`	The current user's job title or designation

Table G–20 (Cont.) Seeded EL Expressions Under User Info

Option	Expression	Example of Returned Value
Manager	`#{webCenterProfile[securityContext.userName].managerDisplayName}`	The current user's manager's display name
Time zone	`#{webCenterProfile[securityContext.userName].timeZone}`	The time zone associated with the current user
Employee type	`#{webCenterProfile[securityContext.userName].employeeType}`	The current user's employee type
Employee Number	`#{webCenterProfile[securityContext.userName].employeeNumber}`	The current user's employee number
Preferred Language Code	`#{webCenterProfile[securityContext.userName].preferredLanguage}`	The current user's preferred language
Organization	`#{webCenterProfile[securityContext.userName].organization}`	The company organization to which the current user belongs
Organizational Unit	`#{webCenterProfile[securityContext.userName].organizationalUnit}`	The unit of the company organization to which the current user belongs
Expertise	`#{webCenterProfile[securityContext.userName].expertise}`	The current user's expertise, for example, `Application, system, and database administration`
Business Fax	`#{webCenterProfile[securityContext.userName].businessFax}`	The current user's business fax number
Business Mobile Number	`#{webCenterProfile[securityContext.userName].businessMobile}`	The current user's business mobile or cell phone number
Business Phone	`#{webCenterProfile[securityContext.userName].businessPhone}`	The current user's business phone number
Business Pager Number	`#{webCenterProfile[securityContext.userName].businessPager}`	The current user's business pager number
Business Street	`#{webCenterProfile[securityContext.userName].businessStreet}`	The street address of the current user's business office
Business City	`#{webCenterProfile[securityContext.userName].businessCity}`	The city where the current user's business office is located
Business State	`#{webCenterProfile[securityContext.userName].businessState}`	The state where the current user's business office is located
Business PO Box	`#{webCenterProfile[securityContext.userName].businessPOBox}`	The current user's business Post Office Box number
Business Postal Code	`#{webCenterProfile[securityContext.userName].businessPostalCode}`	The postal or ZIP code of the current user's business office
Business Country	`#{webCenterProfile[securityContext.userName].businessCountry}`	The country where the current user's business office is located
Home Address	`#{webCenterProfile[securityContext.userName].homeAddress}`	The current user's home address
Home phone	`#{webCenterProfile[securityContext.userName].homePhone}`	The current user's home phone number
Date of Birth	`#{webCenterProfile[securityContext.userName].dateofBirth}`	The current user's date of birth
Maiden Name	`#{webCenterProfile[securityContext.userName].maidenName}`	The current user's maiden name

Table G–20 (Cont.) Seeded EL Expressions Under User Info

Option	Expression	Example of Returned Value
Date of hire	`#{webCenterProfile[securityContext.userName].dateofHire}`	The date the current user was hired by the company
Name Suffix	`#{webCenterProfile[securityContext.userName].nameSuffix}`	Titles or credentials appended to the current user's name, for example, `MD`, `Esq`, and so on
Wireless Account Number	`#{webCenterProfile[securityContext.userName].wirelessAcctNumber}`	The account number for the current user's wireless internet account

G.14.2.9 WebCenter Events Seeded ELs

WebCenter Events seeded EL expressions return values related to document-related events, such as the name of the selected document, the document's creator, the date the document was last modified, and so on. For example, the expression `#{wcEventContext.events.WebCenterResourceSelected.name}`, returns the name of the currently selected document.

Table G–21 lists the seeded EL expressions available under the category WebCenter Events and provides an example of the types of values each returns.

Table G–21 Seeded EL Expressions Under WebCenter Events

Option	Expression	Example of Returned Value
Selected User Name	`#{wcEventContext.events.WebCenterUserSelected.UserName}`	The user name of the currently selected user
Selected Document Name	`#{wcEventContext.events.WebCenterResourceSelected.name}`	The name of the currently selected document
Selected Document Creator	`#{wcEventContext.events.WebCenterResourceSelected.createdBy}`	The name of the user who created the currently selected document
Selected Document Last Modified By	`#{wcEventContext.events.WebCenterResourceSelected.lastModifiedBy}`	The date the selected document was last modified

G.14.3 EL Expressions Relevant to WebCenter Portal Information

Table G–22 lists EL expressions relevant to WebCenter Portal information and describes the types of functionality it provides.

Table G–22 EL Expressions Relevant to WebCenter Portal Information

Expression	Function
`#{WCAppContext}`	An `oracle.webcenter.webcenterapp.context.WCApplicationContext` object that provides an access point in the current web request for all WebCenter Portal-related information.
`#{WCAppContext.currentWebCenterURI}`	Returns a URL representing the current web request with bookmarkable WebCenter Portal URL parameters of the request appended to the end (parameters are not necessarily in a fixed order). Example: `http://www.example.com/webcenter/faces/oracle/webcenter/page/scopedMD/someguid/SomePage.jspx?wc.contextURL=/spaces/somename&wc.pageScope=1234`
`#{WCAppContext.application.applicationConfig}`	An `oracle.webcenter.webcenterapp.beans.WebCenterType` bean with a payload of metadata from WebCenter Portal.
`#{WCAppContext.application.applicationConfig.title}`	Returns the display name of the current WebCenter Portal application (as configured through WebCenter Portal Administration settings). Out of the box, this returns *WebCenter Portal*.
`#{WCAppContext.application.applicationConfig.logo}`	If an application logo was uploaded through WebCenter Portal Administration settings, this expression returns the URL to the application logo image. Out of the box, this returns *null*.
`#{WCAppContext.application.applicationConfig.helpPage}`	Returns the URL to the Help application used for WebCenter Portal (as configured through WebCenter Portal Administration settings). Out of the box, this returns */webcenterhelp/spaces*.
`#{WCAppContext.application.applicationConfig.copyrightMessage.customValue}`	If a copyright message was configured through WebCenter Portal Administration settings, this expression returns the application copyright message. Out of the box, this returns `null`.

Table G–22 (Cont.) EL Expressions Relevant to WebCenter Portal Information

Expression	Function
`#{WCAppContext.application.applicationConfig.privacyPolicyUrl}`	Returns the URL to the document that contains the application's privacy policy (as configured through WebCenter Portal Administration settings). Out of the box, this returns `http://www.oracle.com/html/privacy.html`
`#{WCAppContext.application.applicationConfig.skin}`	Returns the name of the default ADF Faces skin family to use for rendering pages in the application (as configured through WebCenter Portal Administration settings). This expression represents only the application-level setting that may not necessarily be used in all web requests. For example, you cannot use it successfully if a user has chosen to override the skin through application Preferences.
`#{requestContext.skinFamily}`	Returns the name of the ADF Faces skin family being used for the current web request, depending on factors such as what has been configured at the application level, the current user's preference setting, and so on. Returns the same value as `#{adfFacesContext.skinFamily}`. This EL can be used both in portals built using WebCenter Portal and Portal Framework applications built with Oracle JDeveloper.

G.14.4 EL Expressions Relevant to Assets

Use the expressions in this section to query for assets. Querying for an asset through an EL expression is similar to querying for it through an API call. That is, you must set query parameters in the format `['`*`property`*`']['like']['`*`value`*`']`, where *`property`* is the name of the property, for example, `id`, `resourceScope`, and so on, and *`value`* is the search value for the attribute.

A query can result in single or multiple results. The query designer must decide what is wanted. The query designer determines whether to return one or multiple results by encountering one of the following values in the expression:

- `singleResult`—Returns a single asset. When no matching asset is found, null is returned.
- `resultList`—Returns a list of assets. When no matching assets are found, an empty list is returned.

> **Note:** Occurrences of `singleResult` or `resultList` in the expression are used internally as the query end point, and, after this, the query is executed immediately. Anything set after the end point can result in unexpected behavior.

The following example returns the first page template asset found with a display name that contains `myPage`:

```
#{srmContext[wCond['resourceType']['like']['siteTemplate']]['and'][wCond['displayN
ame']['like']['myPage']].singleResult}
```

The following example returns a list of page template assets residing in the directory `resourceDir`, with a description that contains `sampleDesc`:

```
#{srmContext[wCond['resourceType']['like']['siteTemplate']]['and'][wCond['descript
ion']['like']['sampleDesc']]['and'][wCond['contentDirectory']['like']['resourceDir
'].resultList}
```

A property of this class includes any attribute of this class. Example properties include: `Id`, `DisplayName`, `iconURI`, `contentDirectory`, and so on.

The property value can be an explicit value or an EL expression that returns that type of value. For example, the following two queries return the same result:

```
#{srmContext[wCond['id']['like']['resourceId']].singleResult}

#{srmContext[wCond['id']['like']['spacesContext.currentSpace.uiMetadata.siteTempla
teId']].singleResult}
```

You can use any property of this class in an EL-based query in the format *`property`*`['`*`value`*`']` and in any order. For example, the following two queries return the same result:

```
#{srmContext[wCond['resourceScope']['like']['scopeName']]['and'][wCond['id]['like'
]['resourceId']].singleResult}

#{srmContext[wCond['id']['like']['resourceId']]['and'][wCond['resourceScope']['lik
e']['scopeName']].singleResult}
```

Table G–23 lists EL expressions relevant to assets and describes the types of functionality each provides.

Table G–23 ELs Relevant to Assets

EL	Function
`#{srmContext[wCond['id']['like']['`*`resourceGUID`*`']]}`	Returns the asset with the specified ID
`#{srmContext[wCond['displayName']['like']['`*`resourceDisplayName`*`']]}`	Returns any assets with the specified display name
`#{srmContext[wCond['displayNameKey']['like']['`*`displayNameKey`*`']]}`	Returns any assets with the specified display name key
`#{srmContext[wCond['description']['like']['`*`resourceDescription`*`']].singleResult}`	Returns one result of an asset that contains the specified value in its description To get multiple results, use `resultList` in lieu of `singleResult`.
`#{srmContext[wCond['descriptionKey']['like']['`*`descriptionKey`*`']].singleResult}`	Returns one result of an asset with the specified description key The description key is the key in the `xsrt` file for the asset description. To get multiple results, use `resultList` in lieu of `singleResult`.
`#{srmContext[wCond['createdDate']['like']['`*`resourceCreationDate`*`']]}`	Returns any asset with the specified creation date
`#{srmContext[wCond['modifiedBy']['like']['`*`resourceLastModifiedBy`*`']]`	Returns any asset that was last modified by the user with the specified user name
`#{srmContext[wCond['modifiedDate']['like']['`*`resourceLastModifiedDate`*`']]}`	Returns any asset that was last modified by the specified date

Table G–23 (Cont.) ELs Relevant to Assets

EL	Function
`#{srmContext[wCond['resourceScope']['like']['`*`resourceScope`*`']]}`	Returns any asset that falls within the specified scope
`#{srmContext[wCond['category']['like']['`*`categoryName`*`']]}`	Returns any asset that falls within the specified category For example: `#{srmContext[wCond['category']['like']['siteTemplates']]}` List of possible category names includes: `siteTemplate`, `pageStyle`, `dataPresenter`, `contentPresenter`, `resourceCatalog`, `navigation`, `taskFlow`, `dataControl`, `taskFlowStyle`, and `skin`.
`#{srmContext[wCond['contentDirectory']['like']['`*`contentDirectory`*`']]}`	Returns any asset that is stored within the specified directory
`#{srmContext[wCond['metadataFile']['like']['`*`metadataFileLocation`*`']]}`	Returns asset metadata from the specified metadata file For example, the following expression returns asset metadata from the following file `/home/metadata/data.xml`: `#{srmContext[wCond['metadataFile']['like']['/home/metadat/data.xml']]}`
`#{srmContext[wCond['jspx']['like']['`*`jspxFileLocation`*`']]}`	Returns any `jspx` file in the specified location For example, the following expression returns the `page.jspx` file: `#{srmContext[wCond['jspx']['like']['/home/web/page.jspx']]}`
`#{srmContext[wCond['pageDef']['like']['`*`pageDefinition`*`']]}`	Returns any `jspx` file with the specified page definition
`#{srmContext[wCond['iconURI']['like']['`*`iconURI`*`']]}`	Returns the icon at the specified icon URI
`#{srmContext[wCond['excludeFrom']['like']['`*`excludeFromScopes`*`']]}`	In a larger expression, returns all specified resources except those available in the excluded scopes
`#{srmContext[wCond['usesCustomSecurity']['like']['`*`usesCustomSecurity`*`']]}`	In a larger expression, returns any asset the either does or does not use custom security Set *`usesCustomSecurity`* to `TRUE` or `FALSE`. For example: `#{srmContext[wCond['usesCustomSecurity']['like']['TRUE']]}`
`#{srmContext[wCond['seeded']['like']['`*`seeded`*`']]}`	In a larger expression, returns any asset that is or is not seeded, depending on the provided value Set *`seeded`* to `TRUE` or `FALSE`. For example: `#{srmContext[wCond['seeded']['like']['TRUE']]}`

Table G–23 (Cont.) ELs Relevant to Assets

EL	Function
`#{srmContext[wCond['visibleType']['like']['`*`visibleType`*`']]}`	In a larger expression, returns any asset that is of the specified type of visibility Set *`visibleType`* to `TRUE`, `FALSE`, or `NEVER` to indicate that the asset is never shown. For example, the following expression returns assets that are visible, that is, assets that are set to **Show**: `#{srmContext[wCond['visibleType']['like']['TRUE']]}`
`#{srmContext[wCond['visible']['like']['`*`visible`*`']]}`	In a larger expression, returns one or multiple assets with visibility set to either `TRUE` or `FALSE`
`#{srmContext[wCond['createdBy']['like']['`*`resourceCreator`*`']]}`	In a larger expression, returns any asset created by the specified user
`#{srmContext[wCond['resourceType']['like']['`*`resourceType`*`']]}`	In a larger expression, returns one or multiple assets of the specified type For example, the following expression searches for an asset of the type `SITE_TEMPLATE`: `#{srmContext[wCond['resourceType']['like']['SITE_TEMPLATE']]}` Note that all asset types are listed in *Java API Reference for Oracle WebCenter Portal*, in the `GenericSiteResourceTypes` class.
`#{srmContext[wCond['version']['like']['`*`version`*`']]}`	In a larger expression, returns one or multiple assets available in the application of the specified version
`#{srmContext[wCond['resourceScope']['like']['`*`scopeName`*`']]}`	In a larger expression, returns one or multiple assets available in the specified scope For example, the following expression searches for assets in the scope (in this instance, the portal) `MyPortal`: `#{srmContext[wCond['resourceScope']['like']['MyPortal']]}` To search in the default scope, that is, the application scope, use `defaultScope`.
`#{srmContext[wCond['searchType']['like']['`*`searchType`*`']]}`	In a larger expression, returns one or multiple assets that contain or equal the values set by other included expressions Set *`searchType`* to `CONTAINS` or `EQUALS`.

G.14.4.1 Example: Using EL Expressions for Assets

This section provides an example of using an EL expression to display a page template based on a user's role.

In this example, you will use an EL expression to enable a specific page template to be displayed for moderators so that only they can access the features or links available in that page template.

To display a page template based on a user role:

1. Go to the desired portal's administration settings.

2. In the **Assets** section, for **Page Template** click the Advanced Edit Options icon, and click **Expression Builder**.
3. In the **Type a value or expression**, enter the following expression:

   ```
   #{srmContext[wCond['resourceType']['like']['siteTemplate']][wCond['displayName'
   ]['like'][WCSecurityContext.userInScopedRole['Moderator'] ? 'Fusion Side
   Navigation' : 'WebCenter Spaces Top Navigation']].singleResult.id}
   ```

   Where:

   - `srmContext[wCond['resourceType']['like']['siteTemplate']]`

     Gets a list of all page templates in the scope

   - `[wCond['displayName']['like'][WCSecurityContext.userInScopedRole['Moderator'] ? 'Fusion Side Navigation' : 'WebCenter Portal Top Navigation']]`

     Reduces the list down to one depending on whether the current user is a moderator. If the user is a moderator, the Fusion Side Navigation page template is applied. For all other user roles, the portal is rendered using the WebCenter Portal Top Navigation page template.

   - `singleResult.id`

     Returns the GUID of the required entry.
4. Click **OK**.

G.14.5 EL Expressions Relevant to Specific Portals

Table G–24 lists EL expressions relevant to portals and describes the types of functionality each provides.

> **Note:** The portal *internal name* is the name specified for **Portal URL** on the **Overview** page of a portal's administration settings. The portal *display name* is the name specified for **Name**. Many of the EL expressions in Table G–24 call for the portal internal name.

Table G–24 EL Expressions Relevant to Specific Portals

Expression	Function
`#{spaceContext}`	An `oracle.webcenter.spaces.context.SpacesContext` object that provides an access point in the current web request for all portal-related information. The value of this expression is whatever is returned on invoking the java API: `SpacesContext.getCurrentInstance()`
`#{spaceContext.currentSpace}`	An `oracle.webcenter.spaces.Space` object that represents the portal associated with the current web request. If the current web request is in the Home portal context, it returns a value of `null`. The value of this expression is whatever is returned on invoking the Java API: `SpacesContext.getCurrentInstance().getCurrentSpace()`
`#{spaceContext.currentSpaceName}`	The name of the portal associated with the current web request. If the current web request is in the Home portal context, it returns a value of `null`. The value of this expression is whatever is returned on invoking the java API: `SpacesContext.getCurrentInstance().getCurrentSpace()`

`#{spaceContext.space['`*`portalName`*`']}`
`#{spaceContext.currentSpace}`
	An `oracle.webcenter.spaces.Space` object that represents the portal that is named *`spaceName`* or the current portal (`currentSpace`). For example, `#{spaceContext.space['FinanceProject']}` returns the portal object for the portal called `FinanceProject`.
	The value of this expression is whatever is returned in Java on invoking `.getSpace(...)` on the current `SpacesManager` passing in the `MDSSession` of the current `ADFContext`.

`#{spaceContext.space['`*`portalName`*`'].metadataPath}`
`#{spaceContext.currentSpace.metadataPath}`
	The MDS path of the portal metadata document for the portal with specified name *`portalName`* or the current portal (`currentSpace`). For example, `#{spaceContext.space['FinanceProject'].metadataPath}` evaluates to `/oracle/webcenter/space/metadata/spaces/FinanceProject/space.xml`
	The value of this expression is whatever is returned in java on invoking `.getMetadataPath()` on the portal object for the portal.

`#{spaceContext.space['`*`portalName`*`'].metadata}`
`#{spaceContext.currentSpace.metadata}`
	An `oracle.webcenter.spaces.beans.SpaceType` bean that carries metadata about the portal that is named *`portalName`* or the current portal (`currentSpace`).
	The value of this expression is whatever is returned in java on invoking `.getMetadata()` on the portal object for the portal passing in the `MDSSession` of the current `ADFContext`.

`#{spaceContext.space['`*`portalName`*`'].metadata.displayName}`
`#{spaceContext.currentSpace.metadata.displayName}`
	The display name of the portal that is named *`portalName`* or the current portal (`currentSpace`). For example, if a portal called `Web20Portal` has the display name `web 2.0 Portal`, then `#{spaceContext.space['Web20Portal'].metadata.displayName}` evaluates to `web 2.0 Portal`.

`#{spaceContext.space['`*`portalName`*`'].GSMetadata.groupSpaceURI}`
`#{spaceContext.currentSpace.GSMetadata.groupSpaceURI}`
	The URL of the portal that is named *`portalName`* or the current portal (`currentSpace`).

Table G–24 (Cont.) EL Expressions Relevant to Specific Portals

Expression	Function

`#{WCPrepareImageURL[spaceContext.space['`*`portalName`*`'].metadata.icon]['']}`
`#{WCPrepareImageURL[spaceContext.currentSpace.metadata.icon]['']}`
	A URL to the icon associated with the portal that is named *`portalName`* or the current portal (`currentSpace`).

`#{spaceContext.space['`*`portalName`*`'].metadata.description}`
`#{spaceContext.currentSpace.metadata.description}`
	The description of the portal that is named *`portalName`* or the current portal (`currentSpace`). For example, `#{spaceContext.space['FinanceProject'].metadata.description}` evaluates to *Conglomeration of all teams involved in financial activities*.

`#{spaceContext.space['`*`portalName`*`'].metadata.creationDate}`
`#{spaceContext.currentSpace.metadata.creationDate}`
	A *java.util.Calendar* object representing the date-time on which the portal with specified name *`portalName`* or the current portal (`currentSpace`) was created.

`#{spaceContext.space['`*`portalName`*`'].metadata.createdBy}`
`#{spaceContext.currentSpace.metadata.createdBy}`
	The user-name of the person who created the portal that is named *`portalName`* or the current portal (`currentSpace`).

`#{spaceContext.space['`*`portalName`*`'].metadata.keywords}`
`#{spaceContext.currentSpace.metadata.keywords}`
	A comma-delimited list of searchable keywords associated with the portal with the name *`portalName`* or the current portal (`currentSpace`). For example, if the portal *FinanceProject* has the keywords `finance, project, money,` then `#{spaceContext.space['FinanceProject'].metadata.keywords}` evaluates to *finance, project, money*.

`#{spaceContext.space['`*`portalName`*`'].metadata.offline}`
`#{spaceContext.currentSpace.metadata.offline}`
	Boolean value that indicates whether the portal that is named *`portalName`* or the current portal (`currentSpace`) is offline.

`#{spaceContext.space['`*`portalName`*`'].metadata.closed}`
`#{spaceContext.currentSpace.metadata.closed}`
	Boolean value that indicates whether the portal that is named *`portalName`* or the current portal (`currentSpace`) is closed.

`#{spaceContext.space['`*`portalName`*`'].metadata.selfRegistration}`
`#{spaceContext.currentSpace.metadata.selfRegistration}`
	Boolean value that indicates whether users are allowed to register themselves with the portal that is named *`portalName`* or the current portal (`currentSpace`).

`#{spaceContext.space['`*`portalName`*`'].metadata.discoverable}`
`#{spaceContext.currentSpace.metadata.discoverable}`
	Boolean value that indicates whether users can discover the existence of the portal that is named *`portalName`* or the current portal (`currentSpace`) by searching for it or seeing it listed on the My portals page.

`#{spaceContext.space['`*`portalName`*`'].metadata.publishRSS}`
`#{spaceContext.currentSpace.metadata.publishRSS}`
	Boolean value indicating whether the portal that is named *`portalName`* or the current portal (`currentSpace`) publishes RSS feeds.

`#{spaceContext.space['`*`portalName`*`'].distributionList}`
`#{spaceContext.currentSpace.distributionList}`
	The email address of the mailing list associated with the portal that is named *`portalName`* or the current portal (`currentSpace`).

Table G–24 (Cont.) EL Expressions Relevant to Specific Portals

Expression	Function

`#{spaceContext.space['portalName'].metadata.customAttributes['attributeName']}`
`#{spaceContext.currentSpace.metadata.customAttributes['attributeName']}`
	The value of a specific custom attribute of the name `attributeName` for the portal that is named `portalName` or the current portal (`currentSpace`). For example, if the *FinanceProject* portal has a custom attribute called `stockPrice` with a value of `13.9`, then `#{spaceContext.space['FinanceProject'].metadata.customAttributes['stockPrice']}` evaluates to *13.9*.
	Note: If you use these ELs to provide a value for a field in WebCenter Portal Administration, clicking the **Test** button may return a blank value. However, the value will resolve correctly in the running portal.

`#{WCPrepareImageURL[spaceContext.space['portalName'].metadata.logo]['']}`
`#{WCPrepareImageURL[spaceContext.currentSpace.metadata.logo]['']}`
	Returns the logo URL for the portal named `portalName` or the current portal (`currentSpace`).

`#{spaceContext.spacesQuery.property['value']}`
`#{spaceContext.spacesQuery.property['value'].listSpaces}`
	A means of querying a portal using a query parameter in the form of `property['value']`, where `property` means the name of the property, for example, `unionOf`, `shape`, and so on; and `value` means the criteria to use in fetching the list of all portals, discoverable portals, and so on.
	If `listSpaces` is appended to the expression, the query returns the list of portals of type `GSMetadata`. (For more information, see `Interface GSMetadata` in *Java API Reference for Oracle WebCenter Portal*.)
	For example, the following EL expression returns a list of all discoverable portals.
	`#{spaceContext.spacesQuery.unionOf['DISCOVERABLE'].listSpaces}`
	If `listportals` is not appended to the EL, then the EL evaluates to an object of type `SpacesQueryParameter`. This object type must be evaluated using `SpacesManager.getSpaces(SpacesQueryParameters)`, which in turn returns a list of portals of type `GSMetadata`.
	For example, the following EL expression returns an instance of type `SpacesQueryParameters` with all the query conditions populated.
	`#{spaceContext.spacesQuery.unionOf['DISCOVERABLE']}`

`#{spaceContext.spacesQuery.unionOf['USER_JOINED'].shape['ROOT_LEVEL'].listSpaces}`	Returns a list of all top-level portals of which the current user is a member This EL returns only those portals that do not have a parent, that is, it does not return subportals.
`#{spaceContext.spacesQuery.unionOf['USER_JOINED'].shape['RECURSIVE_FLATTENED'].listSpaces}`	Returns a list of all portals of which the current user is a member This EL also returns all the subportals under each of the parent portals to which the current user has access. To see an example, refer to Section G.14.5.1, "Example: Using EL Expressions for Various Portals".

Table G–24 (Cont.) EL Expressions Relevant to Specific Portals

Expression	Function
`#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].sort['`*`sortBy field picked from WcSpaceHeader`*`']}`	Returns portals sorted into the order specified by the sort criteria For example, the following query returns a list of portals to which the user has access sorted by `discoverable` and `lastUpdateDate` fields. Note that in the following example, the identifier `sp` represents the JPA entity for a portal, `WcSpaceHeader`. `#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].sort['sp.discoverable']['asc']['sp.lastUpdateDate']['desc'].listSpaces}`
`#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].pageNumber[`*`page_num`*`].listSpaces}`	Allows specifying the page number (0-based) to select from the results matching the query criteria For example, the following expression returns a list of all portals to which a user has access and returns the third page of the result set: `#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].pageNumber[2].listSpaces]}`
`#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].itemsPerPage[`*`page_num`*`].listSpaces}`	Allows specifying the number of results to be included in each page when breaking down the result portal into pages For example, the following expression returns a list of all portals to which a user has access, listing 10 records per page. `#{spaceContext.spacesQuery.unionOf['ALL_QUERIABLE'].pageNumber[10].listSpaces]}`

`#{spaceContext.spacesQuery.unionOf.ALL_QUERIABLE.where[wCond['sp.createdBy']['like']['monty%'] ['and']`
`[wCond['sp.selfSubEnabled']['is']['null']`
`['or']`
`[wCond['sp.selfSubEnabled']['=']['N']]`
`['not'] ] ].listSpaces}`
	Returns a list of all portals a user has access which are created by a specified user, and on which self subscription is enabled. (For more information, see `SpacesQueryParameters` and `SpacesQueryFilter` in *Java API Reference for Oracle WebCenter Portal*.)

G.14.5.1 Example: Using EL Expressions for Various Portals

This section provides an example of using EL expressions to query various portals.

In this example, you will use the following EL to display a list of all portals of which you are a member:

```
"#{spaceContext.spacesQuery.unionOf['USER_JOINED'].shape['RECURSIVE_
FLATTENED'].listSpaces}"
```

You will also use the following methods to display the logo, name, description, and number of members of a portal.

- `iconURI` - to display the portal logo
- `displayName` - to display the portal name
- `description` - to display the portal description
- `memberCount` - to display the number of portal members

To query a portal:

1. Create a new task flow, and mark it as available for use, as described in the "Working with Task Flows" section in *Building Portals with Oracle WebCenter Portal*.
2. Edit the source code of the task flow. On the **Assets** tab, select the task flow. From the **Actions** menu, select **Edit Source**.
3. In the Edit Source dialog, on the **Fragment** tab, replace the existing code with the following code:

```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable"
xmlns:f="http://java.sun.com/jsf/core"
xmlns:af="http://xmlns.oracle.com/adf/faces/rich"
xmlns:c="http://java.sun.com/jsp/jstl/core"
xmlns:fn="http://java.sun.com/jsp/jstl/functions">
   <af:panelGroupLayout id="pgl1">
      <cust:panelCustomizable id="pc1">
         <table border="0" width="100%">
            <af:iterator id="it1" var="row"
value="#{spaceContext.spacesQuery.unionOf['USER_JOINED'].shape['RECURSIVE_
FLATTENED'].listSpaces}">
                  <c:set var="iconURI"
value="#{fn:split(row.iconURI,'}')[1]}"/>
                  <c:set var="displayName" value="#{row.displayName}"/>
                  <c:set var="description" value="#{row.description}"/>
                  <c:set var="numMembers" value="#{row.memberCount}"/>
                       <tr class="PortletText1">
                              <td width="16px" rowspan="3" valign="top">
                                      <af:image id="img1"
source="/webcenter-spaces-resources/oracle/webcenter/siteresources/scopedMD/sha
red#{iconURI}/ICON16"/>
                               </td>
                               <td>
                                    <af:outputText id="otCol1"
                                             value="#{displayName}"

inlineStyle="color:#333333; font-size:12px; font-weight:bold;"/>
                                </td>
                         </tr>
                          <tr>
                              <td>
                                  <af:outputText id="otCol3"
                                                   value="#{description}"

inlineStyle="color:#666666; font-size:12px;"/>
                                </td>
                          </tr>
                          <tr>
                             <td>
                                <af:outputText id="otCol4"
                                              value="members (#{numMembers}) -"

inlineStyle="color:#666666; font-size:10px;"/>
                                     <af:spacer id="spacer1" width="5px"/>
                                     <af:goLink id="gl1"

destination="/spaces/#{row.name}"
```

```
                                                   targetFrame="_blank"
                                                   text="view"/>
                              </td>
                            </tr>
                     </af:iterator>
                   </table>
                 </cust:panelCustomizable>
               </af:panelGroupLayout>
             </jsp:root>
```

4. Add the task flow to a page. In the resource catalog, the custom task flow is available under **UI Components** > **Task Flows**.

   The page should now show a list of all the portals of which you are is a member.

G.14.6 EL Expressions Relevant to Specific Pages

Table G–25 lists EL expressions relevant to portal pages and describes the types of functionality it provides.

Table G–25 EL Expressions Relevant to Specific Pages

Expression	Function
`#{pageDocBean.title}`	Returns the page display name, for example: *FinanceProject*
`#{pageDocBean.createdBy}`	Returns the user name of the person who created the page, for example: *monty*
`#{pageDocBean.createDateString}`	Returns the date and time the page was created, for example: *2008-11-19T10:18:36*
`#{pageDocBean.lastUpdatedBy}`	Returns the user name of the person who last updated the page, for example: *monty*
`#{pageDocBean.lastUpdateDateString}`	Returns the date and time the page was last updated, for example: *2008-11-19T10:18:36*
`#{pageDocBean.pagePath}`	Returns the file directory path to the page relative to the application root directory, for example: */oracle/webcenter/page/scopedMD/s8bba98ff_4cbb_40b8_beee_296c916a23ed/user/Umonty/Page4.jspx*
`#{pageDocBean.name}`	Returns the file name of the page, for example: *Page4.jspx*
`#{pageDocBean.UICSSStyle}`	Returns the name of the style scheme used on the page, for example: *WCSchemeEggShell*
`#{pageDocBean.UISchemeBGImage}`	Returns the directory path and file name of the page scheme background image.
`#{pageDocBean.UISchemeBGColorString}`	Returns the hexadecimal value of the page scheme background color, for example: *#ffa500*

Table G–25 (Cont.) EL Expressions Relevant to Specific Pages

Expression	Function
`#{pageDocBean.pagePermission}`	Returns the permission the current user has on the page, for example: *oracle.webcenter.page.model.security.CustomPagePermission*
`#{pageDocBean.pageSecurityTarget}`	A string of 60 or so characters that uniquely identifies the current page to the security system, for example: *oracle_webcenter_page_scopedMD_s8bba98ff_4cbb_40b8_beee_296c916a23ed_user_Umonty_Page4PageDef*
`#{changeModeBean.inEditMode}`	Returns *true* if current page is in Composer mode. Returns *false* if current page is not in Composer mode

G.14.7 EL Expressions Relevant to Portal Event Contexts

Table G–26 lists EL expressions relevant to the types of portal events that can trigger the passing of payloads (rather than events relevant to the events feature).

You can access all or part of the event payloads provided in Table G–26 once they have been raised.

For example, for the whole payload, use the following EL:

```
#{wcEventContext.events.eventName}
```

For example:

```
#{wcEventContext.events.WebCenterUserSelected}
```

All of the payloads for the ELs in Table G–26 are Maps. To dereference a map entry, use the standard EL for Maps:

```
#{wcEventContext.events.WebCenterUserSelected.UserName}
```

> **See Also:** For more information about event wiring, see the "Wiring Pages, Task Flows, Portlets, and ADF Components" chapter in *Building Portals with Oracle WebCenter Portal*.

Table G–26 EL Expressions Relevant to Event Contexts

Expression	Function

Event Context
#{wcEventContext.events.WebCenterResourceSelected}
Document Name
#{wcEventContext.events.WebCenterResourceSelected.name}
Document Creator
#{wcEventContext.events.WebCenterResourceSelected.createdBy}
Document Last Modified By
#{wcEventContext.events.WebCenterResourceSelected.lastModifiedBy}
	Use in context wiring between producer and consumer task flows. Returns a map that relates some piece of metadata from the producer to some piece of metadata from the consumer, for example, from a document creator to the creator's Profile.
	Producer task flows include:
	■ Document Manager
	■ Recent Documents
	■ Document List Viewer

	Consumer task flows include: ■ Activity Graph - Similar Items (show other documents that may be of interest to the user) ■ Links (show the items that are linked to the selected document) ■ Profile (view the Profile of the document's author) ■ Activity Stream (view activities related to this document) ■ Tags (tags on this document and a means of accessing the Tag Center)

Event Context
#{wcEventContext.events.WebCenterUserSelected}
User Name
#{wcEventContext.events.WebCenterUserSelected.userName}
User GUID
#{wcEventContext.events.WebCenterUserSelected.userGUID}
portal Name
#{wcEventContext.events.WebCenterUserSelected.*portalName*}
portal GUID
#{wcEventContext.events.WebCenterUserSelected.*portalGUID*}
	Use in context wiring between producer and consumer task flows. Returns a map that relates some piece of metadata from the producer to some piece of metadata from the consumer, for example, from a user to the user's connections.
	Producer task flows include:
	■ Connections
	■ Portal Members
	Consumer task flows include:
	■ Connections (show connections of the selected user)
	■ Documents task flows (show documents created by the selected user)
	■ Activity Stream (view this user's activities)
	■ Tags (tags created by this user)
	■ Profile (show this user's Profile)

Table G–26 (Cont.) EL Expressions Relevant to Event Contexts

Expression	Function

Event Context
`#{wcEventContext.events.WebCenterConnectionSelected}`
Profile User Name
`#{wcEventContext.events.WebCenterConnectionSelected.profileUserName}`
Profile User GUID
`#{wcEventContext.events.WebCenterConnectionSelected.profileUserGUID}`
Connected User Name
`#{wcEventContext.events.WebCenterConnectionSelected.userName}`
Connected User GUID
`#{wcEventContext.events.WebCenterConnectionSelected.userGUID}`
	--

`#{wcEventContext.events.WebCenterSpaceSelected.SpaceName}`	Returns the name of the selected portal
`#{wcEventContext.events.WebCenterSpaceSelected.SpaceGUID}`	Returns the GUID of the selected portal

G.14.8 Utilitarian EL Expressions

Table G–27 lists utilitarian EL expressions and describes the types of functionality they provide.

Table G–27 Utilitarian EL Expressions

Expression	Function
`#{userPreferences.currentDate}`	Returns the current date in the format specified in the current user's preferences.
`#{WCTruncator['text']['numberOfChars']}`	Returns a truncation of the string specified as `text` to the number of characters specified as `numberOfChars`, followed by a trailing ellipsis, for example: `#{WCTruncator['abracadabra']['5']}` evaluates to *abrac...*

`#{facesContext.viewRoot.locale}`
`#{facesContext.externalContext.requestLocale}`
	Both of these expressions return the request locale (that is, the browser locale setting).

`#{adfFacesContext.skinFamily}`	Returns the current application skin family. Returns the same value as `#{requestContext.skinFamily}`.

G.15 EL Expressions Related to Device Settings

This section lists ELs for obtaining information about device settings. For information about device settings, see the "Administering Device Settings" chapter in *Administering Oracle WebCenter Portal*.

You can use EL expressions to set assets (skins and page templates) targeted to specific devices For information on using EL with device settings, see the "Administering Device Settings" chapter in *Administering Oracle WebCenter Portal*.

- Table G–28 lists EL expressions for obtaining information about device group mappings.
- Table G–29 lists ELs for obtaining information about devices.
- Table G–30 lists ELs for obtaining information about skins and page templates associated with device groups.
- Section G.15.1, "Sample Task Flow Code for Discovering Device Attributes" presents sample code that can be used in a task flow for discovering the attributes of the device used to access the portal.

For example, a page designer can use the device's attribute to control the width of the content area of a page by using the following EL:

```
#{DeviceAgent.device.attributes['display_resolution_width']
```

Table G–28 EL Expressions Related to Device Agents

Expression	Related Java API	Description
`#{DeviceAgent}`	`DeviceAgent.getInstance()`	The root entry point to all device settings EL.
`#{DeviceAgent.device}`	`DeviceAgent.getInstance().getDevice()`	The device to which the current request is mapped.
`#{DeviceAgent.deviceGroups}`	`DeviceAgent.getInstance().getDeviceGroups()`	A list of device groups to which the current device maps. This operation returns all device groups, whether they are marked as `enabled` or not.
`#{DeviceAgent.currentScopeDeviceGroup}`	`DeviceAgent.getInstance().getCurrentScopeDeviceGroup()`	Gets the device group that the incoming request was mapped to for the given portal. This EL can help the administrator diagnose issues about why a page variant is not getting displayed for a particular device.

Table G–29 EL Expressions Relevant to Devices

Expression	Related Java API	Description
`#{DeviceAgent.device}`	`DeviceAgent.getInstance().getDevice()`	The device to which the current request is mapped.

Table G–29 (Cont.) EL Expressions Relevant to Devices

Expression	Related Java API	Description
`#{DeviceAgent.device.name}`	`DeviceAgent.getInstance().getDevice().getName()`	The name of the device. This is a system friendly identifier that can be used for internal linking.
`#{DeviceAgent.device.displayName}`	`DeviceAgent.getInstance().getDevice().getDisplayName()`	The display name of the device.
`#{DeviceAgent.device.attributes}`	`DeviceAgent.getInstance().getDevice().getAttributes()`	A map of attributes associated with a device - like the screen size, OS version, and so on. For example, the following EL returns the display resolution width that was set when the device was created: `#{DeviceAgent.device.attributes['display_resolution_width']}`

Table G–30 EL Expressions Relevant to Device Groups

Expression	Related Java API	Descriptions
`#{DeviceAgent.currentScopeDeviceGroup}`	`DeviceAgent.getInstance().getCurrentScopeDeviceGroup()`	The device group to which the current request has been mapped. The typical flow for identifying the appropriate device group is as follows: 1. Identify the device to which the current request belongs. 2. Get all the device groups that have been enabled for the current portal. 3. Identify the first device group (from the above list) to which the device belongs.
`#{DeviceAgent.currentScopeDeviceGroup.name}`	`DeviceAgent.getInstance().getCurrentScopeDeviceGroup().getName()`	The name of the device group. For example: `#{DeviceAgent.currentScopeDeviceGroup.name == 'androidTablets'}`
`#{DeviceAgent.currentScopeDeviceGroup.portalPageTemplate}`	`DeviceAgent.getInstance().getCurrentScopeDeviceGroup().getPortalPageTemplate()`	Returns the GUID of the portal page template associated with this device group object. If the method returns NULL, the default page template setting for the portal is in effect. **Note:** For information on the resource ELs used to work with the obtained GUID, see Section G.6, "ELs Related to Portal Resources."

Table G–30 (Cont.) EL Expressions Relevant to Device Groups

Expression	Related Java API	Descriptions
`#{DeviceAgent.currentScopeDeviceGroup.portalSkin}`	`DeviceAgent.getInstance().getCurrentScopeDeviceGroup().getPortalSkin()`	Returns the GUID of the portal skin associated with this device group. If the method returns NULL, the default skin setting for the portal is in effect. **Note:** For information on the resource ELs used to work with the obtained GUID, see Section G.6, "ELs Related to Portal Resources."
`#{DeviceAgent.currentScopeDeviceGroup.default}`	`DeviceAgent.getInstance().getCurrentScopeDeviceGroup().isDefault()`	Returns true if the device group is the default for the current device. Returns false if the device group is not the default for the device. For example, if the default device group is "Desktop Browsers" and you access the portal on an iPad, then the device group will be iPad, but it is not the default device group. In this case, the method returns false.
`#{DeviceAgent.currentScopeDeviceGroup.enabled}`	`DeviceAgent.getInstance().getCurrentScopeDeviceGroup().isEnabled()`	Identifies whether or not this device group has been marked as enabled for the current portal. **Note:** In this invocation, the device group will always state `true`. This EL is useful when working with all the device groups as obtained from the EL `#{DeviceAgent.deviceGroups}`

G.15.1 Sample Task Flow Code for Discovering Device Attributes

Example G–1 lists a JSF page fragment that can be used to create a task flow for discovering device attributes. EL is used to return the attributes. The task flow may be useful for troubleshooting situations where the portal is not rendering properly on a device. By discovering the device attributes, you can take action to correct the rendering problem. Figure G–8 shows output from a task flow created with this sample code.

Example G–1 Task Flow Code for Discovering Device Attributes

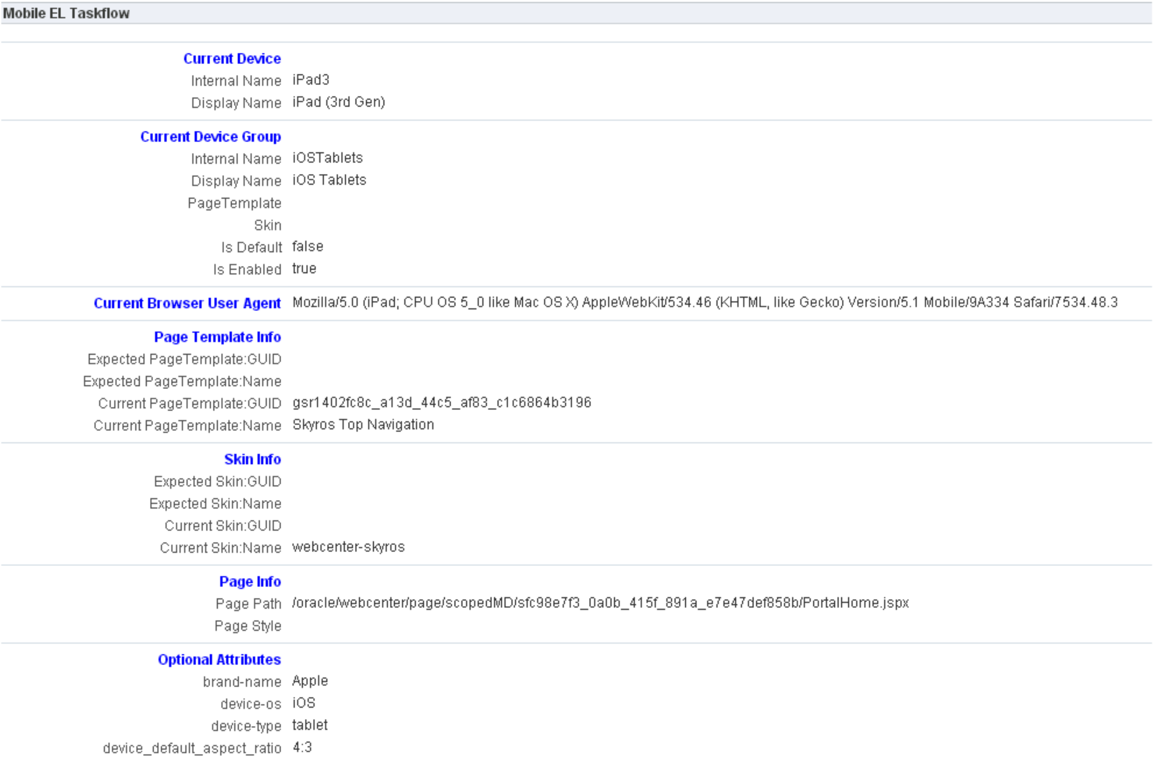
```
<?xml version='1.0' encoding='UTF-8'?>
<jsp:root xmlns:jsp="http://java.sun.com/JSP/Page" version="2.1"
xmlns:pe="http://xmlns.oracle.com/adf/pageeditor"
xmlns:cust="http://xmlns.oracle.com/adf/faces/customizable" xmlns:f="http://java.sun.com/jsf/core"
xmlns:af="http://xmlns.oracle.com/adf/faces/rich">
   <af:panelGroupLayout layout="scroll" id="pgl1">
      <cust:panelCustomizable id="pc1"/>
      <f:facet name="separator">
         <af:separator id="s1"/>
      </f:facet>
      <af:panelFormLayout id="pfl1">
         <af:group id="g1">
            <af:panelLabelAndMessage id="it0" label="Current Device"
labelStyle="color:#0000ff;font-weight:bold;"/>
            <af:panelLabelAndMessage id="it1plm" label="Internal Name">
               <af:outputText id="it1" value="#{DeviceAgent.device.name}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it2plm" label="Display Name">
               <af:outputText id="it2" value="#{DeviceAgent.device.displayName}"/>
            </af:panelLabelAndMessage>
         </af:group>
         <af:group>
```

```
            <af:panelLabelAndMessage id="it01" label="Current Device Group"
labelStyle="color:#0000ff;font-weight:bold;"/>
            <af:panelLabelAndMessage id="it3plm" label="Internal Name">
               <af:outputText id="it3" value="#{DeviceAgent.currentScopeDeviceGroup.name}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it4plm" label="Display Name">
               <af:outputText id="it4" value="#{DeviceAgent.currentScopeDeviceGroup.displayName}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it5plm" label="PageTemplate">
               <af:outputText id="it5"
value="#{srmContext.id[DeviceAgent.currentScopeDeviceGroup.portalPageTemplate].singleResult.display
Name}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it6plm" label="Skin">
               <af:outputText id="it6"
value="#{srmContext.id[DeviceAgent.currentScopeDeviceGroup.portalSkin].singleResult.displayName}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it7plm" label="Is Default">
               <af:outputText id="it7" value="#{DeviceAgent.currentScopeDeviceGroup.default}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it8plm" label="Is Enabled">
               <af:outputText id="it8" value="#{DeviceAgent.currentScopeDeviceGroup.enabled}"/>
            </af:panelLabelAndMessage>
         </af:group>
         <af:group>
            <af:panelLabelAndMessage id="it9plm" label="Current Browser User Agent"
labelStyle="color:#0000ff;font-weight:bold;">
               <af:outputText id="it9" value="#{DeviceAgent.userAgent}"/>
            </af:panelLabelAndMessage>
         </af:group>
         <af:group>
            <af:panelLabelAndMessage id="pt0" label="Page Template Info"
labelStyle="color:#0000ff;font-weight:bold;"/>
            <af:panelLabelAndMessage id="it010plm" label="Expected PageTemplate:GUID">
               <af:outputText id="it010"
value="#{DeviceAgent.currentScopeDeviceGroup.portalPageTemplate}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it0010plm" label="Expected PageTemplate:Name">
               <af:outputText id="it0010"
value="#{srmContext.id[DeviceAgent.currentScopeDeviceGroup.portalPageTemplate].singleResult.display
Name}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it10plm" label="Current PageTemplate:GUID">
               <af:outputText id="it10"
value="#{WCAppContext.application.siteTemplatesManager.currentSiteTemplateId}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it10aplm" label="Current PageTemplate:Name">
               <af:outputText id="it10a"
value="#{srmContext.id[WCAppContext.application.siteTemplatesManager.currentSiteTemplateId].singleR
esult.displayName}"/>
            </af:panelLabelAndMessage>
         </af:group>
         <af:group>
            <af:panelLabelAndMessage id="sk0" label="Skin Info"
labelStyle="color:#0000ff;font-weight:bold;"/>
            <af:panelLabelAndMessage id="it0111plm" label="Expected Skin:GUID">
               <af:outputText id="it0111"
value="#{DeviceAgent.currentScopeDeviceGroup.portalSkin}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it0112plm" label="Expected Skin:Name">
```

```
               <af:outputText id="it0112"
value="#{srmContext.id[DeviceAgent.currentScopeDeviceGroup.portalSkin].singleResult.displayName}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it111plm" label="Current Skin:GUID">
               <af:outputText id="it111" value=""/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="it112plm" label="Current Skin:Name">
               <af:outputText id="it112"
value="#{requestScope['oracle.webcenter.webcenterapp.view.shell.WebCenterShellManager.SHELLHANDLER'
].adfFacesSkin}"/>
            </af:panelLabelAndMessage>
         </af:group>
         <af:group>
            <af:panelLabelAndMessage id="pg0" label="Page Info"
labelStyle="color:#0000ff;font-weight:bold;"/>
            <af:panelLabelAndMessage id="pg10" label="Page Path">
               <af:outputText id="pg1" value="#{pageDocBean.pagePath}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="pg20" label="Page Style">
               <af:outputText id="pg2" value=""/>
            </af:panelLabelAndMessage>
         </af:group>
         <af:group>
            <af:panelLabelAndMessage id="ap90" label="Optional Attributes"
labelStyle="color:#0000ff;font-weight:bold;"/>
            <af:panelLabelAndMessage id="ap1opta" label="brand-name">
               <af:outputText id="ap1" value="#{DeviceAgent.device.attributes['brand-name']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap2opta" label="device-os">
               <af:outputText id="ap2" value="#{DeviceAgent.device.attributes['device-os']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap3opta" label="device-type">
               <af:outputText id="ap3" value="#{DeviceAgent.device.attributes['device-type']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap4opta" label="device_default_aspect_ratio">
               <af:outputText id="ap4" value="#{DeviceAgent.device.attributes['device_default_
aspect_ratio']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap5opta" label="device_os-version">
               <af:outputText id="ap5" value="#{DeviceAgent.device.attributes['device_
os-version']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap6opta" label="device_preview_css">
               <af:outputText id="ap6" value="#{DeviceAgent.device.attributes['device_preview_
css']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap7opta" label="device_preview_horizontal_css">
               <af:outputText id="ap7" value="#{DeviceAgent.device.attributes['device_preview_
horizontal_css']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap8opta" label="device_preview_viewport_css">
               <af:outputText id="ap8" value="#{DeviceAgent.device.attributes['device_preview_
viewport_css']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap9opta" label="device_preview_viewport_horizontal_css">
               <af:outputText id="ap9" value="#{DeviceAgent.device.attributes['device_preview_
viewport_horizontal_css']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap10opta" label="device_streaming_flv">
```

```
               <af:outputText id="ap10" value="#{DeviceAgent.device.attributes['device_streaming_
flv']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap11opta" label="device_streaming_preferred_http_
protocol">
               <af:outputText id="ap11" value="#{DeviceAgent.device.attributes['device_streaming_
preferred_http_protocol']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap12opta" label="device_streaming_preferred_protocol">
               <af:outputText id="ap12" value="#{DeviceAgent.device.attributes['device_streaming_
preferred_protocol']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap13opta" label="device_video_streaming">
               <af:outputText id="ap13" value="#{DeviceAgent.device.attributes['device_video_
streaming']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap14opta" label="display_orientation_support">
               <af:outputText id="ap14" value="#{DeviceAgent.device.attributes['display_
orientation_support']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap15opta" label="display_resolution_height">
               <af:outputText id="ap15" value="#{DeviceAgent.device.attributes['display_resolution_
height']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap16opta" label="display_resolution_width">
               <af:outputText id="ap16" value="#{DeviceAgent.device.attributes['display_resolution_
width']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap17opta" label="is-wireless_device">
               <af:outputText id="ap17" value="#{DeviceAgent.device.attributes['is-wireless_
device']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap18opta" label="marketing-name">
               <af:outputText id="ap18"
value="#{DeviceAgent.device.attributes['marketing-name']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap19opta" label="model-name">
               <af:outputText id="ap19" value="#{DeviceAgent.device.attributes['model-name']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap20opta" label="model-version">
               <af:outputText id="ap20" value="#{DeviceAgent.device.attributes['model-version']}"/>
            </af:panelLabelAndMessage>
            <af:panelLabelAndMessage id="ap21opta" label="icon">
               <af:outputText id="ap21" value="#{DeviceAgent.device.attributes['icon']}"/>
            </af:panelLabelAndMessage>
         </af:group>
      </af:panelFormLayout>
   </af:panelGroupLayout>
</jsp:root>
```

Figure G–8 Output from Sample Task Flow



Mobile EL Taskflow

Current Device	
Internal Name	iPad3
Display Name	iPad (3rd Gen)
Current Device Group	
Internal Name	iOSTablets
Display Name	iOS Tablets
PageTemplate	
Skin	
Is Default	false
Is Enabled	true
Current Browser User Agent	Mozilla/5.0 (iPad; CPU OS 5_0 like Mac OS X) AppleWebKit/534.46 (KHTML, like Gecko) Version/5.1 Mobile/9A334 Safari/7534.48.3
Page Template Info	
Expected PageTemplate:GUID	
Expected PageTemplate:Name	
Current PageTemplate:GUID	gsr1402fc8c_a13d_44c5_af83_c1c6864b3196
Current PageTemplate:Name	Skyros Top Navigation
Skin Info	
Expected Skin:GUID	
Expected Skin:Name	
Current Skin:GUID	
Current Skin:Name	webcenter-skyros
Page Info	
Page Path	/oracle/webcenter/page/scopedMD/sfc98e7f3_0a0b_415f_891a_e7e47def858b/PortalHome.jspx
Page Style	
Optional Attributes	
brand-name	Apple
device-os	iOS
device-type	tablet
device_default_aspect_ratio	4:3

H

WebCenter Portal Analytics Database Schema

This appendix describes the underlying database design for Oracle WebCenter Portal's Analytics for developers building *custom* analytics data queries.

This appendix contains the following topics:

- Section H.1, "Analytics Database Schema Overview"
- Section H.2, "Analytics Fact Table Descriptions"
- Section H.3, "Analytics Dimension Table Descriptions"
- Section H.4, "Analytics System Table Descriptions"
- Section H.5, "Analytics User Properties"
- Section H.6, "Analytics Event and Dimension Data Types"

For more information about building custom analytics data queries, see Section 47.3, "Building Analytics Reports."

H.1 Analytics Database Schema Overview

This section contains the following topics:

- Section H.1.1, "Analytics Database Model Overview"
- Section H.1.2, "Analytics Database Table Overview"

H.1.1 Analytics Database Model Overview

Oracle WebCenter Portal's Analytics database schema is modeled as a star-schema to optimize performance and provide fast response times.

Analytics data is stored in fact and dimension fact tables:

- **Analytics Fact Tables** are created when the Analytics Collector runs for the first time. Each fact table stores a specific event type, for example, page views, portal views, document uploads, blog views, wiki edits, and so on. Columns in these fact tables mostly contain integer IDs that reference descriptive data stored in dimension tables.

  Table H–1, " Analytics Facts Tables (Prefixed ASFACT_WC)" lists types of analytics events that can be collected and stored, and the associated tables.

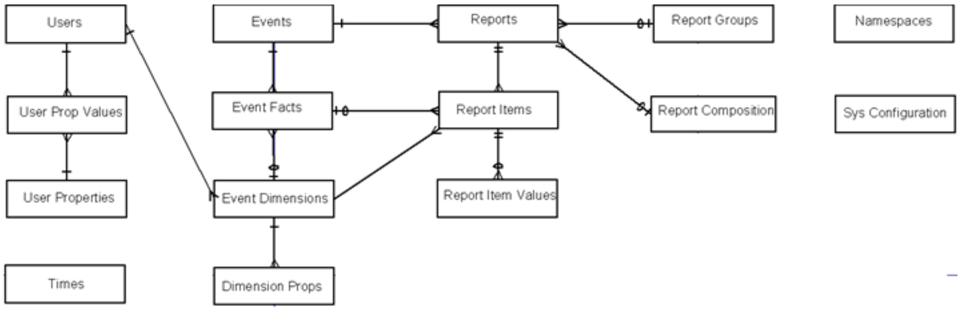
- **Analytics Dimension Tables** are also created when the Analytics Collector runs for the first time. Dimension tables store redundant descriptive data associated with analytics events. When a value is not found in these tables, a new record is added. Typical analytics dimension data includes: page name, browser name, document name, portal name, and so on.

Table H–2, " Analytics Dimension Tables (Prefixed ASDIM_WC)" lists the different types of analytics dimensions that can be collected and stored, and the associated table names.

The Analytics database schema also contains a few application tables that store information such as system configuration parameters. Application tables are created during installation.

Figure H–1 shows the relationship between predefined fact, dimension, and application tables in the analytics database schema.

Figure H–1 Analytics Database Model



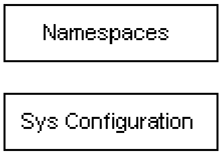
Tables shown in Figure H–1 store the following analytics data:

- Application configuration
- Event metadata
- Report metadata

Application Configuration

Figure H–2 shows which entities are used to store system parameters for Analytics.

Figure H–2 Application Configuration Entities

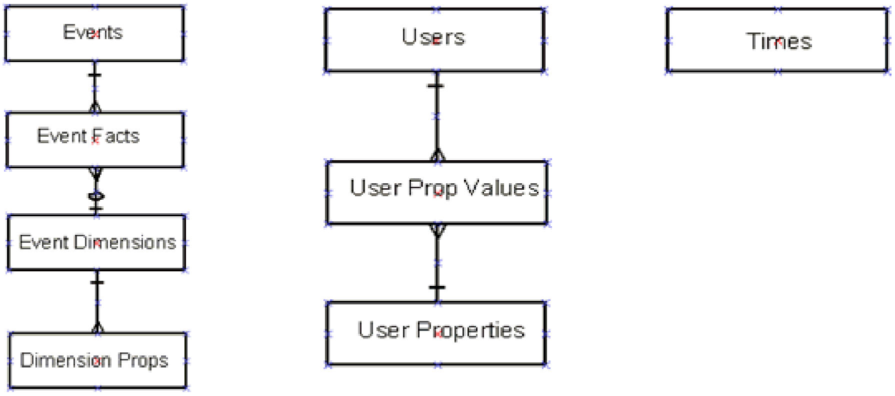


Event Metadata

Figure H–3 shows which entities are used to store event data. The Users and Times entities are mainly dimensions that provide user/time oriented views of the event data.

Event metadata records which events are collected, the tables where events are stored, as well as dimensions that are saved each time an event occurs.

Figure H–3 Event Metadata Entities

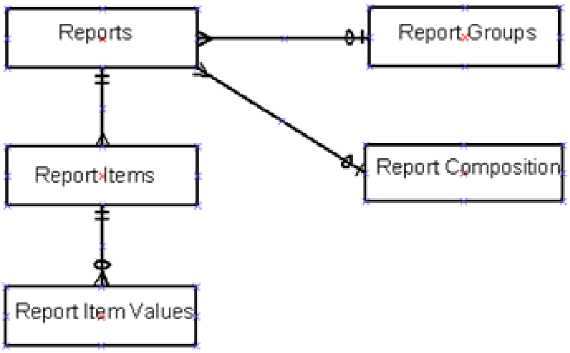


Report Metadata

Figure H–4 shows which entities represent out-of-the-box analytics reports. Metadata in these tables are the primary source for information such as report metrics, report structure, and columns listed.

Report metadata stores out-of-the-box report configurations for Oracle WebCenter Portal's Analytics. Each report contains many columns to display in the report and which filters to apply. Some reports are composed from other reports.

Figure H–4 Report Metadata Entities



H.1.2 Analytics Database Table Overview

This section lists and describes database tables in the analytics schema:

- Table H–1, " Analytics Facts Tables (Prefixed ASFACT_WC)"
- Table H–2, " Analytics Dimension Tables (Prefixed ASDIM_WC)"
- Table H–3, " Analytics System Tables (Prefixed ASSYS)"

Note: Table names for analytics event and dimension tables are automatically generated based on analytics event and dimension names. The mapping between analytics event and dimension names and their corresponding table names is defined in the ASSYS_EVENTS and ASSYS_EVENTDIMENSIONS tables.

Some table names include **double underscores**, for example, `ASFACT_WC_DOCLIB__0`. This is because all the table names include a component value that is 7 characters long, and in some cases one of those characters is an underscore (for example, `DOCLIB_`).

For an example of how to use a query to return the table names associated with a specific event, see Section H.1.2.1, "Sample SQL Query: Finding Table Names Associated with Specific Events".

Table H–1 Analytics Facts Tables (Prefixed ASFACT_WC)

Event Object	Table Name	Event Table Description
Pages	ASFACT_WC_PAGECRE_0	Stores event information captured by Analytics when a page is created.
	ASFACT_WC_PAGEDEL_0	Stores event information captured by Analytics when a page is deleted.
	ASFACT_WC_PAGEEDI_0	Stores event information captured by Analytics when a page is edited.
	ASFACT_WC_PAGETAG_0	Stores event information captured by Analytics when a page is tagged.
	ASFACT_WC_PAGEVIE_0	Stores event information captured by Analytics when a page is viewed.
Discussions	ASFACT_WC_DISCUSS_0	Stores event information captured by Analytics when a discussion topic is viewed.
	ASFACT_WC_DISCUSS_1	Stores event information captured by Analytics when an announcement is viewed.
	ASFACT_WC_DISCUSS_2	Stores event information captured by Analytics when a discussion forum is created.
	ASFACT_WC_DISCUSS_3	Stores event information captured by Analytics when a discussion forum is deleted.
	ASFACT_WC_DISCUSS_4	Stores event information captured by Analytics when a discussion topic is created.
	ASFACT_WC_DISCUSS_5	Stores event information captured by Analytics when a discussion topic is edited.
	ASFACT_WC_DISCUSS_6	Stores event information captured by Analytics when a discussion topic is deleted.
	ASFACT_WC_DISCUSS_7	Stores event information captured by Analytics when a discussion topic is tagged.
	ASFACT_WC_DISCUSS_8	Stores event information captured by Analytics when someone replies to a discussion topic message.
	ASFACT_WC_DISCUSS_9	Stores event information captured by Analytics when a discussion topic message is liked.
	ASFACT_WC_DISCUSS_A	Stores event information captured by Analytics when an announcement is created.

Table H–1 (Cont.) Analytics Facts Tables (Prefixed ASFACT_WC)

Event Object	Table Name	Event Table Description
	ASFACT_WC_DISCUSS_B	Stores event information captured by Analytics when an announcement is edited.
	ASFACT_WC_DISCUSS_C	Stores event information captured by Analytics when an announcement is deleted.
Documents - Blog - Wikis	ASFACT_WC_DOCLIB__0	Stores event information captured by Analytics when a document is viewed.
	ASFACT_WC_DOCLIB__1	Stores event information captured by Analytics when a document is downloaded.
	ASFACT_WC_DOCLIB__2	Stores event information captured by Analytics when a document is created.
	ASFACT_WC_DOCLIB__3	Stores event information captured by Analytics when a document is edited.
	ASFACT_WC_DOCLIB__4	Stores event information captured by Analytics when a document is tagged.
	ASFACT_WC_DOCLIB__5	Stores event information captured by Analytics when a document is liked.
	ASFACT_WC_DOCLIB__6	Stores event information captured by Analytics when a document is commented.
	ASFACT_WC_DOCLIB__7	Stores event information captured by Analytics when a document is deleted.
Portal Events	ASFACT_WC_EVENT_C_0	Stores event information captured by Analytics when a portal event is created.
	ASFACT_WC_EVENT_D_0	Stores event information captured by Analytics when a portal event is deleted.
	ASFACT_WC_EVENT_E_0	Stores event information captured by Analytics when a portal event is edited.
Portals	ASFACT_WC_GROUPSP_0	Stores event information captured by Analytics when a portal is viewed.
	ASFACT_WC_GROUPSP_1	Stores event information captured by Analytics when a portal is created.
	ASFACT_WC_GROUPSP_2	Stores event information captured by Analytics when someone joins a portal.
	ASFACT_WC_GROUPSP_3	Stores event information captured by Analytics when a portal is deleted.
Lists	ASFACT_WC_LIST_CR_0	Stores event information captured by Analytics when a list is created.
	ASFACT_WC_LIST_DE_0	Stores event information captured by Analytics when a list is deleted.
	ASFACT_WC_LIST_ED_0	Stores event information captured by Analytics when a list is edited.
Logins	ASFACT_WC_LOGINS_0	Stores event information captured by Analytics when a user logs in to the site.
People	ASFACT_WC_PEOPLEC_0	Stores event information captured by Analytics when someone adds a connection.
	ASFACT_WC_PEOPLEC_1	Stores event information captured by Analytics when someone posts on a wall.

Table H–1 (Cont.) Analytics Facts Tables (Prefixed ASFACT_WC)

Event Object	Table Name	Event Table Description
	ASFACT_WC_PEOPLEC_2	Stores event information captured by Analytics when someone edits a profile.
	ASFACT_WC_PEOPLEC_3	Stores event information captured by Analytics when someone edits status information.
Portlets	ASFACT_WC_PORTLET_0	Stores event information captured by Analytics when a portlet is viewed.
Searches	ASFACT_WC_SEARCHE_0	Stores event information captured by Analytics when a search is performed.

Table H–2 Analytics Dimension Tables (Prefixed ASDIM_WC)

Dimension Name	Table Name	Dimension Table Description
Applications	ASDIM_WC_APPLICA_0	Stores names of WebCenter Portal applications accessing analytics data.
IP Clients	ASDIM_WC_CLIENT__0	Stores client IP addresses received in analytics events.
Discussion Topics	ASDIM_WC_DISCUSS_0	Stores discussion topic details received in analytics events.
Discussion Forums	ASDIM_WC_DISCUSS_1	Stores discussion forum details received in analytics events.
Discussion Messages	ASDIM_WC_DISCUSS_2	Stores discussion message details received in analytics events.
Announcements	ASDIM_WC_DISCUSS_3	Stores announcement details received in analytics events.
Documents	ASDIM_WC_DOCUMENT_0	Stores document details received in analytics events.
Lists	ASDIM_WC_LISTS_0	Stores list details received in analytics events.
Pages	ASDIM_WC_PAGES_0	Stores WebCenter Portal page details received in analytics events.
Portlets	ASDIM_WC_PORTLET_0	Stores portlet information received in analytics events.
Portlet Instances	ASDIM_WC_PORTLET_1	Stores portlet instance information received in analytics events.
Portlet Producers	ASDIM_WC_PRODUCE_0	Stores producers associated with portlet.
Referrers	ASDIM_WC_REFERRE_0	Stores referred URLs where analytics events come from.
Searches	ASDIM_WC_SEARCHE_0	Stores search phrases received in analytics events.
Portal Events	ASDIM_WC_EVENTS_0	Stores portal event details, received in analytics events.
Portals	ASDIM_WC_GROUPSP_0	Stores portal information received in analytics events.
Tags	ASDIM_WC_TAGS_0	Stores tags received in analytics events.
Browsers	ASDIM_WC_USER_AG_0	Stores information about which browsers are used to access analytics.
Times	ASDIM_TIME	Stores times used to group analytics reports.

Table H–2 (Cont.) Analytics Dimension Tables (Prefixed ASDIM_WC)

Dimension Name	Table Name	Dimension Table Description
Users	ASDIM_USERS	Stores user details received in analytics events.
User Properties	ASDIM_USERPROPERTIES	Stores user properties.
User Property Values	ASDIM_USERPROPERTYVALUES	Stores user property values.

Table H–3 Analytics System Tables (Prefixed ASSYS)

Entity Name	Table Name	Table Description
Configuration	ASSYS_CONFIG	Stores system configuration details.
Dimension Properties	ASSYS_DIMENSIONPROPS	Stores configuration details for each dimension.
Event Dimensions	ASSYS_EVENTDIMENSIONS	Stores dimensions associated with each event.
Event Facts	ASSYS_EVENTFACTS	Stores facts associated with each event.
Events	ASSYS_EVENTS	Stores the different types of analytics events that are collected by Analytics. An analytics event represents a single user action, such as document view, user login, and so on.
Namespaces	ASSYS_NAMESPACES	Stores the namespace in which analytics events are registered.
Report Composition	ASSYS_REPORTCOMPOSITION	Stores out-of-the-box composite analytics reports.
Report Group	ASSYS_REPORTGROUP	Stores out-of-the-box analytics report groups, such as portlets, services, and so on.
Report Items	ASSYS_REPORTITEMS	Stores items included in each analytics report.
Report Item Values	ASSYS_REPORTITEMVALUES	Stores values associated with each item in an analytics report.
Reports	ASSYS_REPORTS	Stores out-of-the-box analytics reports.

H.1.2.1 Sample SQL Query: Finding Table Names Associated with Specific Events

This section provides a sample SQL query to return the names of tables associated with a specific event. This query uses a filter to return tables associated with documents.

```
SELECT tablename "Table Name",
       displayname "Event Display Name"
FROM   assys_events
WHERE tablename like 'ASFACT_WC_DOCLIB%'
ORDER BY 1;
```

Sample Report Output

```
Table Name            Event Display Name
-----------------------------------------
ASFACT_WC_DOCLIB__0   {HTTP://WWW.ORACLE.COM/ANALYTICS/WC}DOCLIB_DOCUMENTVIEWS
ASFACT_WC_DOCLIB__1   {HTTP://WWW.ORACLE.COM/ANALYTICS/WC}DOCLIB_DOCUMENTDOWNLOADS
ASFACT_WC_DOCLIB__2   {HTTP://WWW.ORACLE.COM/ANALYTICS/WC}DOCLIB_DOCUMENTCREATE
ASFACT_WC_DOCLIB__3   {HTTP://WWW.ORACLE.COM/ANALYTICS/WC}DOCLIB_DOCUMENTEDIT
```

```
ASFACT_WC_DOCLIB__4    {HTTP://WWW.ORACLE.COM/ANALYTICS/WC}DOCLIB_DOCUMENTTAG
ASFACT_WC_DOCLIB__5    {HTTP://WWW.ORACLE.COM/ANALYTICS/WC}DOCLIB_DOCUMENTLIKE
ASFACT_WC_DOCLIB__6    {HTTP://WWW.ORACLE.COM/ANALYTICS/WC}DOCLIB_DOCUMENTCOMMENT
ASFACT_WC_DOCLIB__7    {HTTP://WWW.ORACLE.COM/ANALYTICS/WC}DOCLIB_DOCUMENTDELETES
```

H.2 Analytics Fact Table Descriptions

Analytics fact tables are created when the Analytics Collector runs for the first time. Each fact table stores a specific event type, for example, page views, portal views, document uploads, blog views, wiki edits, and so on. Columns in these fact table mostly contain integer IDs that reference descriptive data stored in dimension tables.

This section describes each of the tables listed in Table H–1, " Analytics Facts Tables (Prefixed ASFACT_WC)".

H.2.1 ASFACT_WC_PAGECRE_0

Fact table that stores event information captured by Analytics when someone creates a page.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time the dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
PAGE_	NULL	NUMBER(38)	Page ID dimension.	ASDIM_WC_PAGES_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID.	ASDIM_WC_APPLICA_0.ID

H.2.2 ASFACT_WC_PAGEDEL_0

Fact table that stores event information captured by Analytics when someone deletes a page.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time the dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
PAGE_	NULL	NUMBER(38)	Page ID dimension.	ASDIM_WC_PAGES_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.3 ASFACT_WC_PAGEEDI_0

Fact table that stores event information captured by Analytics when someone edits a page.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
PAGE_	NULL	NUMBER(38)	Page ID dimension.	ASDIM_WC_PAGES_0.ID

H.2.4 ASFACT_WC_PAGETAG_0

Fact table that stores event information captured by Analytics when someone tags a page.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
TAG_	NULL	NUMBER(38)	Tag ID dimension.	ASDIM_WC_USER_AG_0.ID
PAGE_	NULL	NUMBER(38)	Page ID dimension.	ASDIM_WC_PAGES_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.5 ASFACT_WC_PAGEVIE_0

Fact table that stores event information captured by Analytics when someone views a page.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_ EVENTFACTS.ID
RESPONSE_ TIME_	NULL	NUMBER(16)	Response time (ms).	
CLIENT_IP_	NULL	NUMBER(38)	Client IP ID dimension.	ASDIM_WC_ CLIENT__0.ID
SESSION_ID_	NULL	NVARCHAR2(25 4)	Session ID.	
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_ GROUPSP_0.ID
REFERRER_	NULL	NUMBER(38)	Referrer ID dimension.	ASDIM_WC_ REFERRE_0.ID
PAGE_	NULL	NUMBER(38)	Page ID dimension.	ASDIM_WC_ PAGES_0.ID
USER_AGENT_	NULL	NUMBER(38)	User agent.	ASDIM_WC_USER_ AG_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_ APPLICA_0.ID

H.2.6 ASFACT_WC_DISCUSS_0

Fact table that stores event information captured by Analytics when someone views a discussion topic.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_ EVENTFACTS.ID
CLIENT_IP_	NULL	NUMBER(38)	Client IP ID dimension.	ASDIM_WC_ CLIENT__0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_ APPLICA_0.ID
USER_AGENT_	NULL	NUMBER(38)	User agent.	ASDIM_WC_ USER_AG_0.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
FORUM_	NULL	NUMBER(38)	Discussion forum associated with the event.	ASDIM_WC_DISCUSS_1.ID
SESSION_ID_	NULL	NVARCHAR2(254)	Session ID.	
TOPIC_	NULL	NUMBER(38)	Discussion topic associated with the event.	ASDIM_WC_DISCUSS_0.ID
REFERRER_	NULL	NUMBER(38)	Referrer ID dimension.	ASDIM_WC_REFERRE_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.7 ASFACT_WC_DISCUSS_1

Fact table that stores event information captured by Analytics when someone views an announcement.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
CLIENT_IP_	NULL	NUMBER(38)	Client IP ID dimension.	ASDIM_WC_CLIENT__0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
REFERRER_	NULL	NUMBER(38)	Referrer ID dimension.	ASDIM_WC_REFERRE_0.ID
USER_AGENT_	NULL	NUMBER(38)	User agent.	ASDIM_WC_USER_AG_0.ID
SESSION_ID_	NULL	NVARCHAR2(254)	Session ID.	
ANNOUNCEMENT_	NULL	NUMBER(38)	Announcement associated with the event.	ASDIM_WC_DISCUSS_3.ID

H.2.8 ASFACT_WC_DISCUSS_2

Fact table that stores event information captured by Analytics when someone creates a discussion forum.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_ EVENTFACTS.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_ GROUPSP_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_ APPLICA_0.ID
DISCUSSION_ FORUM_	NULL	NUMBER(38)	Discussion forum ID dimension.	ASDIM_WC_ DISCUSS_0.ID

H.2.9 ASFACT_WC_DISCUSS_3

Fact table that stores event information captured by Analytics when someone deletes a discussion forum.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_ EVENTFACTS.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_ GROUPSP_0.ID
DISCUSSION_ FORUM_	NULL	NUMBER(38)	Discussion forum ID dimension.	ASDIM_WC_ DISCUSS_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_ APPLICA_0.ID

H.2.10 ASFACT_WC_DISCUSS_4

Fact table that stores event information captured by Analytics when someone creates a discussion topic.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_ EVENTFACTS.ID
DISCUSSION_ TOPIC_	NULL	NUMBER(38)	Discussion topic ID dimension.	ASDIM_WC_ DISCUSS_0.ID
DISCUSSION_ MESSAGE_	NULL	NUMBER(38)	Discussion message ID dimension.	ASDIM_WC_ DISCUSS_2.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.11 ASFACT_WC_DISCUSS_5

Fact table that stores event information captured by Analytics when someone edits a discussion topic.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
DISCUSSION_TOPIC_	NULL	NUMBER(38)	Discussion topic ID dimension.	ASDIM_WC_DISCUSS_0.ID

H.2.12 ASFACT_WC_DISCUSS_6

Fact table that stores event information captured by Analytics when someone deletes a discussion topic.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
DISCUSSION_TOPIC_	NULL	NUMBER(38)	Discussion topic ID dimension.	ASDIM_WC_DISCUSS_0.ID

H.2.13 ASFACT_WC_DISCUSS_7

Fact table that stores event information captured by Analytics when someone tags a discussion topic.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
TAG_	NULL	NUMBER(38)	Tag ID dimension.	ASDIM_WC_TAGS_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
DISCUSSION_TOPIC_	NULL	NUMBER(38)	Discussion topic ID dimension.	ASDIM_WC_DISCUSS_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.14 ASFACT_WC_DISCUSS_8

Fact table that stores event information captured by Analytics when someone replies to a discussion topic message.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
DISCUSSION_MESSAGE_	NULL	NUMBER(38)	Discussion message ID dimension.	ASDIM_WC_DISCUSS_2.ID
DISCUSSION_TOPIC_	NULL	NUMBER(38)	Discussion topic ID dimension.	ASDIM_WC_DISCUSS_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.15 ASFACT_WC_DISCUSS_9

Fact table that stores event information captured by Analytics when someone likes a discussion topic message.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
DISCUSSION_MESSAGE_	NULL	NUMBER(38)	Discussion message ID dimension.	ASDIM_WC_DISCUSS_2.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
DISCUSSION_TOPIC_	NULL	NUMBER(38)	Discussion topic ID dimension.	ASDIM_WC_DISCUSS_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.16 ASFACT_WC_DISCUSS_A

Fact table that stores event information captured by Analytics when someone creates an announcement.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
DISCUSSION_ANNOUNCEMENT_	NULL	NUMBER(38)	Announcement ID dimension.	ASDIM_WC_DISCUSS_3.ID

H.2.17 ASFACT_WC_DISCUSS_B

Fact table that stores event information captured by Analytics when someone edits an announcement.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
DISCUSSION_ANNOUNCEMENT_	NULL	NUMBER(38)	Announcement ID dimension.	ASDIM_WC_DISCUSS_3.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.18 ASFACT_WC_DISCUSS_C

Fact table that stores event information captured by Analytics when someone deletes an announcement.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
DISCUSSION_FORUM_	NULL	NUMBER(38)	Discussion forum ID dimension.	ASDIM_WC_DISCUSS_1.ID

H.2.19 ASFACT_WC_DOCLIB__0

Fact table that stores event information captured by Analytics when someone views a document.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	DATE	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
RESPONSE_TIME_	NULL	NUMBER(16)	Response Time (ms).	
CLIENT_IP_	NULL	NUMBER(38)	Client IP ID dimension.	ASDIM_WC_CLIENT__0.ID
SESSION_ID_	NULL	NVARCHAR2(254)	Session ID.	
GROUPSPACE	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
REFERRER	NULL	NUMBER(38)	Referrer ID dimension.	ASDIM_WC_REFERRE_0.ID
DOCUMENT	NULL	NUMBER(38)	Document ID dimension.	ASDIM_WC_DOCUMENT_0.ID
USER_AGENT	NULL	NUMBER(38)	User agent.	ASDIM_WC_USER_AG_0.ID
APPLICATION	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.20 ASFACT_WC_DOCLIB__1

Fact table that stores event information captured by Analytics when someone downloads a document.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	DATE	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
DOCUMENT	NULL	NUMBER(38)	Document ID dimension.	ASDIM_WC_DOCUMENT_0.ID
REFERRER_	NULL	NUMBER(38)	Referrer ID dimension.	ASDIM_WC_REFERRE_0.ID
CLIENT_IP_	NULL	NUMBER(38)	Client IP ID dimension.	ASDIM_WC_CLIENT__0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
USER_AGENT_	NULL	NUMBER(38)	User agent.	ASDIM_WC_USER_AG_0.ID
SESSION_ID_	NULL	NVARCHAR2(254)	Session ID.	
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.21 ASFACT_WC_DOCLIB__2

Fact table that stores event information captured by Analytics when someone creates document.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	DATE	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
WEBCENTER_RESOURCE_	NULL	NUMBER(38)	WebCenter Portal resource ID.	
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.22 ASFACT_WC_DOCLIB__3

Fact table that stores event information captured by Analytics when someone edits a document.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_ USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_ EVENTFACTS.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_ GROUPSP_0.ID
WEBCENTER_ RESOURCE_	NULL	NUMBER(38)	WebCenter Portal resource ID.	
APPLICATION _	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_ APPLICA_0.ID

H.2.23 ASFACT_WC_DOCLIB__4

Fact table that stores event information captured by Analytics when someone tags a document.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_ USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_ EVENTFACTS.I D
TAGS	NULL	NUMBER(38)	Tag added to the document.	
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_ GROUPSP_0.ID
WEBCENTER_ RESOURCE_	NULL	NUMBER(38)	WebCenter Portal resource ID.	
APPLICATION _	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_ APPLICA_0.ID

H.2.24 ASFACT_WC_DOCLIB__5

Fact table that stores event information captured by Analytics when someone "likes" a document.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
WEBCENTER_RESOURCE_	NULL	NUMBER(38)	WebCenter Portal resource ID.	

H.2.25 ASFACT_WC_DOCLIB__6

Fact table that stores event information captured by Analytics when someone comments on a document.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
WEBCENTER_RESOURCE_	NULL	NUMBER(38)	WebCenter Portal resource ID.	
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.26 ASFACT_WC_DOCLIB__7

Fact table that stores event information captured by Analytics when someone deletes a document.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
WEBCENTER_RESOURCE_	NULL	NUMBER(38)	WebCenter Portal resource ID.	

H.2.27 ASFACT_WC_EVENT_C_0

Fact table that stores event information captured by Analytics when someone creates an event in a portal.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
EVENT_	NULL	NUMBER(38)	Event Identifier.	ASDIM_WC_EVENTS_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.28 ASFACT_WC_EVENT_D_0

Fact table that stores event information captured by Analytics when someone deletes an event from a portal.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
EVENT_	NULL	NUMBER(38)	Event Identifier.	ASDIM_WC_EVENTS_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.29 ASFACT_WC_EVENT_E_0

Fact table that stores event information captured by Analytics when someone edits and event in a portal.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
EVENT_	NULL	NUMBER(38)	Event Identifier.	ASDIM_WC_EVENTS_0.ID

H.2.30 ASFACT_WC_GROUPSP_0

Fact table that stores event information captured by Analytics when someone views a portal.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
CLIENT_IP_	NULL	NUMBER(38)	Client IP ID dimension.	ASDIM_WC_CLIENT__0.ID
SESSION_ID_	NULL	NVARCHAR2(254)	Session ID.	
RESPONSE_TIME_	NULL	NUMBER(16)	Response time (ms).	
REFERRER_	NULL	NUMBER(38)	Referrer ID dimension.	ASDIM_WC_REFERRE_0.ID
USER_AGENT_	NULL	NUMBER(38)	User agent.	ASDIM_WC_USER_AG_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.31 ASFACT_WC_GROUPSP_1

Fact table that stores event information captured by Analytics when someone creates a portal.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.32 ASFACT_WC_GROUPSP_2

Fact table that stores event information captured by Analytics when someone joins a portal.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.33 ASFACT_WC_GROUPSP_3

Fact table that stores event information captured by Analytics when someone deletes a portal.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.34 ASFACT_WC_LIST_CR_0

Fact table that stores event information captured by Analytics when someone creates a list.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
LIST_	NULL	NUMBER(38)	List ID.	ASDIM_WC_LISTS_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

H.2.35 ASFACT_WC_LIST_DE_0

Fact table that stores event information captured by Analytics when someone deletes a list.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
LIST_	NULL	NUMBER(38)	List ID.	ASDIM_WC_LISTS_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.36 ASFACT_WC_LIST_ED_0

Fact table that stores event information captured by Analytics when someone edits a list.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
LIST_	NULL	NUMBER(38)	List ID.	ASDIM_WC_LISTS_0.ID
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.2.37 ASFACT_WC_LOGINS_0

Fact table that stores login event information captured by Analytics with related data for each event.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
SESSION_ID_	NULL	NVARCHAR2(254)	Session ID	
USER_AGENT_	NULL	NUMBER(38)	User agent.	ASDIM_WC_USER_AG_0.ID
REFERRER_	NULL	NUMBER(38)	Referrer ID dimension.	ASDIM_WC_REFERRE_0.ID
CLIENT_IP_	NULL	NUMBER(38)	Client IP ID dimension.	ASDIM_WC_CLIENT__0.ID

H.2.38 ASFACT_WC_PEOPLEC_0

Fact table that stores event information captured by Analytics when someone adds a people connection.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
TARGET_USER	NULL	NUMBER(38)	User ID	

H.2.39 ASFACT_WC_PEOPLEC_1

Fact table that stores event information captured by Analytics when someone posts on a wall.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
TARGET_USER	NULL	NUMBER(38)	User ID.	

H.2.40 ASFACT_WC_PEOPLEC_2

Fact table that stores event information captured by Analytics when someone edits a profile.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID

H.2.41 ASFACT_WC_PEOPLEC_3

Fact table that stores event information captured by Analytics when someone edits status information.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID

H.2.42 ASFACT_WC_PORTLET_0

Fact table that stores information captured by Analytics when portlets are accessed by end users.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
CACHED_	NULL	NUMBER(5)	Indicates whether the portlet was displayed from the cache.	
PORTLET_	NULL	NUMBER(38)	Portlet.	ASDIM_WC_PORTLET_1.ID
REFERRER_	NULL	NUMBER(38)	Referrer ID dimension.	ASDIM_WC_REFERRE_0.ID
PRODUCER_	NULL	NUMBER(38)	Portlet producer.	ASDIM_WC_PRODUCE_0.ID
PAGE_	NULL	NUMBER(38)	Page ID dimension.	ASDIM_WC_PAGES_0.ID
SESSION_ID_	NULL	NVARCHAR2 (254)	Session ID.	
CLIENT_IP	NULL	NUMBER(38)	Client IP ID dimension.	ASDIM_WC_CLIENT__0.ID
PORTLET_INSTANCE_	NULL	NUMBER(38)	Portlet instance.	
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID
RESPONSE_TIME_	NULL	NUMBER(16)	Response time (ms).	
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
USER_AGENT_	NULL	NUMBER(38)	User agent.	ASDIM_WC_USER_AG_0.ID

H.2.43 ASFACT_WC_SEARCHE_0

Fact table that stores event information captured by Analytics when someone performs a search.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
OCURRED	NOT NULL	DATE	Date event occurred.	
TIMEID	NOT NULL	NUMBER(38)	Time dimension event occurred. This column is used for partitioning.	ASDIM_TIME.ID
USERID	NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASSYS_EVENTFACTS.ID
PAGE_	NULL	NUMBER(38)	Page ID dimension.	ASDIM_WC_PAGES_0.ID
USER_AGENT_	NULL	NUMBER(38)	User agent.	ASDIM_WC_USER_AG_0.ID
CLIENT_IP_	NULL	NUMBER(38)	Client IP ID dimension.	ASDIM_WC_CLIENT__0.ID
APPLICATION_	NULL	NUMBER(38)	Application ID dimension.	ASDIM_WC_APPLICA_0.ID
SESSION_ID_	NULL	NVARCHAR2 (254)	Session ID.	
REFERRER_	NULL	NUMBER(38)	Referrer ID dimension.	ASDIM_WC_REFERRE_0.ID
SEARCHED_PHRASE	NULL	NUMBER(38)	Search phrase.	
GROUPSPACE_	NULL	NUMBER(38)	Portal ID dimension.	ASDIM_WC_GROUPSP_0.ID

H.3 Analytics Dimension Table Descriptions

Analytics dimension tables are created when the Analytics Collector runs for the first time. Dimension tables store redundant descriptive data associated with analytics events. When a value is not found in these tables, a new record is added. Typical analytics dimension data includes: page name, browser name, document name, portal name, and so on.

This section describes each of the tables listed in Table H–2, " Analytics Dimension Tables (Prefixed ASDIM_WC)".

H.3.1 ASDIM_WC_APPLICA_0

Dimension table that stores the names of WebCenter Portal applications accessing analytics data, for example `webcenter` (a portal).

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
NAME_	NOT NULL	NVARCHAR2(254)	Application name.	

H.3.2 ASDIM_WC_CLIENT__0

Dimension table that stores client IP address details captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
IP	NOT NULL	NVARCHAR2(15)	Client IP address	

H.3.3 ASDIM_WC_DISCUSS_0

Dimension table that stores discussion topic details captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
ICONURL_	NULL	NVARCHAR2(254)	Icon URL	
NAME_	NULL	NVARCHAR2(254)	Discussion topic name.	
DESCRIPTION_	NULL	NVARCHAR2(254)	Discussion topic description.	
RESOURCEID_	NOT NULL	NVARCHAR2(254)	WebCenter Portal resource ID.	

H.3.4 ASDIM_WC_DISCUSS_1

Dimension table that stores discussion forum details captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
ICONURL_	NULL	NVARCHAR2(254)	Icon URL	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
DESCRIPTION_	NULL	NVARCHAR2(254)	Discussion forum description.	
RESOURCEID_	NOT NULL	NVARCHAR2(254)	WebCenter Portal resource ID.	
NAME_	NULL	NVARCHAR2(254)	WebCenter Portal resource name, that is, the name of the discussion forum.	

H.3.5 ASDIM_WC_DISCUSS_2

Dimension table that stores discussion message details captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date records last modified.	
NAME_	NULL	NVARCHAR2(254)	WebCenter Portal resource name, that is, the name of the discussion message.	
RESOURCEID_	NOT NULL	NVARCHAR2(254)	WebCenter Portal resource ID.	
DESCRIPTION_	NULL	NVARCHAR2(254)	Discussion message description.	
ICONURL_	NULL	NVARCHAR2(254)	Icon URL	

H.3.6 ASDIM_WC_DISCUSS_3

Dimension table that stores announcement details captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
DESCRIPTION_	NULL	NVARCHAR2(254)	Announcement description.	
ICONURL_	NULL	NVARCHAR2(254)	Icon URL	
RESOURCEID_	NOT NULL	NVARCHAR2(254)	WebCenter Portal resource ID.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
NAME_	NULL	NVARCHAR2(254)	WebCenter Portal resource name, that is, name of the announcement.	

H.3.7 ASDIM_WC_DOCUMENT_0

Dimension table that stores information captured by Analytics when documents are accessed by end users.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
CONTENTTYPE _	NULL	NVARCHAR2(254)	Document content type.	
CONTEXT	NULL	NVARCHAR2(512)	Document prefix (for identification purposes): ■ Document prefix - Folder URL for parent portal ■ Blog prefix - Blog title name ■ Wiki prefix - Wiki title name	
NAME_	NULL	NVARCHAR2(254)	Document name.	
RESOURCEID_	NOT NULL	NVARCHAR2(254)	WebCenter Portal resource ID.	
DESCRIPTION_	NULL	NVARCHAR2(254)	Document description.	
ICONURL_	NULL	NVARCHAR2(254)	Icon URL	
PATH_	NULL	NVARCHAR2(512)	Document path.	
OBJECTTYPE_	NULL	NVARCHAR2(254)	Object type.	

H.3.8 ASDIM_WC_EVENTS_0

Dimension table that stores information about portal events captured by Analytics when a user creates an event in his or her calendar.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
RESOURCEID_	NOT NULL	NVARCHAR2(254)	WebCenter Portal resource ID.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
NAME_	NULL	NVARCHAR2(254)	WebCenter Portal resource name, that is, the name of the portal event.	

H.3.9 ASDIM_WC_GROUPSP_0

Dimension table that stores information captured by Analytics when a portal is accessed by an end user (WebCenter Portal only).

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
ICONURL_	NULL	NVARCHAR2(254)	Icon URL	
DESCRIPTION_	NULL	NVARCHAR2(254)	Description.	
PERSONAL_	NULL	NUMBER(5)	Indicates whether the portal is the Home portal (0) or a group space (1).	
RESOURCEID_	NOT NULL	NVARCHAR2(254)	WebCenter Portal resource ID.	
NAME_	NULL	NVARCHAR2(254)	Name of the portal.	

H.3.10 ASDIM_WC_LISTS_0

Dimension table that stores list details captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
NAME_	NULL	NVARCHAR2(254)	WebCenter Portal resource name, that is, the name of the list.	
RESOURCEID_	NOT NULL	NVARCHAR2(254)	WebCenter Portal resource ID.	

H.3.11 ASDIM_WC_PAGES_0

Dimension table that stores information captured by Analytics when pages are accessed by end users.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
PERSONAL_	NULL	NUMBER(5)	Indicates whether the page is a personal page (in the Home portal) or belongs to a portal.	
RESOURCEID_	NOT NULL	NVARCHAR2(254)	WebCenter Portal resource ID. The full page path, for example, `/oracle/webcenter/page/sda254765_f950/Home.jspx`	
NAME_	NULL	NVARCHAR2(254)	Name of the page.	

H.3.12 ASDIM_WC_PORTLET_0

Dimension table that stores information captured by Analytics when portlets are accessed by end users.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record modified.	
DEFAULT_TITLE_	NULL	NVARCHAR2(254)	Default portlet title.	
RESOURCEID_	NOT NULL	NVARCHAR2(512)	WebCenter Portal resource ID.	

H.3.13 ASDIM_WC_PORTLET_1

Dimension table that stores portlet instance information captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
TITLE_	NULL	NVARCHAR2(254)	Portlet title.	
RESOURCEID_	NOT NULL	NVARCHAR2(512)	WebCenter Portal resource ID.	

H.3.14 ASDIM_WC_PRODUCE_0

Dimension table that stores portlet producer information captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record modified.	
RESOURCEID_	NOT NULL	NVARCHAR2(512)	WebCenter Portal resource ID.	
NAME_	NULL	NVARCHAR2(254)	Producer name.	

H.3.15 ASDIM_WC_REFERRE_0

Dimension table that stores information captured by Analytics related to the location (URL) to which the user was navigating when the analytics event was captured.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
URL	NOT NULL	NVARCHAR2(2000)	Referred URL	

H.3.16 ASDIM_WC_SEARCHE_0

Dimension table that stores search phrases captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
PHRASE	NOT NULL	NVARCHAR2(254)	Search phrase.	

H.3.17 ASDIM_WC_TAGS_0

Dimension table that stores tag information captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
VALUE	NOT NULL	NVARCHAR2(254)	Tag value.	

H.3.18 ASDIM_WC_USER_AG_0

Dimension table that stores information about which browsers are used to access analytics data.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
OS	NULL	NVARCHAR2(100)	Operating system.	
AGENT	NOT NULL	NVARCHAR2(512)	User agent ID.	
BROWSER	NULL	NVARCHAR2(255)	Name of the browser.	
BROWSER_VERSION	NULL	NVARCHAR2(30)	Browser version.	

H.3.19 ASDIM_TIME

Dimension table that stores times used to group analytics reports. An entry is created every hour. analytics reports use this table to group data within a specific time frame.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
PERIODSTART	NULL	DATE	Current period start.	
PERIODEND	NULL	DATE	Current period end.	
HOUROFDAY	NULL	NUMBER(5)	Hour corresponding to this time period.	
DAYOFMONTH	NOT NULL	NUMBER(5)	Current day of the month.	
DAYOFYEAR	NULL	NUMBER(5)	Current day of the year.	
WEEKOFYEARSUNDAY	NULL	NUMBER(5)	Week number of Sunday year.	
WEEKOFYEARMONDAY	NULL	NUMBER(5)	Week number of Monday year.	
WEEKOFYEARSATURDAY	NULL	NUMBER(5)	Week number of Saturday year.	
MONTHOFYEAR	NOT NULL	NUMBER(5)	Month corresponding to the period's year.	
YEAR	NOT NULL	NUMBER(5)	Current year.	

H.3.20 ASDIM_USERS

Dimension table that stores user details captured by Analytics when an analytics event is received.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
USERID	NOT NULL	NVARCHAR2(255)	User ID. For example: `weblogic`	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	

H.3.21 ASDIM_USERPROPERTIES

Dimension table that stores user properties, such as Title, Department, and so on.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
PROPERTYID	NOT NULL	NUMBER(38)	Property ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NULL	DATE	Date record last modified.	
NAME	NOT NULL	NVARCHAR2(255)	Property name.	

H.3.22 ASDIM_USERPROPERTYVALUES

Dimension table that stores values for user properties.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
USERID	NOT NULL	NUMBER(38)	User ID dimension.	ASDIM_USERS.ID
PROPERTYID	NOT NULL	NUMBER(38)	Property ID.	ASDIM_USERPROPERTIES.ID
VALUE	NULL	NVARCHAR2(255)	Property ID value.	
TYPE	NULL	NUMBER(38)	Property type.	

H.4 Analytics System Table Descriptions

System tables are created during installation to store application information such as system configuration parameters. Each table is described in this section.

H.4.1 ASSYS_CONFIG

System table that stores system configuration information. Each row contains value pairs—configuration type/value.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
NAME	NULL	NVARCHAR2(510)	Name of configuration parameter, for example, collector_port.	
CONFIGTYPEID	NOT NULL	NUMBER(38)	Configuration type ID.	
INTVAL	NULL	NUMBER(38)	Integer value associated with the configuration.	
STRVAL	NULL	NVARCHAR2(2000)	String value associated with the configuration.	

H.4.2 ASSYS_DIMENSIONPROPS

System table that stores dimension configuration information. Each row represents property values for a dimension.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
DIMENSIONID	NOT NULL	NUMBER(38)	Dimension ID.	ASSYS_EVENTDIMENSIONS.ID
DISPAYNAME	NOT NULL	NVARCHAR2(510)	Dimension property display name.	
COLUMNNAME	NOT NULL	NVARCHAR2(510)	Column name.	
COLUMNTYPE	NULL	NUMBER(38)	Column type.	
COLUMNLENGTH	NULL	NUMBER(38)	Column length.	
ISKEY	NULL	NUMBER(38)	Indicates whether this is a key dimension property.	

H.4.3 ASSYS_EVENTDIMENSIONS

System table that stores dimensions associated with each analytics event.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
DISPAYNAME	NOT NULL	NVARCHAR2(510)	Dimension event display name.	
TABLENAME	NOT NULL	NVARCHAR2(510)	Table name associated with the dimension.	
ISUNIQUE	NULL	NUMBER(38)	Deprecated.	
IDENTIFYINGUSER	NOT NULL	NUMBER(38)	User ID.	ASDIM_USERS.ID

H.4.4 ASSYS_EVENTFACTS

System table that stores facts associated with each analytics event.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
EVENTID	NULL	NUMBER(38)	Event ID dimension.	ASDIM_WC_EVENTS_0.ID
DISPAYNAME	NOT NULL	NVARCHAR2(510)	Event fact display name.	
COLUMNNAME	NOT NULL	NVARCHAR2(510)	Event fact column name.	
COLUMNTYPEID	NULL	NUMBER(38)	Indicates the data type of the event fact: INTEGER (1), STRING (2), DATE (3), FLOAT (4), BOOLEAN (5) If the event fact is a dimension, COLUMNTYPEID is -1.	
COLUMNLENGTH	NULL	NUMBER(38)	User ID.	
EVENTDIMENSIONID	NULL	NUMBER(38)	Dimension ID.	ASSYS_EVENTDIMENSIONS.ID

H.4.5 ASSYS_EVENTS

System table that stores the different analytics events representing *one* user action that is captured. Both out-of-the-box analytics events and custom (user-defined) analytics events are stored. Each row represents the event captured with its associated data such as active status, and table name where data is stored.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
DISPAYNAME	NOT NULL	NVARCHAR2(510)	Event fact display name.	
DESCRIPTION	NULL	NVARCHAR2(510)	Event description.	
TABLENAME	NOT NULL	NVARCHAR2(510)	Table name.	
ISCUSTOM	NOT NULL	NUMBER(38)	Indicates whether or not the event is a custom event. (0/1)	
ISACTIVE	NOT NULL	NUMBER(38)	Deprecated.	
ISPERSISTENT	NOT NULL	NUMBER(38)	Indicates whether or not to create a fact table for the event. (0/1)	
ISACTION	NOT NULL	NUMBER(38)	Not used.	

H.4.6 ASSYS_NAMESPACES

System table that stores the different namespaces in which analytics events are registered.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
PREFIX	NOT NULL	NVARCHAR2(510)	Namespace prefix.	
URI	NOT NULL	NVARCHAR2(510)	Universal resource identifier for the namespace.	

H.4.7 ASSYS_REPORTCOMPOSITION

System table that stores the composition for reports provided by Analytics.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
PARENTREPORTID	NOT NULL	NUMBER(38)	Reference to parent report ID.	ASSYS_ REPORTS.ID
CHILDREPORTID	NOT NULL	NUMBER(38)	Reference to child report ID.	ASSYS_ REPORTS.ID
SEQUENCE	NULL	NUMBER(10)	Sequence of report composition.	
NAME	NOT NULL	NVARCHAR2(510)	Name of report composition.	
DESCRIPTION	NULL	NVARCHAR2(510)	Description of report composition.	

H.4.8 ASSYS_REPORTGROUP

System table that stores the report groups included for Analytics. Report groups enable end users to display analytics data in a specific way.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record was last modified.	
NAME	NOT NULL	NVARCHAR2(510)	Report group name.	
DESCRIPTION	NULL	NVARCHAR2(510)	Report group description.	
SEQUENCE	NULL	NUMBER(10)	Sequence.	

H.4.9 ASSYS_REPORTITEMS

System table that stores item information in each report. Each row represents a specific item belonging to one report.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
REPORTID	NOT NULL	NUMBER(38)	Report ID.	ASSYS_ REPORTS.ID
ITEMTYPE	NOT NULL	VARCHAR2(30)	Item type.	
ITEMDESCRIPTION	NULL	NVARCHAR2(510)	Item description.	
ITEMVALUE	NULL	NUMBER(5)	Item value.	
EVENTDIMENSIONID	NULL	NUMBER(38)	Dimension ID.	ASSYS_ EVENTDIMENSIONS.ID

Column Name	NOT NULL?	Data Type	Description	Foreign Key
EVENTDIMENSIONNAME	NULL	NVARCHAR2(510)	Dimension name.	
EVENTFACTID	NULL	NUMBER(38)	Event fact ID.	ASSYS_EVENTFACTS.ID
EVENTFACTNAME	NULL	NVARCHAR2(510)	Event fact name.	
PROPERTYNAME	NULL	NVARCHAR2(510)	The name of the column in the dimension table to be selected in the query performed, for example, name or ID.	
AGGREGATEFUNCTION	NULL	VARCHAR2(60)	SQL function for grouping purposes (AVG, MIN, MAX, COUNT, COUNT DISTINCT).	
DISPLAYFLAG	NOT NULL	NUMBER(5)	Indicates whether or not to display the item in the report. (0/1)	
IDENTIFIERFLAG	NOT NULL	NUMBER(5)	Indicates whether or not to use this item as an identifier (SQL: whether or not to group by this column). (0/1)	

H.4.10 ASSYS_REPORTITEMVALUES

System table that stores the values associated to each item in a report. Each row represents a specific value (char, float or date) for one report item instance.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
REPORTITEMID	NOT NULL	NUMBER	Report item ID.	ASSYS_REPORTITEMS.ID
VALUETYPE	NOT NULL	VARCHAR2(30)	Value type: CVALUE, NVALUE or DVALUE.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
CVALUE	NULL	NVARCHAR2(510)	Char value.*	
NVALUE	NULL	NUMBER	Numeric value.*	
DVALUE	NULL	DATE	Date value.*	

*Only one of CVALUE, NVALUE or DVALUE has a value.

H.4.11 ASSYS_REPORTS

System table that stores the different out-of-the-box reports to be provided by Analytics. Each row represents a single report and the report's configuration.

Column Name	NOT NULL?	Data Type	Description	Foreign Key
ID	NOT NULL	NUMBER(38)	Internal table ID.	
CREATED	NOT NULL	DATE	Date record created.	
LASTMODIFIED	NOT NULL	DATE	Date record last modified.	
NAME	NOT NULL	NVARCHAR2(510)	Report item ID.	
DESCRIPTION	NULL	NVARCHAR2(255)	Report description.	
SEQUENCE	NULL	NUMBER(10)	Sequence.	
GROUPID	NULL	NUMBER (38)	Group ID for the report.	ASSYS_REPORTGROUP.ID
EVENTTYPEID	NULL	NUMBER(38)	Associated event ID.	ASSYS_EVENTS.ID
EVENTDISPLAYNAME	NULL	NVARCHAR2(510)	Denormalized. Display name of associated event.	
GROUPSPACEFILTERENABLED	NOT NULL	VARCHAR2(1)	Indicates whether users can filter the report 'by portal'. If set to true (1), the report displays the portal selector UI.	
DEFAULTCHARTSTYLE	NULL	NVARCHAR2(255)	Default chart style for the report.	
DEFAULTCHARTTYPE	NULL	NUMBER(2)	Default chart type.	
DEFAULTDISPLAYCOUNT	NULL	NUMBER(2)	Default display count.	
DEFAULTTIMEFRAME	NULL	NUMBER(2)	Default time frame.	
DEFAULTGROUPBYTIMEINTERVAL	NULL	NUMBER(2)	Default group time interval.	
DEFAULTGROUPBYUSERPROPERTY	NULL	NUMBER(38)	Default "group by user" property.	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
SHOWMETRICSELECTOR	NOT NULL	NVARCHAR2(1)	Indicates whether or not to display selector UI for this metric. (Y/N)	
SHOWCHARTTYPEOPTIONS	NOT NULL	NVARCHAR2(1)	Indicates whether or not to display chart type options in the UI. (Y/N)	
SHOWDISPLAYOPTIONS	NOT NULL	NVARCHAR2(1)	Indicates whether or not the field to select display options will be shown in the UI. (Y/N) (The field is a drop-down list to select between: Top n, Bottom n, All records, or List of specific records.)	
SHOWDISPLAYTOPOPTION	NOT NULL	NVARCHAR2(1)	Indicates whether or not users will be able to select the "Top n" option. (Y/N) If N, the "Top n" option will not be available in the combo box.	
SHOWDISPLAYBOTTOMOPTION	NOT NULL	NVARCHAR2(1)	Indicates whether or not users will be able to select the "Bottom n" option. (Y/N) If N, the "Bottom n" option will not be available in the combo box.	
SHOWDISPLAYALLOPTION	NOT NULL	NVARCHAR2(1)	Indicates whether or not users will be able to select the "All records" option. (Y/N) If N, the "All records" option will not be available in the combo box, and users will only be able to select from Top n, Bottom n or a list of specific records.	
SHOWOBJECTPICKER	NOT NULL	NVARCHAR2(1)	Indicates whether or not users will be able to select a list of specific records option. (Y/N) If N, the "Select ..." option will not be available in the combo box. If Y the "Select ..." option will be available and a picker dialog will be displayed to select the list of objects to be included in the report.	
SHOWTIMEFRAMEFILTER	NOT NULL	NVARCHAR2(1)	Indicates whether or not to display time frame filter. (Y/N)	

Column Name	NOT NULL?	Data Type	Description	Foreign Key
SHOWUSERPROPERTYFILTER	NOT NULL	NVARCHAR2(1)	Indicates whether or not to display user property filter (Y/N).	
SHOWGROUPBYOPTIONS	NOT NULL	NVARCHAR2(1)	Indicates whether or not to display "group by" options. (Y/N)	
COMPOSEDREPORT	NOT NULL	NVARCHAR2(1)	Indicates whether this is a composed report.	
PORTLETTYPEID	NULL	NUMBER(38)	Portlet type ID.	

H.5 Analytics User Properties

Analytics uses several tables to store information about users who are triggering analytics events in WebCenter Portal applications. This section contains the following topics:

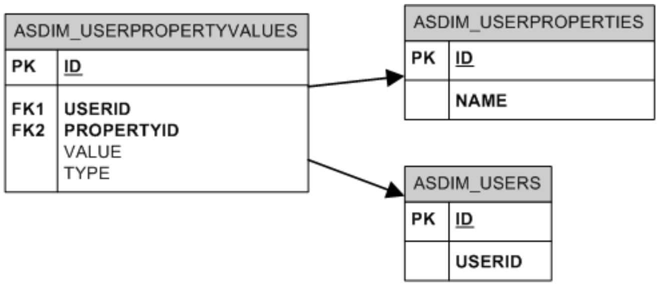
- Section H.5.1, "User Property Tables - Overview"
- Section H.5.2, "User Property Dimension Tables"
- Section H.5.3, "Out-of-the-Box User Properties for WebCenter Portal"

For sample queries related to user properties, see Section 47.3.3, "Sample Queries for User Metrics" in Chapter 47, "Integrating Analytics."

H.5.1 User Property Tables - Overview

Figure H–5 shows the database model used by Analytics to store information about users. The user dimension table has a single property column (USERID). In addition, there are two other tables (ASDIM_USERPROPERTIES and ASDIM_USERPROPERTYVALUES) that store user properties as key-value data. This model enables additional user properties to be added without changing the user dimension definition.

Figure H–5 User Property Dimensions for Analytics



The ASDIM_USERPROPERTIES table stores the names of user properties received by Analytics. User properties (attributes of the user including name, position, email, address, etc.) are captured by Analytics as an event when a user logs in to WebCenter Portal, not when the properties are modified. If a user changes a property, the value of the property will be updated in analytics the next time the user logs in.

The ASDIM_PROPERTYVALUES table stores one row per property, per user, where each row corresponds to a value for a property associated with a specific user.

H.5.2 User Property Dimension Tables

User property dimension tables are described in the following topics:

- Section H.5.2.1, "ASDIM_USERPROPERTIES"
- Section H.5.2.2, "ASDIM_USERPROPERTYVALUES"

H.5.2.1 ASDIM_USERPROPERTIES

Dimension table that stores the names of user properties received by Analytics.

Column Name	Data Type	Description
ID	NUMBER(38,0)	Table primary key. Value obtained from the sequence.
NAME	VARCHAR(255)	Name of the user property. Names are converted to uppercase and whitespace characters are removed.

H.5.2.2 ASDIM_USERPROPERTYVALUES

Dimension table that stores one row per property per user, where each row corresponds to a value for a property associated with a specific user.

Column Name	Data Type	Description
ID	NUMBER(38,0)	Table primary key. Value obtained from the sequence.
USERID	NUMBER(38,0)	Foreign key to the ASDIM_USERS table.
PROPERTYID	NUMBER(38,0)	Foreign key to the ASDIM_USERPROPERTIES table.
VALUE	VARCHAR(255)	The value of a particular property (identified by the PROPERTYID column) for a particular user (identified by the USERID column). For example, if the property is "CITY" and the user "weblogic", this column will be storing the city name where that user works (for example "San Francisco").
TYPE	NUMBER(38,0)	User property value type. (Property values are always stored as strings.)

H.5.3 Out-of-the-Box User Properties for WebCenter Portal

WebCenter Portal applications send a specific set of user properties to Analytics, as shown in Table H–4.

Note: WebCenter Portal applications can only send properties that are set by the user or available in the user directory. If a property value is blank, no row is created for it in the ASDIM_USERPROPERTYVALUES table for that user.

Table H–4 Out-of-the-Box User Properties for WebCenter Portal

Property Name	Property Label (displayed in reports)	Example Value
IMUSER	IM User	dfrabott
DISPLAYNAME	Display	Diego Frabotta
PHONE	Phone	+5411-2222-1234
TITLE	Title	Software Engineer
DEPARTMENT	Department	Analytics
MANAGER	Manager	uid=dsabaris,cn=users,dc=us,dc=myco,dc=com
COMPANY	Company	MyCo
STREET	Street	Parque Austral, Edificio Insignia M3
ZIPCODE	ZIP Code	12345
STATEORPROVINCE	State or Province	Buenos Aires
COUNTRY	Country	Argentina
EMPLOYEEID	Employee Id	55555
CITY	City	Pilar

H.6 Analytics Event and Dimension Data Types

Table H–5 shows how analytics event and dimension data types map to data types in Oracle, Microsoft SQL Server, and IBM DB2 databases.

Table H–5 Analytics Event and Dimension Data Types

Analytics Event and Dimension Type	Oracle	Microsoft SQL Server	IBM DB2
INTEGER	NUMBER	BIGINT	INTEGER
STRING	NVARCHAR	NVARCHAR	VARGRAPHIC
DATE	DATE	DATETIME	TIMESTAMP
FLOAT	FLOAT	FLOAT	DECFLOAT
BOOLEAN	NUMBER(5)	TINYINT	SMALLINT

I

WebCenter Portal Accessibility Features

This appendix describes the accessibility features of WebCenter Portal.

This appendix contains the following topic:

- Section I.1, "Overview of WebCenter Accessibility Features"

I.1 Overview of WebCenter Accessibility Features

Accessibility involves making your application usable by persons with disabilities such as low vision or blindness, deafness, or other physical limitations. In the simplest of terms, this means creating applications that can be used without a mouse (keyboard only), used with a screen reader for blind or low-vision users, and used without reliance on sound, color, or animation and timing.

Oracle software implements the standards of Section 508 and WCAG 1.0 AA using an interpretation of the standards at `http://www.oracle.com/accessibility/standards.html`.

This section describes accessibility features that are specific to WebCenter Portal. For general information about creating accessible ADF Faces pages, see the "Specifying Component-Level Accessibility Properties" section in *Web User Interface Developer's Guide for Oracle Application Development Framework.* For information about accessibility features in JDeveloper, see the help topics available by selecting the JDeveloper Accessibility node under JDeveloper Basics in the online help table of contents.

I.1.1 Generating Accessible HTML

WebCenter Portal provides several Composer components that you can add to your application pages to make them editable at runtime. These components provide attributes that are used to generate accessible HTML. To ensure that the pages you create are accessible, you must set these attributes, listed in Table I–1.

Table I–1 Accessibility Attributes for WebCenter Portal's Composer Components

Component	Accessibility Attributes
`pe:changeModeButton`	No accessibility attributes.
`pe:changeModeLink`	No accessibility attributes.
`pe:imageLink`	`shortDesc`—Mandatory. This attribute transforms into an HTML `alt` attribute. `accessKey`—Optional. This attribute sets the mnemonic character used to gain quick access to the component.
`pe:pageCustomizable`	No accessibility attributes

Table I–1 (Cont.) Accessibility Attributes for WebCenter Portal's Composer Components

Component	Accessibility Attributes
`pe:layoutCustomizable`	`shortDesc`—Mandatory. This attribute transforms into an HTML `alt` attribute. `accessKey`—Optional. This attribute sets the mnemonic character used to gain quick access to the component.
`cust:panelCustomizable`	No accessibility attributes
`cust:showDetailFrame`	`shortDesc`—Mandatory. This attribute transforms into an HTML `alt` attribute.

I.1.2 Accessibility Features at Runtime

When you enable users to customize a page at runtime, you must ensure that any customizations are also accessible to all users. For all components that users can create at runtime, all accessibility-related attributes are shown in the Property Inspector where users can set them appropriately.

For a list of accessibility-related attributes for WebCenter Portal-specific components, see Table I–1. For a list of accessibility-related attributes for other components, see the "Specifying Component-Level Accessibility Properties" section in *Web User Interface Developer's Guide for Oracle Application Development Framework.*

I.1.3 Accessibility Considerations for Portlets

IFrames are not very well accommodated by today's screen readers and so are not permitted by some accessibility standards.

> **Note:** Portlets created using the Oracle JSF Portlet Bridge have the `requireIFrame` container runtime option set to `true` as these portlets are too complex to render directly on Oracle ADF pages due to JavaScript issues.

WebCenter Portal provides an optional attribute in the `adf:portlet` tag called `renderPortletInIFrame`. You can set this attribute to false to avoid ever using IFrames. For detailed information, see Section 63.5.4, "What You May Need to Know About Inline Frames."