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User's Guide for Oracle Business Process Management

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Contents

Preface	ix
Audience	ix
Documentation Accessibility	ix
Related Documents	x
Conventions	x
1 Oracle Business Process Management Suite (Oracle BPM Suite) Overview	
1.1 Introduction to the Oracle BPM Suite	1-1
1.2 Oracle BPM User Personas	1-2
1.3 Oracle BPM Suite Components	1-4
1.3.1 Process Modeling and Implementation	1-4
1.3.1.1 Oracle BPM Studio	1-4
1.3.1.2 Oracle Business Process Composer (Business Process Composer)	1-4
1.3.1.3 Oracle Metadata Service (MDS)	1-5
1.3.1.4 Oracle BPM Projects	1-5
1.3.2 Oracle BPM Run Time Components	1-5
1.3.2.1 Oracle BPM Engine	1-6
1.3.2.2 Oracle Human Workflow	1-6
1.3.2.3 Oracle Business Rules	1-6
1.3.2.4 Oracle WebLogic Server	1-6
1.3.2.5 Oracle Enterprise Manager	1-6
1.3.3 Oracle BPM Suite Process Participant Applications	1-6
1.3.3.1 Oracle Business Process Management Workspace (Process Workspace)	1-7
1.3.3.2 Oracle Business Process Management Process Spaces (Process Spaces)	1-7
1.3.4 Other Oracle BPM Suite Components	1-7
1.3.4.1 Process Analytics	1-7
1.3.4.2 Guided Business Processes	1-7
1.4 Oracle Business Process Analysis Suite	1-7
1.5 Introduction to the Application Development Life Cycle	1-8
1.5.1 Process Modeling	1-9
1.5.2 Implementation	1-10
1.5.3 Deployment	1-10
1.5.4 Oracle BPM Run Time	1-11
1.6 Oracle BPM Use Cases	1-11
1.6.1 Use Case: Using Oracle BPM Studio to Create Project Templates	1-11

1.6.2	Use Case: Using Oracle BPM Studio to Model Processes and Deploy an Application.....	1-12
1.6.3	Use Case: Using Business Process Composer to Create Process Blueprints	1-12
1.6.4	Use Case: Using Business Process Composer to Revise Oracle Business Rules.....	1-13
1.6.5	Use Case: Using the Oracle Business Process Analysis Suite to Model Your Business Processes	1-13

Part I Using Oracle Business Process Management Workspace

2 Getting Started with Oracle Business Process Management Workspace (Process Workspace)

2.1	Understanding Process Workspace.....	2-1
2.2	Starting and Logging In to Process Workspace.....	2-2
2.3	Navigating Process Workspace	2-3
2.3.1	About the Process Workspace Tasks Page.....	2-3
2.3.2	About the Process Workspace Process Tracking Page.....	2-4
2.3.3	About the Process Workspace Standard Dashboards Page	2-5
2.4	Setting Your Preferences in Process Workspace	2-6
2.4.1	Accessing Process Workspace in Local Languages	2-6
2.4.2	Providing a Digital Signature in Process Workspace.....	2-6
2.4.3	Setting a Vacation Period in Process Workspace	2-8
2.4.4	Setting Rules in Process Workspace.....	2-8
2.4.5	Setting Notification Preferences in Process Workspace.....	2-8
2.4.6	Setting Accessibility Preferences in Process Workspace.....	2-8

3 Working on Tasks in Oracle Business Process Management Workspace (Process Workspace)

3.1	What You Need to Know When Acting on Tasks in Process Workspace	3-1
3.2	Working with the Process Workspace Tasks Page	3-2
3.2.1	Viewing Task Details in Process Workspace	3-2
3.2.1.1	Performing System Actions in Process Workspace.....	3-4
3.2.2	Customizing the Task List in Process Workspace	3-5
3.2.2.1	How to Filter Tasks	3-5
3.2.2.2	How to Create and Customize Worklist Views	3-12
3.2.3	Searching for Tasks in Process Workspace	3-16
3.3	Claiming and Releasing Tasks in Process Workspace.....	3-16
3.4	Reassigning and Delegating Tasks in Process Workspace	3-17
3.5	Associating Comments and Attachments with Tasks in Process Workspace	3-18
3.6	Requesting Information in Process Workspace.....	3-18
3.7	Setting Rules, Vacation Periods, and Preferences in Process Workspace.....	3-19
3.7.1	How to Create User Rules in Process Workspace.....	3-20
3.7.2	How to Create Group Rules in Process Workspace	3-21
3.7.3	How to Enable a Vacation Period in Process Workspace	3-23
3.7.4	How to Set Notification Preferences in Process Workspace	3-23
3.8	Creating ToDo Tasks and Subtasks in Process Workspace	3-24
3.9	Acting on Tasks that Require Passwords in Process Workspace.....	3-25
3.10	Acting on a Task that Requires a Digital Signature in Process Workspace	3-25

3.11	Routing Tasks in Process Workspace.....	3-25
------	---	------

4 Working on Process Instances in Oracle Business Process Management Workspace (Process Workspace)

4.1	Initiating Process Instances in Process Workspace.....	4-1
4.2	Viewing the Details of a Process Instance in Process Workspace.....	4-2
4.3	Searching for Process Instances in Process Workspace.....	4-2
4.3.1	How to Perform a Basic Search for Process Instances.....	4-2
4.3.2	How to Perform an Advanced Search for Process Instances	4-3
4.4	Associating Comments and Attachments with a Process Instance in Process Workspace	4-4
4.5	Performing a Bulk Operation in Process Workspace	4-4
4.6	Canceling a Process Instance in Process Workspace	4-4
4.7	Customizing the Presentation of Process Instances in Process Workspace	4-4

5 Creating and Editing Custom Pages in Oracle Business Process Management Workspace (Process Workspace)

5.1	Creating Custom Pages in Process Workspace	5-1
5.1.1	How to Create a Custom Page.....	5-1
5.1.2	How to Add an Applications Panel to a Customized Page.....	5-2
5.1.3	How to Add a Dashboards Panel to a Customized Page	5-2
5.1.4	How to Add a Process Instance Panel to a Customized Page.....	5-3
5.2	Establishing Communication Between Panels	5-4
5.2.1	How to Establish Communication Between Panels	5-4
5.3	Editing Custom Pages and Panels in Process Workspace	5-5

6 Using Dashboards in Oracle Business Process Management Workspace (Process Workspace)

6.1	Using Standard Dashboards.....	6-1
6.1.1	Participant Dashboards.....	6-2
6.1.1.1	Participant Workload Dashboard	6-2
6.1.1.2	Participant Performance Dashboard.....	6-2
6.1.2	Process Dashboards.....	6-2
6.1.2.1	Process Workload Dashboard	6-2
6.1.2.2	Process Performance Dashboard.....	6-3
6.2	Creating Custom Dashboards.....	6-3
6.2.1	Specifying Graph Content	6-3

7 Managing Workloads Among Users in Oracle Business Process Management Workspace (Process Workspace)

7.1	Managing the Availability of Users in Process Workspace.....	7-1
7.2	Creating Group Rules in Process Workspace	7-1
7.3	Setting Assignment Rules for Tasks with Multiple Assignees.....	7-3
7.4	Reassigning or Delegating Tasks in Process Workspace	7-3
7.5	Using Reports to Manage Workflows in Process Workspace	7-3

7.5.1	How to Create Reports.....	7-4
7.5.2	What Happens When You Create Reports	7-5
7.6	Using Dashboards to Manage Workflows in Process Workspace.....	7-5
7.7	Handling Escalations in Process Workspace	7-5

8 Performing Administration in Oracle Business Process Management Workspace (Process Workspace)

8.1	Setting the Display of the Work Items Panel (Application Preferences) in Process Workspace 8-1	
8.2	Managing Other Users' or Groups' Rules (as an Administrator) in Process Workspace	8-2
8.3	Managing Your Organization in Process Workspace.....	8-4
8.3.1	Understanding Deployment of Organization Entities in Process Workspace.....	8-4
8.3.2	Managing Holiday Rules in Process Workspace	8-4
8.3.3	Managing Calendar Rules in Process Workspace.....	8-5
8.3.4	Managing Roles in Process Workspace	8-7
8.3.4.1	How to Add New Application Roles.....	8-7
8.3.4.2	How to Grant and Revoke Roles	8-8
8.3.4.3	How to Create and Manage Role-Specific Views and Layouts	8-9
8.3.5	Managing Organization Roles in Process Workspace.....	8-10
8.3.6	Extending User Properties in Process Workspace	8-11
8.3.7	Managing Organizational Units in Process Workspace	8-13
8.4	Managing Tasks as an Administrator in Process Workspace	8-15
8.4.1	Using Flex Fields in Process Workspace	8-16
8.4.1.1	How to Map Flex Fields.....	8-16
8.4.2	Administering Approval Groups in Process Workspace	8-18
8.4.2.1	How to View Approval Groups	8-18
8.4.2.2	How to Search for an Approval Group.....	8-19
8.4.2.3	How to Add a Static Approval Group	8-20
8.4.2.4	How to Add a New Member to a Static Approval Group	8-21
8.4.2.5	How to Delete a Member from an Approval Group.....	8-22
8.4.2.6	How to Move an Approval Group's Members	8-22
8.4.2.7	How to Nest Approval Groups	8-22
8.4.2.8	How to Rename an Approval Group	8-23
8.4.2.9	Using Dynamic Approval Groups	8-23
8.4.2.10	How to Delete an Approval Group	8-25
8.4.3	Using Task Configuration in Process Workspace.....	8-25
8.4.3.1	How to Edit Event-Driven Settings	8-26
8.4.3.2	How to Edit Data-Driven Settings	8-27
8.4.4	Using Evidence Search in Process Workspace	8-28
8.4.5	Managing Exceptions in Process Workspace	8-29
8.5	Using the User Metadata Migration Utility	8-29

Part II Using Oracle Business Process Management Process Spaces

9 Getting Started with Oracle Business Process Management Process Spaces (Process Spaces)

9.1	Understanding Process Spaces	9-1
-----	------------------------------------	-----

9.1.1	Oracle WebCenter Group Spaces for Business Process Management	9-1
9.2	Starting and Logging In to Process Spaces.....	9-2
9.3	Navigating Process Spaces	9-2
9.3.1	About the Process Spaces Process Workspace	9-3
9.3.1.1	The Process Workspace Home Page.....	9-3
9.3.1.2	The Process Workspace Process Tracking Page.....	9-3
9.3.2	The Modeling Space in Process Spaces.....	9-4
9.3.3	The Process Instance Space in Process Spaces	9-4
10	Using and Customizing a Process Workspace in Process Spaces	
10.1	The Process Workspace Home Page in Process Spaces.....	10-1
10.2	Acting on Tasks in Process Spaces	10-2
10.3	Filtering Tasks in Process Spaces.....	10-2
10.4	Adding Members to the Group Space in Process Spaces.....	10-2
10.5	Adding Documents to Process Workspace in Process Spaces	10-2
10.6	Participating in Discussions in Process Spaces.....	10-3
10.7	Viewing Recent Activity in Process Spaces.....	10-3
10.8	Initiating a Process Instance in Process Spaces.....	10-3
10.9	Filtering Process Instances in Process Spaces	10-3
10.10	Canceling a Process Instance in Process Spaces	10-3
10.11	Adding Documents to Process Instances in Process Spaces.....	10-3
10.12	Using and Customizing Dashboards in Process Spaces	10-4
10.13	Creating an On-Demand Group Space for an Instance in Process Spaces	10-4
10.14	Customizing Process Workspace in Process Spaces.....	10-4
10.15	Subscribing to a Process Workspace Group Space in Process Spaces.....	10-4
11	Using and Customizing a Process Modeling Space in Process Spaces	
11.1	About Modeling Spaces in Process Spaces	11-1
11.2	The Process Modeling Space Page in Process Spaces.....	11-1
11.3	Customizing a Process Modeling Space in Process Spaces	11-2
12	Using and Customizing a Process Instance Space in Process Spaces	
12.1	The Process Instance Space in Process Spaces	12-1
12.2	Adding Comments and Attachments to a Process Instance in Process Spaces	12-2
12.3	Tracking a Process Instance in Process Spaces	12-2
12.4	Adding a Document to a Process Instance Space in Process Spaces.....	12-3
12.5	Participating in a Discussion in a Process Instance Space in Process Spaces.....	12-3
12.6	Customizing a Process Instance Space in Process Spaces.....	12-3
13	Performing Administration in Process Spaces	
13.1	Understanding Roles and Permissions in Process Spaces	13-1
13.2	Understanding Task Flows in Process Spaces	13-1
13.3	Editing Pages in Process Spaces	13-3
13.4	Configuring a Group Space in Process Spaces	13-4

A User Interfaces of Oracle Business Process Management Workspace (Process Workspace)

A.1	The Process Workspace Tasks Page	A-1
A.2	The Process Workspace Task Details Page	A-3
A.2.1	Task History	A-6
A.3	The Process Workspace Process Tracking Page	A-8
A.4	The Process Workspace Process Audit Details Panel.....	A-9

Index

Preface

Oracle Fusion Middleware User's Guide for Oracle Business Process Management describes how to interact with tasks and business processes in both Oracle Business Process Management Workspace and Oracle Business Process Management Process Spaces.

Audience

This document is intended for all users of both Oracle Business Process Management Workspace and Oracle Business Process Management Process Spaces.

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Related Documents

For more information, see the following Oracle resources:

- *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*
- *Oracle Fusion Middleware Business Process Composer User's Guide for Oracle Business Process Management*
- *Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite and Oracle Business Process Management Suite*

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.
<i>italic</i>	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.

Oracle Business Process Management Suite (Oracle BPM Suite) Overview

This chapter provides a general overview of the Oracle BPM Suite.

This chapter includes these topics:

- [Section 1.1, "Introduction to the Oracle BPM Suite"](#)
- [Section 1.2, "Oracle BPM User Personas"](#)
- [Section 1.3, "Oracle BPM Suite Components"](#)
- [Section 1.4, "Oracle Business Process Analysis Suite"](#)
- [Section 1.5, "Introduction to the Application Development Life Cycle"](#)
- [Section 1.6, "Oracle BPM Use Cases"](#)

1.1 Introduction to the Oracle BPM Suite

The Oracle BPM Suite provides an integrated environment for developing, administering, and using business applications centered around business processes.

The Oracle BPM Suite provides the following:

- Enables you to create process models based on standards with user friendly applications. It enables collaboration among process developers and process analysts. Oracle BPM supports BPMN 2.0 and Business Process Execution Language (BPEL) from modeling and implementation to run time and monitoring.
- Enables process analysts and process owners to customize business processes and Oracle Business Rules.
- Provides a web-based application for creating business processes, editing Oracle Business Rules, and task customization using predefined components.
- Expands business process management to include flexible, unstructured processes. It adds dynamic tasks and supports approval routing using declarative patterns and rules-driven flow determination.
- Enables collaboration provided by Oracle Business Process Management Process Spaces, which drives productivity and innovation.
- Unifies different stages of the application development life cycle by addressing end-to-end requirements for developing process-based applications. Oracle BPM unifies the design, implementation, run time, and monitoring stages based on an Service Component Architecture (SCA) infrastructure. This allows different personas to participate through all stages of the application life-cycle.

See [Section 1.2, "Oracle BPM User Personas"](#) for more information about the user personas defined for the Oracle BPM Suite.

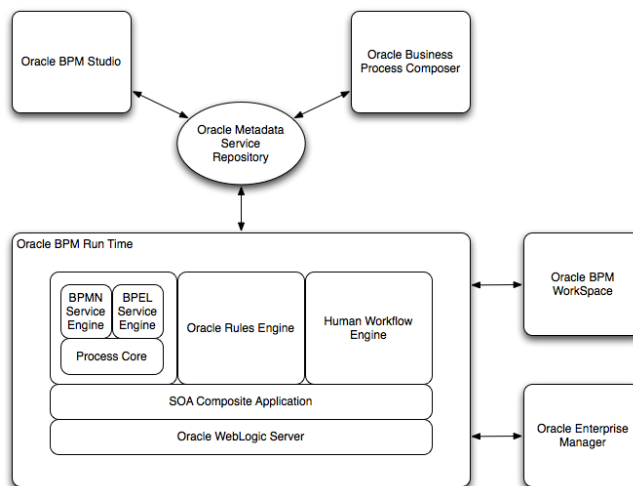
The Oracle BPM Suite provides a seamless integration of all stages of the application development life cycle from design time and implementation to run time and application management.

The Oracle BPM Suite is layered on the Oracle SOA Suite and shares many of the same product components, including:

- Business Rules
- Human Workflow
- Oracle Adapter Framework for Integration

[Figure 1–1](#) shows a high-level architectural view of the Oracle BPM Suite.

Figure 1–1 The Oracle BPM Suite



The following sections of this chapter provide more information on each of these components shown in [Figure 1–1](#).

[Section 1.2, "Oracle BPM User Personas"](#) describes the different types of users who can use the Oracle BPM Suite. It also lists applications and components typically used by each type of user.

[Section 1.3, "Oracle BPM Suite Components"](#) describes each component of the Oracle BPM Suite.

[Section 1.4, "Oracle Business Process Analysis Suite"](#) describes the comprehensive modeling, analysis and simulation capabilities for enterprise wide business processes provided through Oracle Business Process Analysis Suite.

[Section 1.5, "Introduction to the Application Development Life Cycle"](#) describes each stage of the application development cycle using Oracle BPM Suite.

[Section 1.6, "Oracle BPM Use Cases"](#) describes the typical use cases for Oracle BPM Suite.

1.2 Oracle BPM User Personas

Different stages of application development life cycle require interaction from different types of users. [Table 1–1](#) outlines typical users of Oracle BPM Suite and their

responsibilities. It also lists the components of the Oracle BPM they would use to perform their work.

These user personas are used within the examples in this guide.

Table 1–1 Oracle BPM User Persona

User Persona	Description
Process analyst	<p>Process analysts are responsible for creating the initial flow of a business process and documenting its steps. This also includes identifying and defining the Key Performance Indicators (KPIs) and high-level rules that define the routing artifacts of the business process. This persona can also perform simulations to calculate and estimate the return on investment.</p> <p>Process analysts typically use the Oracle Business Process Analysis Suite or Business Process Composer to create process models. They can also use process analyst role within Oracle BPM Studio.</p>
Process developer	<p>Process developers are responsible for implementing the process models created by process analysts. Each step in the process requires an implementation. The process developer is responsible for integrating the business process with back-end applications such as databases.</p> <p>Process developers typically use Oracle BPM Studio to model and implement the components of a business application. They may occasionally use Oracle Business Process Composer (Business Process Composer) for modeling basic processes.</p>
Business administrator	<p>Business administrators are responsible for administering the BPM infrastructure. Typical activities include the installation and setup of BPM environments and the overall management of the Oracle BPMN Service Engines that are hosting the business processes.</p> <p>This persona can be delegated the responsibilities for administering the organizational assets such as users, groups, organizational units, calendars and holidays.</p> <p>The main tool used by business administrators is the Oracle Enterprise Manager and automated tools such as Ant. Business administrators also use Oracle Business Process Management Workspace (Process Workspace) to manage organizational units, role assignments and perform other activities like creating workflow advanced routing declarations</p>
Process owner	<p>Process owners are responsible for controlling and managing deployed business processes. They are responsible for the overall supervision of the running business process. They often use metric analysis tools such as dashboards to understand the current state of the managed business processes.</p> <p>Process owners typically use Process Workspace. They also use Business Process Composer to change the behavior of a process by editing Oracle Business Rules. They may also use the Oracle BAM console to view metrics dashboards.</p>
Process participant	<p>Process participants are the people who use the business applications created with the Oracle BPM Suite.</p> <p>Process participants typically use Process Workspace or Process Spaces.</p>

1.3 Oracle BPM Suite Components

This section provides a general description of the major components of the Oracle BPM Suite. See [Section 1.5, "Introduction to the Application Development Life Cycle"](#) for information about how these components interact within the application development process.

1.3.1 Process Modeling and Implementation

This section describes the applications and components used to model and implement business processes and process-based business applications.

The Oracle BPM Suite provides two primary applications for modeling and implementing business processes: Oracle BPM Studio and Oracle Business Process Composer.

Note: Oracle BPM can also integrate business processes created using the Oracle Business Process Analysis Suite. See [Section 1.4, "Oracle Business Process Analysis Suite"](#) for more information.

1.3.1.1 Oracle BPM Studio

Oracle BPM Studio is a component of the Oracle BPM Suite that provides a user friendly environment where process analysts can design business process models and run process simulations. Oracle BPM Studio supports Business Process Management Notation (BPMN) 2.0.

Oracle BPM Studio also enables process developers to create working process-based applications. These applications are Oracle BPM projects that are integrated as SOA composite applications.

You can use Oracle BPM Studio to implement business processes with other Oracle components such as adapters, human workflow and business rules. You can then deploy these processes to Oracle BPM run time.

Oracle BPM Studio is a part of the Oracle JDeveloper IDE. Oracle BPM Studio enables IT users to use a single integrated tool to model and edit business processes, implement the required IT elements, and deploy applications to the run-time environment.

Oracle BPM Studio also provides a BPM role that enables business users to use a simplified version of Oracle JDeveloper that displays only functionality relevant to process design.

See the *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management* for more information.

1.3.1.2 Oracle Business Process Composer (Business Process Composer)

Business Process Composer is a Web-based application that enables business users to collaborate with process developers and designers. It provides a user friendly environment for editing processes and process templates created in Oracle BPM Studio.

Process developers can create a catalog of preconfigured components such as services, tasks, and rules in Oracle BPM Studio. This catalog can be included in project templates that process analysts can use to create new projects using Business Process Composer.

After creating a project based on a project template, process analysts can incorporate business catalog elements and perform other required edits defined by the project template. Process analysts can then deploy these project to the Oracle BPM run time.

Business Process Composer also enables process analysts to create process blueprints. These are initial drafts of a process that can be used by process developers who use Oracle BPM Studio to add further implementation details and refinement to the project.

Business Process Composer also enables you to edit Oracle Business Rules at run time. This is important because policies tend to evolve faster than business processes.

See *Oracle Fusion Middleware Business Process Composer User's Guide for Oracle Business Process Management* for more information.

1.3.1.3 Oracle Metadata Service (MDS)

MDS provides a repository that is used to store data about applications deployed within an Oracle Fusion Middleware environment. Oracle BPM uses this repository, called Oracle Business Process Management Metadata Store, to store information about deployed applications.

Oracle BPM also uses a separate MDS partition to share projects and project templates between process analysts and process developers. [Figure 1–1, "The Oracle BPM Suite"](#) shows how the MDS repository fits within the overall Oracle BPM architecture.

1.3.1.4 Oracle BPM Projects

Oracle BPM projects are containers for the business processes and related resources used to create a process-based business application. An Oracle BPM project can contain the following:

- Organizational data
- Activity guides
- BPMN process models
- Business catalog
- Simulation models
- Other resources

Oracle BPM projects are deployed at run time as SOA composite applications. For more information on working with projects and SOA composite applications see the following documentation:

- "Working with Projects and Project Templates" in *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*
- "Working with Projects and Project Templates" in *Oracle Fusion Middleware Business Process Composer User's Guide for Oracle Business Process Management*
- *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*

1.3.2 Oracle BPM Run Time Components

Oracle BPM Run Time is responsible for controlling deployed applications. Oracle BPM run time includes the following components:

1.3.2.1 Oracle BPM Engine

The Oracle BPM Engine provides a run-time environment for running business processes. It provides native support for both BPMN and BPEL processes.

The BPM engine is composed of three separate components:

- BPMN Engine
The BPMN engine provides an environment for running BPMN processes.
- BPEL Engine
The BPEL engine provides an environment for running BPEL processes.
- Process Core
The Process Core provides engine functionality that is shared by the BPMN and BPEL engines. Some of the key functionality performed by the process core includes:
 - Manage security
 - Generate audit trails
 - Invoke services
 - Manage persistence

1.3.2.2 Oracle Human Workflow

Human tasks are a component of Oracle Human Workflow that enable you to interleave human interactions with connectivity to systems and services within an end-to-end process flow. Human tasks are responsible for handling all interactions with users or groups participating in the business process.

1.3.2.3 Oracle Business Rules

Oracle Business Rules are a component of the Oracle SOA Suite that enable dynamic decisions at run time allowing, among other features, applications to rapidly adapt to regulatory and competitive pressures. This increased agility is possible because process analysts using Oracle Business Rules can create and change business rules that are separated from the application code. By using Oracle Business Rules, process analysts can change business rules without stopping business processes. Also, externalizing business rules enables process analysts to manage business rules directly, without involving process developers.

1.3.2.4 Oracle WebLogic Server

Oracle WebLogic Server is an application server that provides a platform for creating and running J2EE-compliant applications.

1.3.2.5 Oracle Enterprise Manager

The Oracle Enterprise Manager is a Web-based application that enables system administrators to control and manage applications running on the Oracle SOA Suite. Enterprise Manager enables business administrators to configure and manage business applications and process instances.

1.3.3 Oracle BPM Suite Process Participant Applications

The following sections describe the components of the Oracle BPM Suite that are used by process participants to perform their day-to-day work. These applications enable

process participants to interact with running business applications managed by Oracle BPM run time.

1.3.3.1 Oracle Business Process Management Workspace (Process Workspace)

Process Workspace enable process participants to interact with the applications you create using Oracle BPM. The Process Workspace user interface provides tabs for each of the following:

- **Tasks:** This page enables process participants to view and work with their assigned tasks.
- **Process Tracking:** This page enables process participants to view running process instances.
- **Standard Dashboards:** This page provides out-of-the-box dashboards for monitoring process performance, task performance, and workload.
- **Custom Dashboards:** This page enables process participants to define and use custom dashboards based on the measurement data generated by process instances.

Process Workspace also enables business administrators to configure and maintain organizations and roles. See the *Oracle Fusion Middleware User's Guide for Oracle Business Process Management* for more information.

1.3.3.2 Oracle Business Process Management Process Spaces (Process Spaces)

Process Spaces is a collaborative workspace built on top of Oracle WebCenterSpaces and enables more productive BPM by increasing collaboration.

See the *Oracle Fusion Middleware User's Guide for Oracle Business Process Management* for more information.

1.3.4 Other Oracle BPM Suite Components

The following sections describe other components of the Oracle BPM Suite.

1.3.4.1 Process Analytics

Business Process Analytics enables process participants to monitor the performance of running process-based applications. It measures the key performance indicators defined in a BPM project and stores them in a database. Process participants and analysts can view the metrics stored in the process analytics databases using Process Workspace dashboards or Oracle BAM.

1.3.4.2 Guided Business Processes

Guided Business Processes enable process analysts and developers to group the interactive activities in your BPM process into a set of milestones that are meaningful to the process participants. They outline the steps the process participants must complete, hiding the complexity of the business process.

See "Introduction to Guided Business Processes" in *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*

1.4 Oracle Business Process Analysis Suite

The Oracle Business Process Analysis Suite is a separate Oracle product suite based on the Aris platform from IDS Scheer. It provides comprehensive modeling, analysis, and

simulation capabilities for enterprise wide business processes. It also supports capturing business architecture artifacts such as strategic objectives, goals, higher level KPIs, risks and controls, and conceptual models such as value chain diagrams.

Additionally, the Oracle Business Process Analysis Suite supports the following:

- Alignment of business processes with a business strategy.
- Service discovery and linking to business processes. Drives service requirements for the Oracle SOA Suite.
- Loading and creating simulation scenarios which enable you to determine optimal resource allocation. Simulation enables you to perform throughput analysis, activity based costing, and resource utilization. Additionally, you can create simulation analysis reports for easy analysis of simulation results.
- Comprehensive version management including check-in, check-out, and change management capabilities.

The business architecture defined by the Oracle Business Process Analysis Suite is the formal link between strategic objectives and the actual business applications created using Oracle BPM. The Oracle Business Process Analysis Suite supports modeling of business architecture artifacts such as strategy maps, goals, objectives, risk and controls and linking them to business processes.

This provides the ability to prioritize efforts, justify decisions, and trace activities of the business process improvement initiatives to strategic goals of the business, hence improving business and IT alignment. It provides tremendous value because it offers a clear understanding of which BPM projects to undertake, which processes are currently most strategic to the company, and which services are most aligned with the business strategy.

The Oracle Business Process Analysis Suite complements the functionality of the Oracle BPM Suite by adding orthogonal dimensions to the modeling phases including organization goals. See the *Oracle BPA Quick Start Guide* for more information.

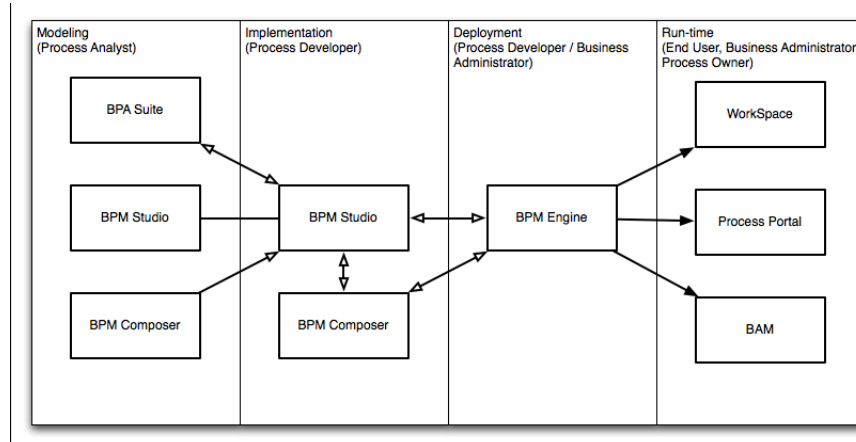
Processes created in the Oracle Business Process Analysis Suite can be imported into the Oracle BPM Suite. Using Oracle BPM Studio, you can integrate your business process with other Oracle technologies including adapters, business rules, and human tasks.

See the *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management* for more information on using business processes created in Oracle Business Process Analysis within Oracle BPM Studio.

1.5 Introduction to the Application Development Life Cycle

This section outlines the stages of the development life cycle of an Oracle BPM application. It describes how different components of Oracle BPM are used within each stage.

[Figure 1–2](#) lists the four stages of the application development life cycle, the user personas applicable to each stage, and the Oracle BPM tools and applications that are used.

Figure 1–2 Stages of the Oracle BPM Application Development Life Cycle

1.5.1 Process Modeling

The first stage of the application development life cycle is process modeling. During this stage a process analyst creates process models based on real-world business processes and problems.

Oracle BPM provides three distinct tools for modeling business processes. Each tool has a different role within the Oracle BPM Suite. The tool you use depends on your business requirements, the stage of the application development cycle, and your user persona.

- Oracle BPM Studio

Oracle BPM Studio runs on the Oracle JDeveloper IDE platform. Oracle BPM Studio provides a process analyst role that displays a simplified set of JDeveloper functionality that focuses on designing process models.

Oracle BPM Studio enables process analysts and process developers to design and implement detailed process flows that are deployed to Oracle BPM run time and run as working applications. Additionally, detailed process flows from Oracle Business Process Analysis Suite or Business Process Composer can be brought inside Oracle BPM Studio for further implementation, then deployed to the Oracle BPM run time.

- Oracle Business Process Composer

Business Process Composer is a collaboration tool that enables process analysts to collaborate with process developers.

- Oracle Business Process Analysis Suite (BPA)

The Oracle Business Process Analysis Suite enables you to create robust models of your business processes from high-level models of your entire organization down to lower level business processes that you can implement as running processes.

See [Section 1.6, "Oracle BPM Use Cases"](#) for more information about how each of these tools fit within the typical Oracle BPM uses cases. See *Oracle Fusion Middleware Business Process Composer User's Guide for Oracle Business Process Management* for more information about how Business Process Composer and Oracle BPM Studio interact within the application development life cycle.

1.5.2 Implementation

After process analysts model business processes, process developers are responsible for creating business applications based on these models. Using Oracle BPM Studio, process developers implement reusable services and integrate other business systems.

Implementation may include the following types of tasks generally performed by process developers:

- Data mapping and transformation
- System fault handling
- Designing and implementing user interfaces using Oracle Human Workflow
- Designing Oracle Business Rules
- Creating dashboards

After a process developer finishes the implementation, the application is compiled and deployed like other SOA composite applications. It can be compiled and deployed using Oracle BPM Studio.

1.5.3 Deployment

Deployment is the process of transferring an Oracle BPM project from the development environment to the run-time environment. This can be either a testing or production run-time environment.

After finishing the integration of business processes with back-end systems and reusable services, process developers create and compile a working process-based application. This application is then deployed to Oracle BPM Run Time.

Oracle BPM Suite contains the following typical scenarios for deploying to Oracle BPM Run Time:

- Deployment directly from Oracle BPM Studio

Applications created with Oracle BPM can be deployed directly to the run-time environment like any other SOA composite application. This is typically performed by a process developer using Oracle BPM Studio within a test or development environment.

See the *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite* for more information about deploying SOA composite applications.
- Deployment directly from Business Process Composer

Oracle BPM enables you to deploy projects created from project templates directly to the same run time environment where Business Process Composer is installed. When creating a project, you can specify an approval workflow that must be completed before the project is deployed.

You can deploy from Business Process Composer when it is installed in the same server infrastructure as Oracle BPM Run Time. This enables process analysts to deploy and test process-based business applications. This is generally done in a testing environment.
- Deployment using an exported SAR file

Oracle BPM Studio and Business Process Composer enable you to export applications using a SAR file. The SAR file can be deployed to a run time environment by business administrators using Oracle Enterprise Manager.

In a production environment, this is generally how applications are deployed.

- Deployment Using the WebLogic Scripting Tool (WLST)
Oracle BPM provides customized WLST commands for managing and deploying Oracle BPM projects.

1.5.4 Oracle BPM Run Time

After an application is deployed, the run-time environment makes the Oracle BPM application available to process participants based on the roles assigned in the organization where the business processes were deployed. This stage is divided into these distinct functions:

- User interaction
Process participants and process owners are responsible for interacting with the running application using Process Workspace.
Process analysts and owners can also monitor the process and revise Oracle Business Rules at run time using Business Process Composer.
- Process management and monitoring
Process owners are responsible for monitoring and maintaining running processes using Process Workspace. Process analysts and owners use Oracle Business Process Analysis to monitor the real-time performance of business processes.
- System administration
Business administrators are responsible for maintaining running business applications and the overall run-time infrastructure using Oracle Enterprise Manager and the Oracle WebLogic Server administration console.

1.6 Oracle BPM Use Cases

This section describes typical uses cases of the Oracle BPM Suite from process modeling to run time.

1.6.1 Use Case: Using Oracle BPM Studio to Create Project Templates

This use case involves using Oracle BPM Studio to create project templates. These templates are used by process analysts to create new projects using Business Process Composer.

Typical Workflow for Using Oracle BPM Studio to Create Project Templates

1. Determine the business requirements (process analyst).
2. Model the required business processes using Oracle BPM Studio (process analyst or process developer)
A process analyst can use the Process Analyst role in Oracle JDeveloper.
3. Implement the processes by integrating each element of the process with back-end systems and reusable services (process developer).
4. Create a project template using Oracle BPM Studio (process developer)
5. Publish the project template to the Oracle BPM MDS repository (process developer).
6. Create a new Oracle BPM project based on a project template (process analyst).

7. Implement the required reusable services defined by the project template (process analyst).
8. Deploy the project to Oracle BPM run time (process analyst).

1.6.2 Use Case: Using Oracle BPM Studio to Model Processes and Deploy an Application

This use case involves using Oracle BPM Studio to create process models. These models are used to create working business applications that are deployed to the Oracle BPM Run Time.

Typical Workflow for Using Oracle BPM Studio to Model Processes

1. Determine the business requirements (process analyst).
2. Model the required business processes using Oracle BPM Studio (process analyst or process developer)
A process analyst can use the Process Analyst role in Oracle JDeveloper.
3. Implement the processes by integrating each element of the process with back-end systems and reusable services (process developer).
4. Compile the Oracle BPM project as a composite application (process developer).
5. Deploy the application to the run-time environment (process developer, business administrator).
6. Interact with the deployed processes as part of a running business application (process participants, process owner).
7. Maintain and monitor the running process-based applications (business administrator, process owner).

1.6.3 Use Case: Using Business Process Composer to Create Process Blueprints

This use case involves creating process blueprints using Business Process Composer. These blueprints are then shared with process developers who import them into Oracle BPM Studio, where they perform further refinement and implementation.

Typical Workflow for Using Business Process Composer to Create Process Blueprints

1. Create process blueprints using Business Process Composer (process analyst).
2. Provide implementation details for the business process and prepare the process-based business application for deployment (process developer).
3. Create project templates and publish them to the Oracle BPM Metadata Store repository using Oracle Business Process Management Studio (process developer).
4. Create a project based on a the project template (process analyst).
5. Edit the project as defined by the edit policies of the project template (process analyst).
6. Deploy the project to Oracle BPM Run Time (process analyst, process administrator).

1.6.4 Use Case: Using Business Process Composer to Revise Oracle Business Rules

This use case involves using Business Process Composer to edit Oracle Business Rules at run time. After an application is deployed, process analysts and owners can open the deployed project and edit Oracle Business Rules.

Typical Workflow for Using Process Composer to Revise Oracle Business Rules

1. Model a set of business processes (process analyst).
2. Implement and deploy an application (process developer).
3. Edit the Oracle Business Rules at run time using Business Process Composer. (process owner).

1.6.5 Use Case: Using the Oracle Business Process Analysis Suite to Model Your Business Processes

This use case involves using the Oracle Business Process Analysis Suite to model your business processes. These processes can be imported into Oracle BPM Studio.

Typical Workflow for Using the Oracle Business Process Analysis Suite and Oracle BPM Suite to Model Processes

1. Determine the business requirements (process analyst).
2. Design your business architecture by capturing strategic objectives, process maps, value chain diagrams using Oracle Business Process Analysis (process analyst).
3. Perform strategic analysis to determine potential process candidates for Oracle BPM projects. (process analysts)
4. Design detailed process flows for the process candidates identified previously (process analyst)
5. Import your process models into Oracle BPM Studio (process analyst, process developer).
6. Implement the processes by integrating each process component with back-end systems and reusable services (process developer).
7. Deploy the business processes, as a BPM project, to the run time environment (process developer, business administrator).
8. Interact with the deployed processes as part of a business application (process participant, process owner)
9. Maintain the processes (business administrator, process owner)

Part I

Using Oracle Business Process Management Workspace

This part contains the following chapters:

- [Chapter 2, "Getting Started with Oracle Business Process Management Workspace \(Process Workspace\)"](#)
- [Chapter 3, "Working on Tasks in Oracle Business Process Management Workspace \(Process Workspace\)"](#)
- [Chapter 4, "Working on Process Instances in Oracle Business Process Management Workspace \(Process Workspace\)"](#)
- [Chapter 5, "Creating and Editing Custom Pages in Oracle Business Process Management Workspace \(Process Workspace\)"](#)
- [Chapter 6, "Using Dashboards in Oracle Business Process Management Workspace \(Process Workspace\)"](#)
- [Chapter 7, "Managing Workloads Among Users in Oracle Business Process Management Workspace \(Process Workspace\)"](#)
- [Chapter 8, "Performing Administration in Oracle Business Process Management Workspace \(Process Workspace\)"](#)

Getting Started with Oracle Business Process Management Workspace (Process Workspace)

Process Workspace is a customizable web-based interface enabling users to access and manage tasks and process instances according to their roles and responsibilities. This chapter tells you how to start and log in to Process Workspace, navigate its interface, and configure your preferences.

To help you get started with Process Workspace, this chapter contains these topics:

- [Section 2.2, "Starting and Logging In to Process Workspace"](#)
- [Section 2.3, "Navigating Process Workspace"](#)
- [Section 2.4, "Setting Your Preferences in Process Workspace"](#)

2.1 Understanding Process Workspace

[Table 2–1](#) lists and describes the users for whom Process Workspace is designed.

Table 2–1 Users of Oracle Business Process Management Workspace

User Profile	Description
Process Participants	<p>This is the most basic profile, common to all users. It enables you to:</p> <ul style="list-style-type: none"> ▪ Organize, find, claim, and perform work assigned or delegated either to you or to your group ▪ Delegate work to another user ▪ Create and manage personal rules—for example, whom to send tasks to when you are on vacation ▪ Define and share views ▪ Manage personal preferences ▪ View reports and dashboards <p>These users may be spread throughout the organization or work outside the company.</p> <p>A process participant may be one who not only initiates the process, but can also track its progress and, if appropriate, withdraw it.</p>

Table 2–1 (Cont.) Users of Oracle Business Process Management Workspace

User Profile	Description
Process Owners	<p>Users who manage one or more business process. They want to know how process instances are moving in those processes. To get this perspective, they typically use dashboards.</p> <p>These users usually reside on the business side of the house as part of the operations organization. They may also be supervisors.</p>
Administrators	<p>Includes two types of administrative users:</p> <ul style="list-style-type: none"> ■ Business administrators: Users responsible for administering Process Workspace—for example, adding flex fields, changing the look and feel, or ensuring that the web application is both running and accessible. They typically need access to Fusion Middleware Control Console as well as to the computers where Process Workspace resides. ■ Process administrators: Users responsible for administering processes—for example, creating shared views; assigning or removing roles, permissions, and groups; and mapping roles.
Supervisors	<p>Users with other process participants reporting to them. To ensure that process instances execute as expected, supervisors can:</p> <ul style="list-style-type: none"> ■ Access staff work ■ Reassign and delegate work as needed ■ Handle escalations from individuals reporting to them ■ Generate reports regarding work distribution and productivity ■ Specify extended user properties

Process analysts typically use the Oracle Business Process Analysis Suite or Business Process Composer to create process models. They can also use process analyst role within Oracle BPM Studio.

Process developers typically use Oracle BPM Studio to model and implement the components of a business application. They may occasionally use Oracle Business Process Composer (Business Process Composer) for modeling basic processes.

2.2 Starting and Logging In to Process Workspace

To start Process Workspace, you must have installed Oracle SOA Suite, and the SOA server must be running. See your installation documentation for more information.

To start and log into Process Workspace:

1. Go to

```
http://host_name:port_number/bpm/workspace/
```

The `host_name` is the name of the host computer on which Oracle SOA Suite is installed.

The `port_number` is the one used at installation.

2. Enter the user name and password.

You can use the preseeded user name to log in as an administrator. If you have loaded the demo user community in the identity store, then you can use other users such as jstein or jcooper.

The user name and password must exist in the user community provided to JAZN.

3. Click **Login**.

2.3 Navigating Process Workspace

Process Workspace provides three default tabs:

- Process Workspace Tasks tab
- Process Workspace Process Tracking tab
- Process Workspace Standard Dashboards tab

In addition to the default tabs, you can create your own custom tabs, with each one appearing as a separate page in Process Workspace. For more information about creating custom tabs, see [Chapter 5, "Creating and Editing Custom Pages in Oracle Business Process Management Workspace \(Process Workspace\)"](#).

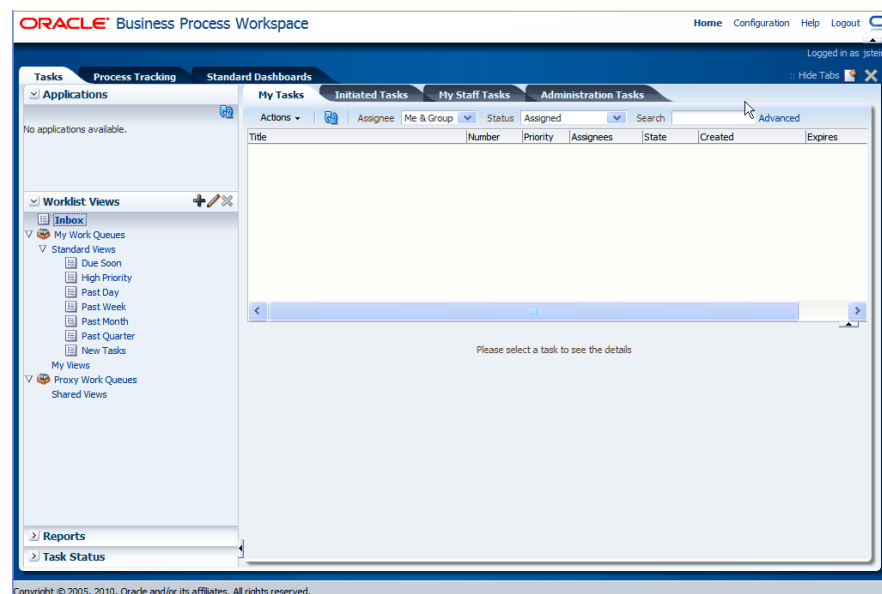
This section contains these topics:

- [Section 2.3.1, "About the Process Workspace Tasks Page"](#)
- [Section 2.3.2, "About the Process Workspace Process Tracking Page"](#)
- [Section 2.3.3, "About the Process Workspace Standard Dashboards Page"](#)

2.3.1 About the Process Workspace Tasks Page

After a user logs in, the Home page, as shown in [Figure 2–1](#), displays the Tasks page by default. The **Tasks** page displays tasks for the user based on the user's permissions and assigned groups and roles.

Figure 2–1 *Process Workspace Tasks Page*



Within the **Tasks** page, the **My Tasks** page and the **Inbox** are displayed by default. The actions allowed from the **Actions** list depend on the logged-in user's privileges.

The Tasks page enables you to do the following:

- Perform authorized actions on tasks in the worklist, acquire and check out shared tasks, define personal to-do tasks, and define subtasks.
- Filter tasks in a worklist view based on various criteria.
- Work with standard work queues, such as high priority tasks, tasks that are due soon, and so on. Work queues enable users to create a custom view to group a subset of tasks in the worklist—for example, high priority tasks, tasks due in 24 hours, expense approval tasks, and more.
- Define custom work queues.
- Gain proxy access to part of another user's worklist.
- Define custom vacation rules and delegation rules.
- Enable group owners to define task dispatching rules for shared tasks.
- Collect a complete workflow history and audit trail.
- Use digital signatures for tasks.

Note: If you change a user's privileges in Oracle Enterprise Manager Fusion Middleware Control Console while the user is logged in to Process Workspace, the changes take effect only after a subsequent login by the user. This is true for situations in which there are two active worklist sessions: one in which the user is logged in before the privileges are changed, and one in which the same user logs in after the privileges are changed. In the first case, the changes to the user's privileges do not take effect while the user is logged in. In the second case, when the user logs in to the second instance of Process Workspace, the changes to the user's privileges do take effect.

For more information about the Tasks tab, see [Section A.1, "The Process Workspace Tasks Page"](#).

2.3.2 About the Process Workspace Process Tracking Page

Use the Process Tracking page to interact with business processes based on the roles assigned to you.

Figure 2–2 Process Workspace Process Tracking Tab

Instance #4 of HelloWorld

Details
 Priority normal
 Status Running
 Process [Project1] HelloWorld
 Number 4
 Creation time 6/15/2010

Open Activities

Title	Priority	State	Actions
UserTask	=	Running	Run

Audit Trail
 Tabular Graphical

Activity	Loop count	Event	Responsible	Date	Thread ID
Start	0	Activity completed		Jun 15, 2010 3:17:47 PM	0
Start	0	Instance created		Jun 15, 2010 3:17:47 PM	0
Start	0	Instance left the activity		Jun 15, 2010 3:17:47 PM	0
UserTask	0	Activity processing		Jun 15, 2010 3:17:47 PM	0
UserTask	0	Instance entered the activity		Jun 15, 2010 3:17:47 PM	0

Using the Process Tracking tab, you can do the following:

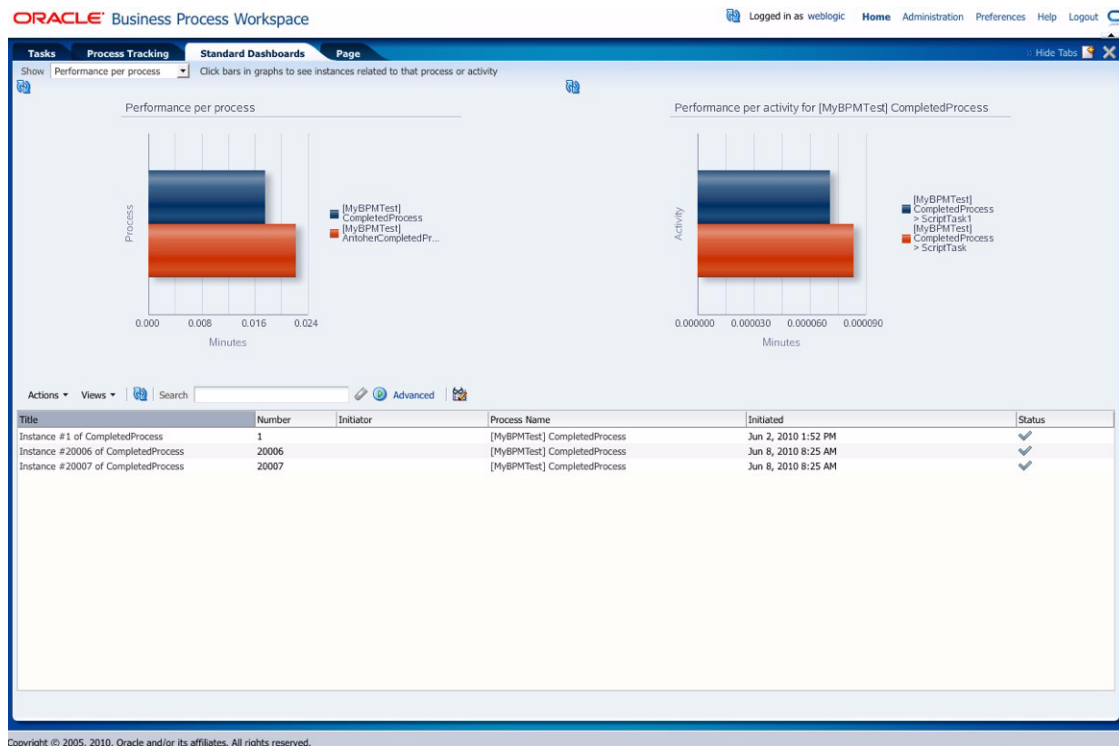
- View the list of process instances pending in your inbox.
- Execute tasks. That is, carry out a human task on a particular instance.
- Search for instances by different criteria.
- Save the searches as a view.
- View the details of an instance, including the audit trail.
- Create a new instance, if you have permission to do so.
- Attach a file to an instance.
- Add notes to an instance.

For more details about the Process Tracking page, see [Section A.3, "The Process Workspace Process Tracking Page"](#) on page A-8

2.3.3 About the Process Workspace Standard Dashboards Page

Dashboards provide analytical information to monitor process execution as well as user workloads. They provide summary information and enable you to drill down to instance-specific information.

[Figure 2–3](#) shows the Standard Dashboards page.

Figure 2–3 Process Workspace Standard Dashboards Page

For additional information about dashboards, see [Chapter 6, "Using Dashboards in Oracle Business Process Management Workspace \(Process Workspace\)"](#).

2.4 Setting Your Preferences in Process Workspace

This section contains these topics:

- [Section 2.4.1, "Accessing Process Workspace in Local Languages"](#)
- [Section 2.4.2, "Providing a Digital Signature in Process Workspace"](#)
- [Section 2.4.3, "Setting a Vacation Period in Process Workspace"](#)
- [Section 2.4.4, "Setting Rules in Process Workspace"](#)
- [Section 2.4.5, "Setting Notification Preferences in Process Workspace"](#)
- [Section 2.4.6, "Setting Accessibility Preferences in Process Workspace"](#)

2.4.1 Accessing Process Workspace in Local Languages

For information about accessing Process Workspace in local languages, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

2.4.2 Providing a Digital Signature in Process Workspace

A digital certificate establishes the participant's credentials. It is issued by a certification authority (CA). It contains your name, a serial number, expiration dates, a copy of the certificate holder's public key (used for encrypting messages and digital signatures), and the digital signature of the certificate-issuing authority so that a recipient can verify that the certificate is real.

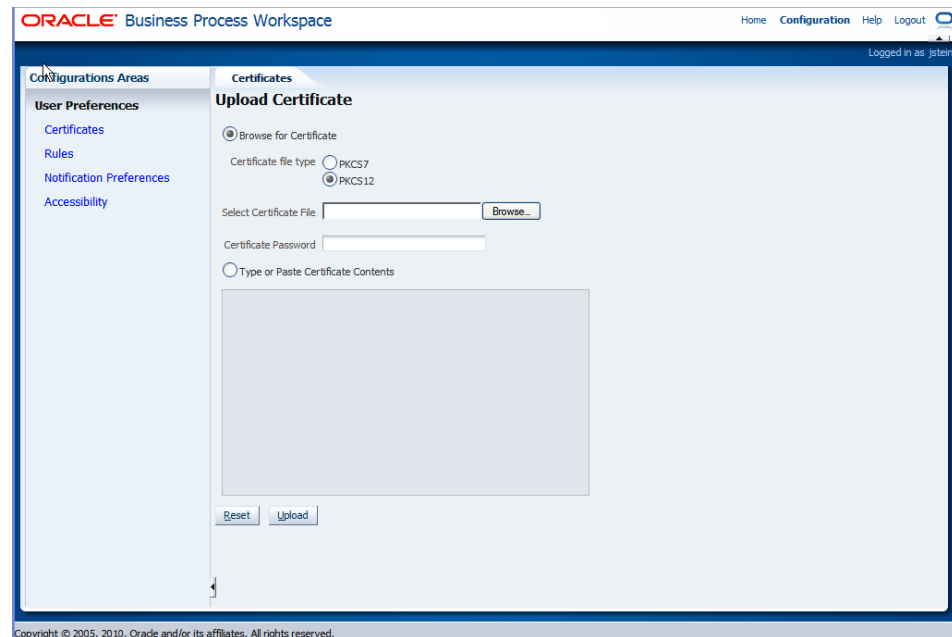
To provide a digital signature:

1. In the upper right corner of Process Workspace, click **Configuration**.
2. In the navigation bar on the left, click **Certificates**.
3. Upload the certificate to use to sign your decision, as shown in [Figure 2-4](#).

When signing a task outcome using your certificate, you must upload the entire chain of certificates through Process Workspace as a .P7B (PKCS7 format) file, not just the one certificate issued to you by the certificate issuer. The entire chain can be exported through Internet Explorer. Mozilla Firefox does not let you export the chain as a .P7B file. Therefore, you can perform the following steps:

- a. Export the chain from Mozilla Firefox as a .P12 file (PKCS12 format that also contains your private key).
- b. Import the .P12 file in Internet Explorer.
- c. Export it again from Internet Explorer as a .P7B file.
- d. Upload it through Process Workspace.

Figure 2-4 Uploading a Certificate



Note the following important points when providing your certificate to the system. Otherwise, you cannot use your certificate to sign your decisions on tasks.

- The PKCS7 file format is a binary certificate format. Select this option if you have a standalone certificate file stored on your disk.
- The PKCS12 file format is a keystore format. Select this option if you have your certificate stored inside a keystore.
- If you want to copy and paste the contents of the certificate, select **Type or Paste Certificate Contents** and paste the BASE64-encoded text into the field. Do not paste a certificate in any other format into this field. Likewise, if you choose to upload a certificate, do not upload a BASE64-encoded certificate. Only PKCS12- and PKCS7- formatted files are supported for uploads.

4. Return to the task list by clicking the **Home** link in the upper right corner of Oracle BPM Worklist.
5. Click a task to approve or reject.
The task details are displayed.
6. Click either **Approve** or **Reject**.
Details about the digital signature are displayed.
7. For a task that has a signature policy, click **Sign**.
The Text Signing Report dialog box appears.
8. Select the certificate from the list to use to sign your decision.
9. Enter the master password of the Web browser that you are using.
10. Click **OK**.

The Web browser signs the string displayed in the upper half of the Text Signing Request with the certificate you selected and invokes the action (approval or rejection) that you selected. The task status is appropriately updated in the human workflow service.

For more information about how certificates are uploaded and used, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

2.4.3 Setting a Vacation Period in Process Workspace

For instructions about setting a vacation period, see [Section 3.7.3, "How to Enable a Vacation Period in Process Workspace"](#).

2.4.4 Setting Rules in Process Workspace

For instructions about setting user and group rules, see [Section 3.7.1, "How to Create User Rules in Process Workspace"](#).

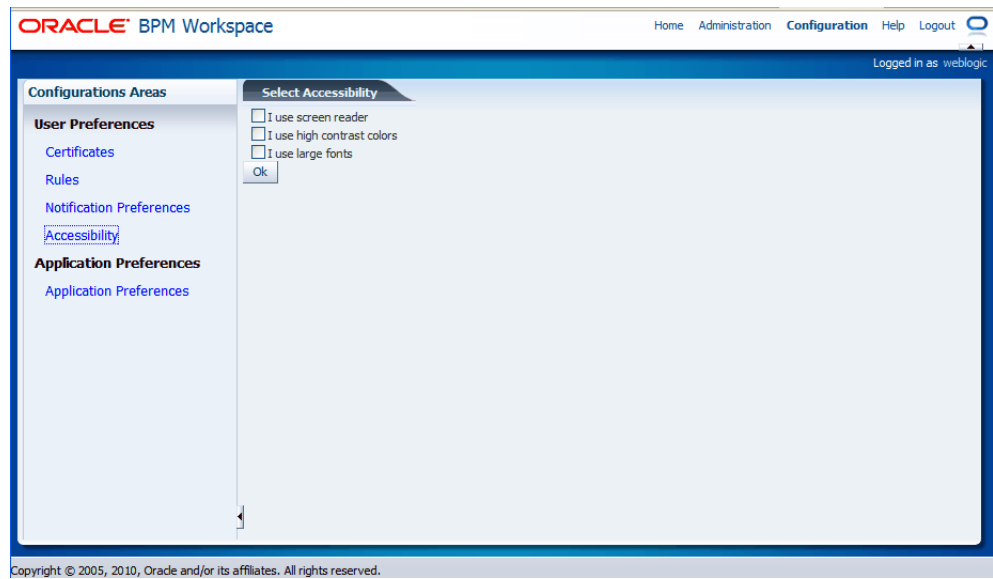
2.4.5 Setting Notification Preferences in Process Workspace

For instructions about setting notification preferences, see [Section 3.7.4, "How to Set Notification Preferences in Process Workspace"](#).

2.4.6 Setting Accessibility Preferences in Process Workspace

To set accessibility preferences:

1. In the upper right corner of Process Workspace, click **Configuration**.
2. In the Configuration Areas panel, select **Accessibility**. The Select Accessibility page appears in the right pane as shown in [Figure 2-5](#).

Figure 2–5 Selecting Accessibility

3. Select your accessibility preferences, then click **OK**.

Working on Tasks in Oracle Business Process Management Workspace (Process Workspace)

This chapter describes how to perform tasks with Process Workspace.

This chapter contains the following topics:

- [Section 3.1, "What You Need to Know When Acting on Tasks in Process Workspace"](#)
- [Section 3.2, "Working with the Process Workspace Tasks Page"](#)
- [Section 3.3, "Claiming and Releasing Tasks in Process Workspace"](#)
- [Section 3.4, "Reassigning and Delegating Tasks in Process Workspace"](#)
- [Section 3.5, "Associating Comments and Attachments with Tasks in Process Workspace"](#)
- [Section 3.6, "Requesting Information in Process Workspace"](#)
- [Section 3.7, "Setting Rules, Vacation Periods, and Preferences in Process Workspace"](#)
- [Section 3.8, "Creating ToDo Tasks and Subtasks in Process Workspace"](#)
- [Section 3.9, "Acting on Tasks that Require Passwords in Process Workspace"](#)
- [Section 3.10, "Acting on a Task that Requires a Digital Signature in Process Workspace"](#)
- [Section 3.11, "Routing Tasks in Process Workspace"](#)

3.1 What You Need to Know When Acting on Tasks in Process Workspace

Here are a few things to keep in mind when acting on tasks:

- If the human task was designed to permit ad hoc routing, or if no predetermined sequence of approvers was defined, then the task can be routed in an ad hoc fashion in the worklist. For such tasks, a **Route** button appears on the task details page. From the Route page, you can look up one or more users for routing. When you specify multiple assignees, you can select whether the list of assignees is for simple (group assignment to all users), sequential, or parallel assignment.

For information about designing tasks to permit ad hoc routing, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

- Parallel tasks are created when a parallel flow pattern is specified for scenarios such as voting. In this pattern, the parallel tasks have a common parent. The parent task is visible to a user only if the user is an assignee or an owner or creator of the task.

The parallel tasks themselves (referred to as subtasks) are visible to whomever the task is assigned, just like any other task.

You can view the subtasks from a parent task. In such a scenario, the task details page of the parent task contains a **View SubTasks** button. The SubTasks page lists the corresponding parallel tasks.

In a voting scenario, if any of the assignees updates the payload, comments or attachments, the changes are visible only to the assignee of that task. A user who can view the parent task (such as the final reviewer of a parallel flow pattern), can drill down to the subtasks and view the updates made to the subtasks by the participants in the parallel flow.

In the worklist, you provide the percentage of votes required for approval.

- If a human task was set up to require a password, then when you act on it, you must provide the password.

Note: Any kind of change to the task details page, such as changing a priority or adding a comment or attachment, requires you to save the change.

3.2 Working with the Process Workspace Tasks Page

This section contains these topics:

- [Section 3.2.1, "Viewing Task Details in Process Workspace"](#)
- [Section 3.2.2, "Customizing the Task List in Process Workspace"](#)
- [Section 3.2.3, "Searching for Tasks in Process Workspace"](#)

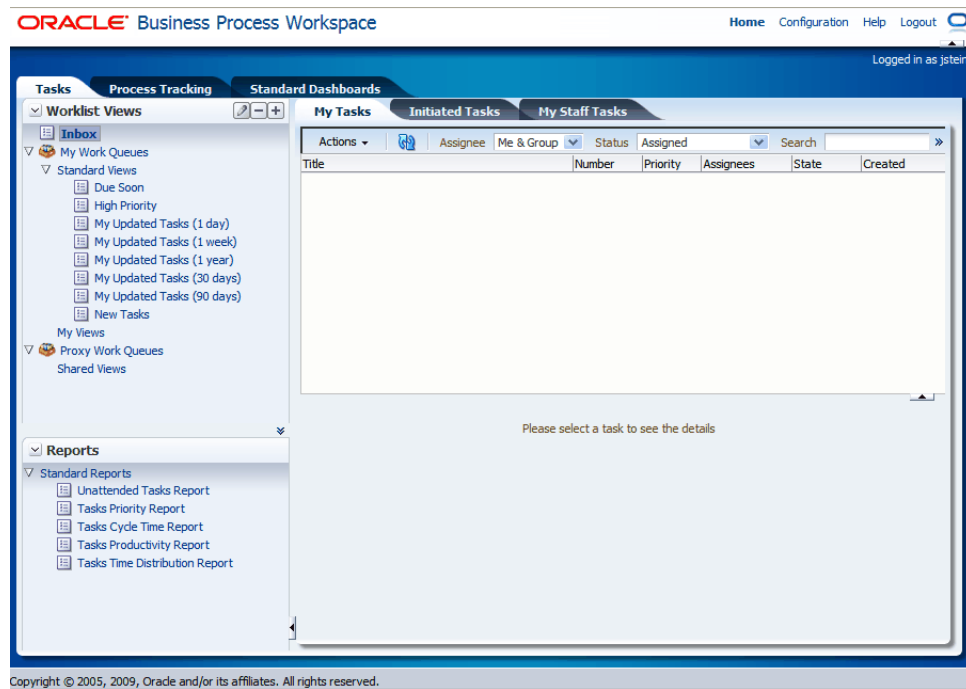
3.2.1 Viewing Task Details in Process Workspace

You perform most tasks in Process Workspace by using the Task Details page.

To display the Task Details page:

1. In the Home page, select the Tasks page, expand the Worklist Views section, and select Inbox. The right pane displays the My Tasks page as shown in the example in [Figure 3-1](#). This page lists all the tasks and work items assigned to you, depending on your role. For example, all users can see the My Tasks and Initiated Tasks pages. Only supervisors can see the My Staff page, only process owners can see the Owner Tasks page, and only administrators can see the Administration Tasks page.

Figure 3–1 Tasks Page



2. To display the details of a task inline, select the task in the right pane. The details are displayed in the lower right pane. To display the task details in a pop-up window, double-click the task. Figure 3–2 shows an example of a Task Details page.

Figure 3–2 Example of a Task Details Page

Help desk request for wfaulk Task Actions ▾ RESOLVED UNRESOLVED

Details

Assignees: Expiration date: Apr 7, 2009 4:53 PM State: Assigned
 Creator: Acquired By:
 Created: Apr 6, 2009 4:43 PM Task Number: 200040
 Updated: Apr 6, 2009 4:43 PM Priority: 3

Contents

Location: California
 Type: Hardware
 Problem Description: Unable to reboot the system
 Severity: 2
 Status: Created

Requester

ID: wfaulk
 First Name: William
 Last Name: Faulkner
 Email: user1@us.oracle.com
 Phone: [0]

Resolution

Comment: None
 Resolved By: None

History

Task Snapshot Future Participants Full task actions

#	Participant	Action	Action Date
1	Stage 1		
1.1	jstein	Assigned	Apr 6, 2009 4:43 PM

Comments Attachments +X

For more information about the Task Details page, see [Section A.2, "The Process Workspace Task Details Page."](#)

3.2.1.1 Performing System Actions in Process Workspace

The action bar of the Task Details page displays system actions, which are available on all tasks based on the user’s privileges. [Table 3–1](#) lists system actions.

Table 3–1 System Task Actions

Action	Description
Claim	Use this action to claim a task that is assigned to a group or multiple users. Claim is the only action available in the Task Action list for group or multiuser assignments. After a task is claimed, all applicable actions are listed.
Escalate	Use this action to escalate a task that is assigned to a group or multiple users. You can add an optional comment in the Comments area. The task is reassigned to your manager (up one level in a hierarchy).
Pushback	Use this action to send a task down one level in the workflow to the previous assignee.
Reassign	Use this action to assign a task to someone else. If you are a manager, you can delegate a task to reportees. A user with BPMWorkflowReassign privileges can delegate a task to anyone.
Release	Use this action to release a claimed task. If a task is assigned to a group or multiple users, it can be released if the user who claimed the task cannot complete the task. Any of the other assignees can claim and complete the task.

Table 3–1 (Cont.) System Task Actions

Action	Description
Renew	Use this task to extend a task's expiration date. You can add an optional comment in the Comments area. The task expiration date is extended 1 week. A renewal appears in the task history. The renewal duration for a task can be controlled by an optional parameter. The default value is P7D (7 days).
Submit Information and Request Information	Use these actions if another user requests that you supply more information or to request more information from the task creator or any of the previous assignees. If reapproval is not required, then the task is assigned to the next approver or the next step in the business process.
Suspend and Resume	Use these actions to suspend or restart a task. These options are available only to users who have been granted the BPMWorkflowSuspend role. Other users can access the task by selecting Previous in the task filter or by looking up tasks in the Suspended status. A suspension is indefinite. It does not expire until Resume is used to resume working on the task.
Withdraw	Use this action to cancel a task. If you are the creator of a task and do not want to continue with it, for example, you want to cancel a vacation request, you can withdraw it and add an optional comment in the Comments area. The business process determines what happens next. You can use the Withdraw action on the home page by using the Creator task filter.

For more information about the Task Details page, see [Section A.2, "The Process Workspace Task Details Page."](#)

3.2.2 Customizing the Task List in Process Workspace

You can customize your task list in several ways, including adding worklist views, selecting which columns to display, and displaying a subset of the tasks based on filter criteria.

To increase the number of tasks retrieved, resize the task list display area.

This section contain these topics:

- [Section 3.2.2.1, "How to Filter Tasks"](#)
- [Section 3.2.2.2, "How to Create and Customize Worklist Views"](#)

3.2.2.1 How to Filter Tasks

[Figure 3–3](#) shows the filter fields.

Figure 3–3 Filters: Assignee, Status, Search, and Advanced Search

Actions						
Assignee	My & Group	Status	Assigned	Search	Advanced	
Title	Number	Priority	Assignees	State	Created	
Vacation Request for jcooper	200203	3	jstein (U)	Assigned	Mar 16, 2009 2:16 PM	

Filters are used to display a subset of tasks, based on the following filter criteria:

- **Assignee**
 - From the **My Tasks** page, select from the following:
 - **My**: Retrieves tasks directly assigned to the logged-in user
 - **Group**: Retrieves the following:

- * Tasks that are assigned to groups to which the logged-in user belongs
- * Tasks that are assigned to an application role that the logged-in user is assigned
- * Tasks that are assigned to multiple users, one of which is the logged-in user
- **My & Group:** Retrieves all tasks assigned to the user, whether through direct assignment, or by way of a group, application role, or list of users
- **Previous:** Retrieves tasks that the logged-in user has updated
- **Reviewer:** Retrieves task for which the logged-in user is a reviewer

From the **Initiated Tasks** page, select **Creator**.

From the **My Staff Tasks** page, select **Reportees**.

From the **Administration Tasks** page, select **Admin**.

- **Status:** Select from the following: **Any**, **Assigned**, **Completed**, **Suspended** (can be resumed later), **Withdrawn**, **Expired**, **Errored** (while processing), **Alerted**, or **Information Requested**.
- **Search:** Enter a keyword to search task titles, comments, identification keys, and the flex string fields of tasks that qualify for the specified filter criterion.
- **Advanced:** Provides additional search filters.

Note: If a task is assigned separately to multiple reportees, when a manager looks at the My Staff Tasks list, the manager sees as many copies of that task as the number of reportees to whom that task is assigned.

To filter tasks based on assignee or status:

1. Select options from the **Assignee** and **Status** lists.

The task list is automatically updated based on the filter selections.

To filter tasks based on keyword search:

1. Enter a keyword to search task titles, comments, identification keys, and the flex string fields of tasks that qualify for the specified filter criterion.
2. Press **Enter** or click **Refresh**.

To filter tasks based on an advanced search:

Flex field attribute labels can be used in an advanced search if you select task types for which flex field mappings have been defined.

See *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite* for more information.

1. Click **Advanced**.
2. (Optional) Select **Save As View**, provide a view name, and use the **Display** page to provide other information, as shown in [Figure 3-4](#) and [Figure 3-5](#).

Figure 3–4 Worklist Advanced Search: Definition Page

Advanced Search

Definition **Display**

Save Search as View

* Name:

Assignee:

Add Condition: +

Match: All Any

Task Type:

Share View: Definition only Data

Assignees:

Reset Save as View Search Cancel

Figure 3–5 Worklist Advanced Search: Display Page

Advanced Search

Definition **Display**

Column 'Title' would always be present and would be first in the task table.

Select View Columns

* Available

- Start Date
- Task Definition Name
- Owner Role
- Updated Date
- Composite Version
- Creator
- From User
- Percentage Complete
- Owner Group
- End Date

Selected

- Title
- Number
- Priority
- Assignees
- State
- Created
- Expires

Move

Move All

Remove

Remove All

Sort By Column:

Sort Order:

Reset Save as View Search Cancel

Table 3–2 describes the advanced search view columns available in the **Display** page.

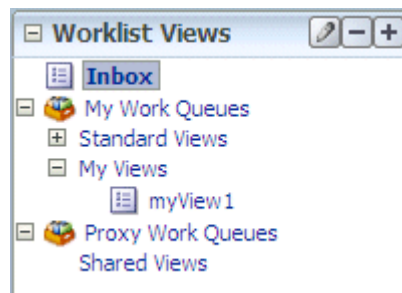
Table 3–2 Advanced Search: View Columns

Column	Description
Start Date	The start date of the task (used with ToDo tasks).
Task Definition Name	The name of the task component that defines the task instance.
Owner Role	The application role (if any) that owns the task instance. Task owners can be application roles, users, or groups. If the owner of the task is an application role, this field is set.
Updated Date	The date the task instance was last updated.
Composite Version	The version of the composite that contains the task component that defines the task instance.
Creator	The name of the creator of the task.
From User	The from user for the task.
Percentage Complete	The percentage of the task completed (used with ToDo tasks).
Owner Group	The group (if any) that owns the task instance. Task owners can be application roles, users, or groups. If the owner of the task is a group, this field is set.
End Date	The end date of the task (used with ToDo tasks).
Composite	The name of the composite that contains the task component that defines the task instance.
Due Date	The due date of the task (used with ToDo tasks).
Composite Distinguished Name	The unique name for the particular deployment of the composite that contains the task component that defines the task instance.
Task Display URL	The URL to display the details for the task.
Updated By	The user who last updated the task.
Outcome	The outcome of the task, for example approved or rejected. This is only set on completed task instances.
Task Namespace	A namespace that uniquely defines all versions of the task component that defines this task instance. Different versions of the same task component can have the same namespace, but no two task components can have the same namespace.
Approvers	The approvers of the task.
Application Context	The application to which any application roles associated with the tasks (such as assignees, owners, and so on) belong.
Owner User	The user (if any) that owns the task instance. Task owners can be application roles, users, or groups. If the owner of the task is a user, this field is set.
Identifier	The (optional) custom unique identifier for the task. This is an additional unique identifier to the standard task number.
Category	The category of the task.
Acquired By	The name of the user who claimed the task in the case when the task is assigned to a group, application role, or to multiple users, and then claimed by the user.
Component	The name of the task component that defines the task instance.
Original Assignee User	The name of the user who delegated the task in the case when the user delegates a task to another user.
Assigned	The date that this task was assigned.

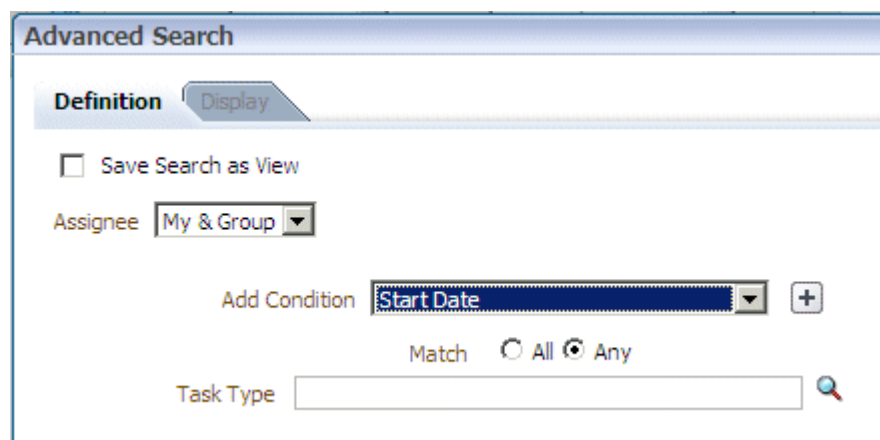
Table 3–2 (Cont.) Advanced Search: View Columns

Column	Description
Domain	The domain to which the composite that contains the task component that defines the task instance belongs.
Title	The title of the task.
Number	An integer that uniquely identifies the task instance.
Priority	An integer that defines the priority of the task. A lower number indicates a higher priority; typically numbers 1 to 5 are used.
Assignees	The current task assignees (users, groups or application roles).
State	The state of the task instance.
Created	The date that the task instance was created.
Expires	The date on which the task instance expires.

The saved view appears in the **Inbox** under **My Views**, as shown in [Figure 3–6](#).

Figure 3–6 Saving a View

3. Select an assignee, as shown in [Figure 3–7](#).

Figure 3–7 Worklist Advanced Search

4. Add conditions (filters), as shown in [Figure 3–8](#).

Figure 3–8 Adding Filters for an Advanced Search on Tasks

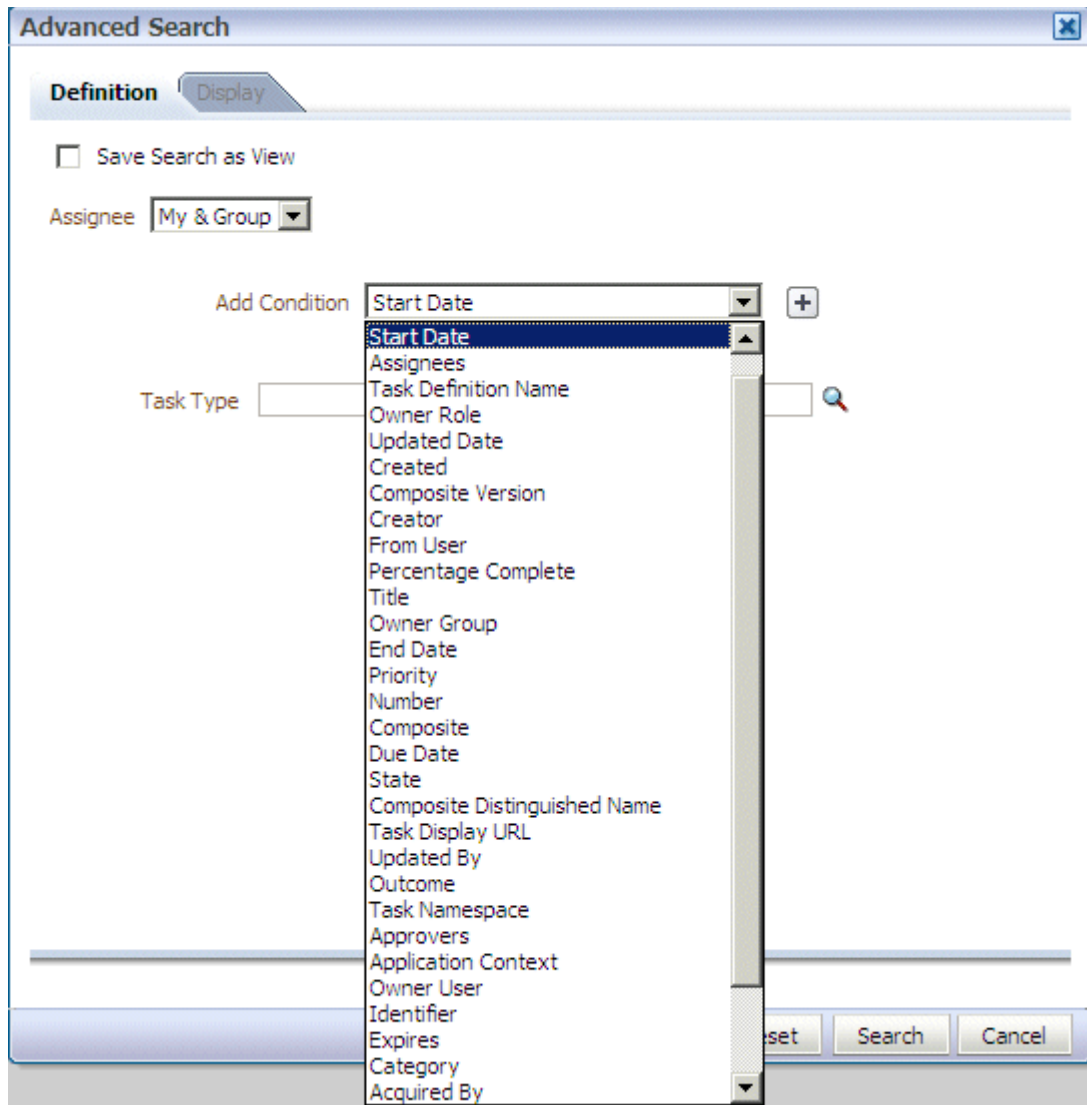


Table 3–3 describes the available conditions.

Table 3–3 Advanced Search: Conditions

Condition	Description
Start Date	The start date of the task (used with ToDo tasks).
Assignees	The current task assignees (users, groups or application roles).
Task Definition Name	The name of the task component that defines the task instance.
Owner Role	The application role (if any) that owns the task instance. Task owners can be application roles, users, or groups. If the owner of the task is an application role, this field is set.
Updated Date	The date that the task instance was last updated.
Created	The date that the task instance was created.
Composite Version	The version of the composite that contains the task component that defines the task instance.
Creator	The name of the creator of the task.

Table 3–3 (Cont.) Advanced Search: Conditions

Condition	Description
From User	The from user for the task.
Percentage Complete	The percentage of the task completed (used with ToDo tasks).
Title	The title of the task.
Owner Group	The group (if any) that owns the task instance. Task owners can be application roles, users, or groups. If the owner of the task is a group, this field is set.
End Date	The end date of the task (used with ToDo tasks).
Priority	An integer that defines the priority of the task. A lower number indicates a higher priority; typically numbers 1 to 5 are used.
Number	An integer that uniquely identifies the task instance.
Composite	The name of the composite that contains the task component that defines the task instance.
Due Date	The due date of the task (used with ToDo tasks).
State	The state of the task instance.
Composite Distinguished Name	The unique name for the particular deployment of the composite that contains the task component that defines the task instance.
Task Display URL	The URL to display the details for the task.
Updated By	The user who last updated the task.
Outcome	The outcome of the task, for example approved or rejected. This is only set on completed task instances.
Task Namespace	The namespace of the task.
Approvers	The approvers of the task.
Application Context	The application to which any application roles associated with the tasks (such as assignees, owners, and so on) belong.
Owner User	The user (if any) that owns the task instance. Task owners can be application roles, users, or groups. If the owner of the task is a user, this field is set.
Identifier	The (optional) custom unique identifier for the task. This is an additional unique identifier to the standard task number.
Expires	The date on which the task instance expires.
Category	The category of the task.
Acquired By	The name of the user who claimed the task in the case when the task is assigned to a group, application role, or to multiple users, and then claimed by the user.
Component	The name of the task component that defines the task instance.
Original Assignee User	The name of the user who delegated the task in the case when the user delegates a task to another user.
Assigned	The date that this task was assigned.
Domain	The domain to which the composite that contains the task component that defines the task instance belongs.

5. Add parameter values, shown in [Figure 3–9](#).

Figure 3–9 Advanced Search

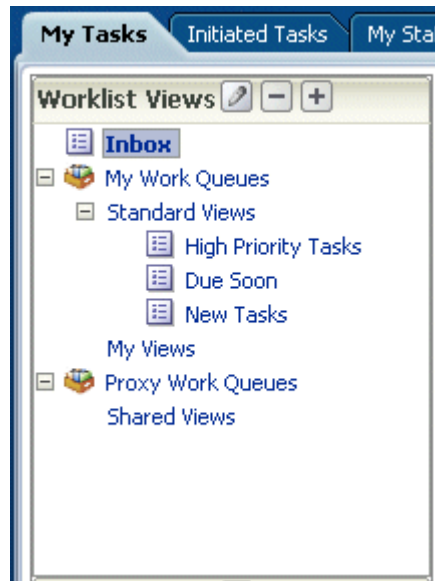
6. Select **Any** or **All** for matching multiple filters.
7. (Optional) Search on a task type.
8. Click **Search**.

The task list with the tasks filtered according to your criteria appears.

3.2.2.2 How to Create and Customize Worklist Views

The **Worklist Views** area, shown in [Figure 3–10](#), displays the following:

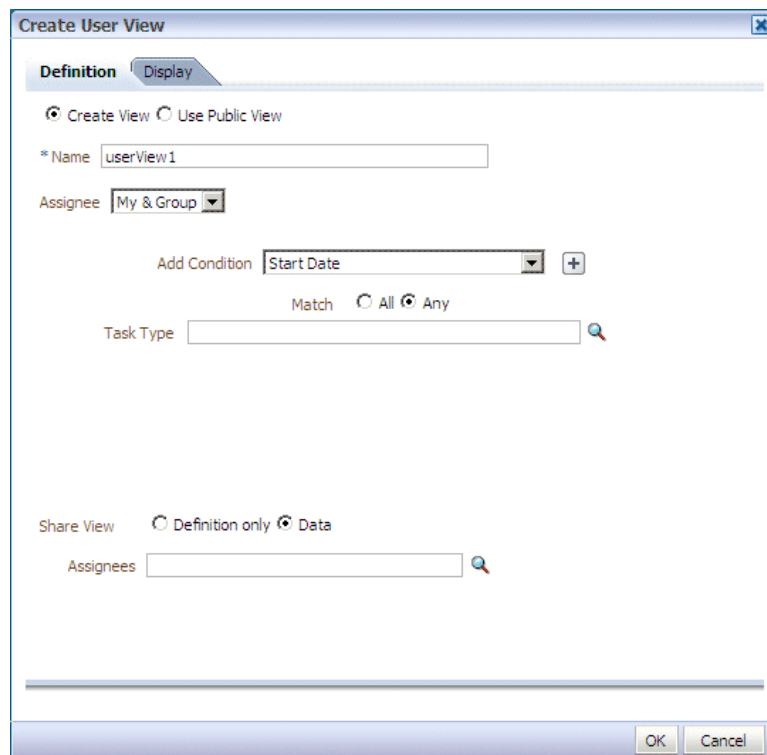
- **Inbox**—Shows all tasks that result from any filters you may have used. The default shows all tasks.
- **My Work Queues**—Shows standard views and views that you defined.
- **Proxy Work Queues**—Shows shared views.

Figure 3–10 Worklist Views

Use **Worklist Views** to create, share, and customize views.

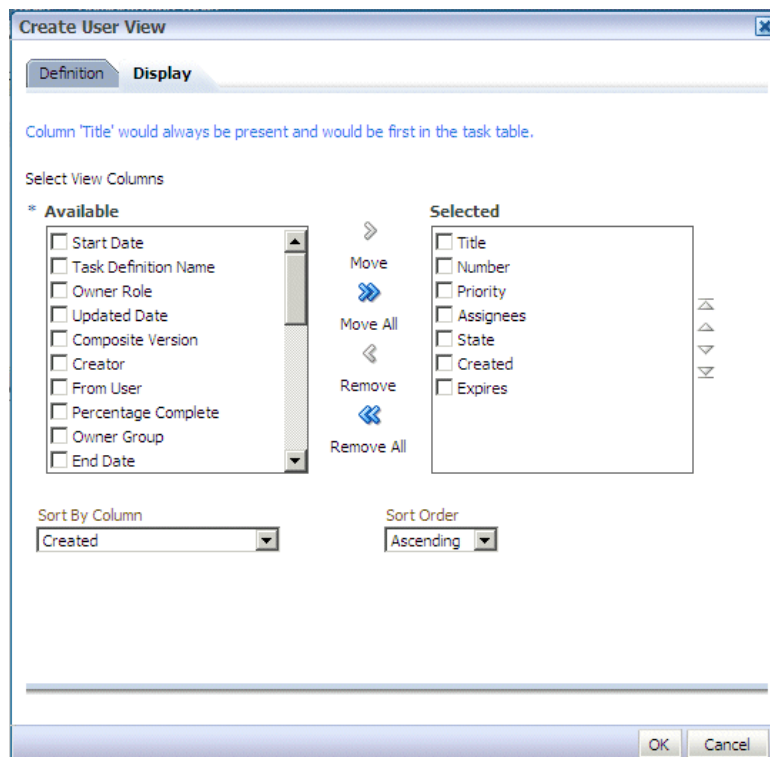
To create a worklist view:

1. In the **Worklist Views** section, click **Add**.
2. Use the **Definition** page of the Create User View dialog box, shown in [Figure 3–11](#).

Figure 3–11 Creating a Worklist View

- **Create View or Use Public View**—Create your own view or browse for a public view to copy.
 - **Name**—Specify a name for your view.
 - **Add to Standard Views**—This option applies to administrators only. Administrators select this option to create the view as a standard view, which then appears in the **Standard Views** list for *all* worklist users.
 - **Assignee**—Select **My**, **Group**, **My&Group**, **Previous**, or **Reviewer**.
 - **Add Condition**—Select a filter from the list and click **Add**. For example, if you select **startDate**, and click **Add**, then a calendar and a list including **on**, **equals**, **not equals**, **greater than**, **less than**, and so on appears.
 - **Task Type**—Browse for a task type or leave the field blank for all types. Flex field attribute labels can be selected in the query and display columns dialog boxes if the selected task types have flex field mappings defined.
 - **Match**—Select **All** or **Any** to match the conditions you added.
 - **Share View**—You can grant access to another user to either the definition of this view, in which case the view conditions are applied to the grantee’s data, or to the data itself, in which case the grantee can see the grantor’s worklist view, including the data. Sharing a view with another user is similar to delegating all tasks that correspond to that view to the other user; that is, the other user can act on your behalf. Shared views are displayed under **Proxy Work Queues**.
 - **Assignees**—Specify the users (grantees) who can share your view.
3. Use the **Display** page of the Create User View dialog box, shown in [Figure 3–12](#), to customize the fields that appear in the view.

Figure 3–12 *Displaying Fields in a Worklist View*



- **Select View Columns**—Specify which columns you want to display in your task list. They can be standard task attributes or flex fields that were mapped for the specific task type. The default columns are the same as the columns in your inbox.
 - **Sort by Column**—Select a column on which to sort.
 - **Sort Order**—Select ascending or descending order.
4. Click **OK**.

To customize a worklist view:

1. In the **Worklist Views** section, click the view name.
2. Click the **Edit** icon.
3. Use the **Definition** and **Display** pages of the Edit User View dialog box to customize the view, as shown in [Figure 3–13](#) and [Figure 3–14](#), and click **OK**.

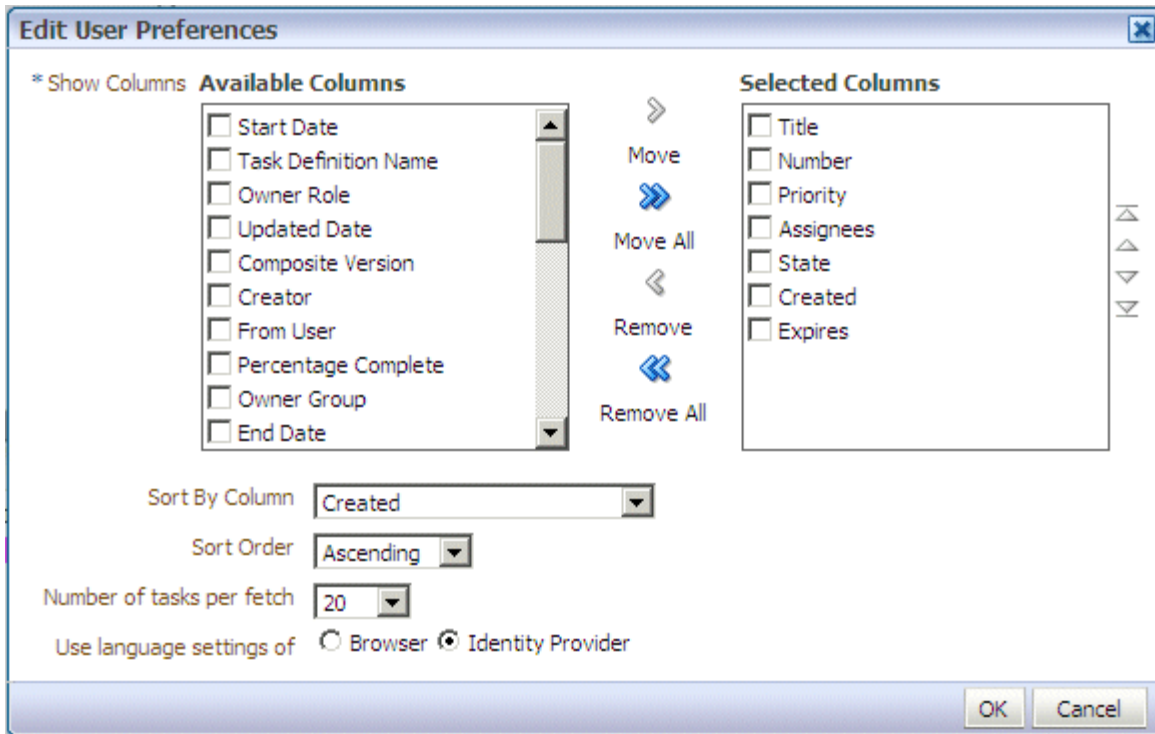
Figure 3–13 Customizing a Worklist View

The screenshot shows the 'Edit User View : myView1' dialog box with the 'Definition' tab selected. The fields are as follows:

- *Name:** myView1
- Assignee:** My
- Add Condition:** Start Date
- Match:** All (selected), Any
- Task Type:** (empty)
- Assignees:** equals, j
- Share View:** Definition only, Data (selected)
- Assignees:** (empty)

Buttons for 'OK' and 'Cancel' are located at the bottom right of the dialog.

Figure 3–14 Customizing Fields in a Worklist View



When you select and move items from the **Available Columns** list to the **Selected Columns** list (or vice-versa), the items remain selected. Therefore, if you select items to move back, the previously selected items are also moved. Ensure that you deselect items after moving them between the lists if you intend to move additional columns.

3.2.3 Searching for Tasks in Process Workspace

For instructions about searching for tasks, see:

- ["To filter tasks based on keyword search:"](#) on page 3-6
- ["To filter tasks based on an advanced search:"](#) on page 3-6

3.3 Claiming and Releasing Tasks in Process Workspace

If a task is assigned to a group or multiple users, then the task must be claimed first. Claim is the only action available in the Task Action list for group or multiuser assignments. After a task is claimed, all applicable actions are listed.

If a task is assigned to a group or multiple users, it can be released by the user who claimed it. Any of the other assignees can then claim and complete the task.

To claim and release tasks:

To claim a task, open it in the Task Details page, then click the **Claim** button.

Similarly, to release a task, open it in the Task Details page, then click the **Release** button.

[Figure 3–15](#) shows part of a Task Details page with the **Claim** button in the upper right corner.

Figure 3–15 Claiming a Task

Vacation Request for jcooper Claim

Details

Contents

Creator: jcooper

From Date: Mar 15, 2009 5:00 PM

To Date: Mar 21, 2009 5:00 PM

Reason: Yearly vacation

History

Task Snapshot Future Participants Full task actions

#	Participant	Action	Updated By	Action Date
1	default			
1.1	jstein	Assigned	workflowsystem	Mar 16, 2009 2:16 PM
1.2	jcooper, jlondon	Reassigned	jstein	Mar 16, 2009 2:58 PM

3.4 Reassigning and Delegating Tasks in Process Workspace

To reassign or to delegate a task, you use the Tasks page.

Delegate differs from **Reassign** in that the privileges of the delegatee are based on the delegator's privileges. This function can be used by managers' assistants, for example.

A supervisor can always reassign tasks to any of his reportees. Users with the BPMWorkflowReassign role can assign tasks to any users in the organization.

You can reassign to multiple users or groups. One of the assignees must claim the task.

To reassign or delegate a task:

1. On the Tasks page, from the **Actions** list, select **Reassign**.
2. Select **Reassign** or **Delegate**.
3. Provide or browse for a user or group name.

Figure 3–16 Reassigning a Task

Reassign Task

Reassign tasks to one or more users.
This will transfer ownership of the task and remove it from your worklist.

Reassign (transfer task to another user or group)
 Delegate (allow specified user to act on my behalf)

Users:

First name, Last name, ID

Available

jausten
 jstein
 jverne

Selected

jcooper
 jlondon

Move
Move All
Remove
Remove All

Details

Name: Jack London
Work Phone: 100000008
Cell Phone: 300000008
Fax:
Email: jlondon@emailExample.com
Title: Loan Agent 1

Manager: sfitzger
Reportees:
Roles: QATeam
Groups: LoanAgentGroup, CentralRegion

4. Move names to the **Selected** area and click **OK**.

3.5 Associating Comments and Attachments with Tasks in Process Workspace

You can associate comments and attachments with a task by using the Task Details page.

For instructions about associating comments and attachments with a task, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

For details about the Task Details page, see [Section A.2, "The Process Workspace Task Details Page."](#)

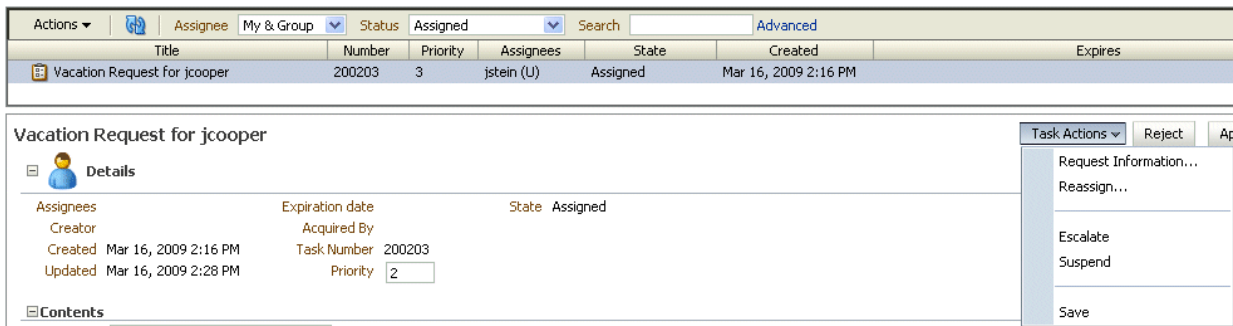
3.6 Requesting Information in Process Workspace

To request information, you use the **Actions** list in the Task Details page.

To request information:

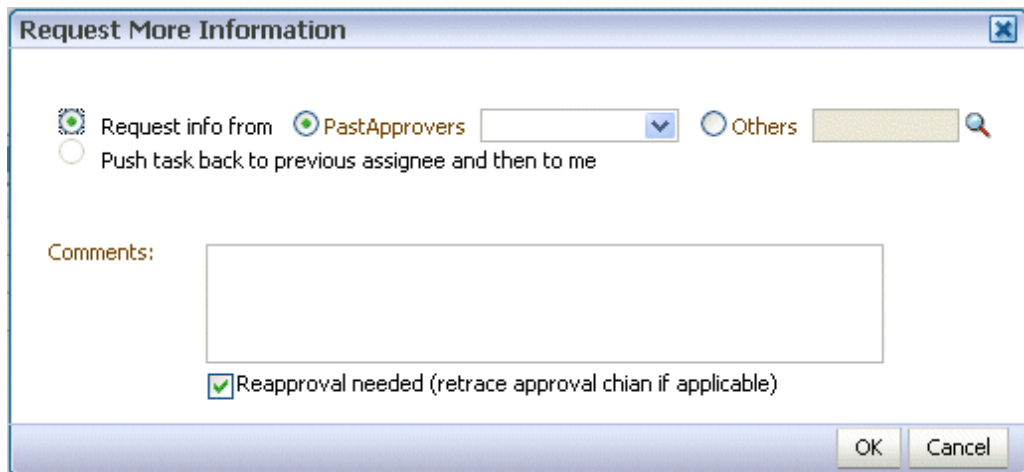
1. From the **Actions** list, select **Request Information**, as shown in [Figure 3–17](#).

Figure 3–17 Requesting Information



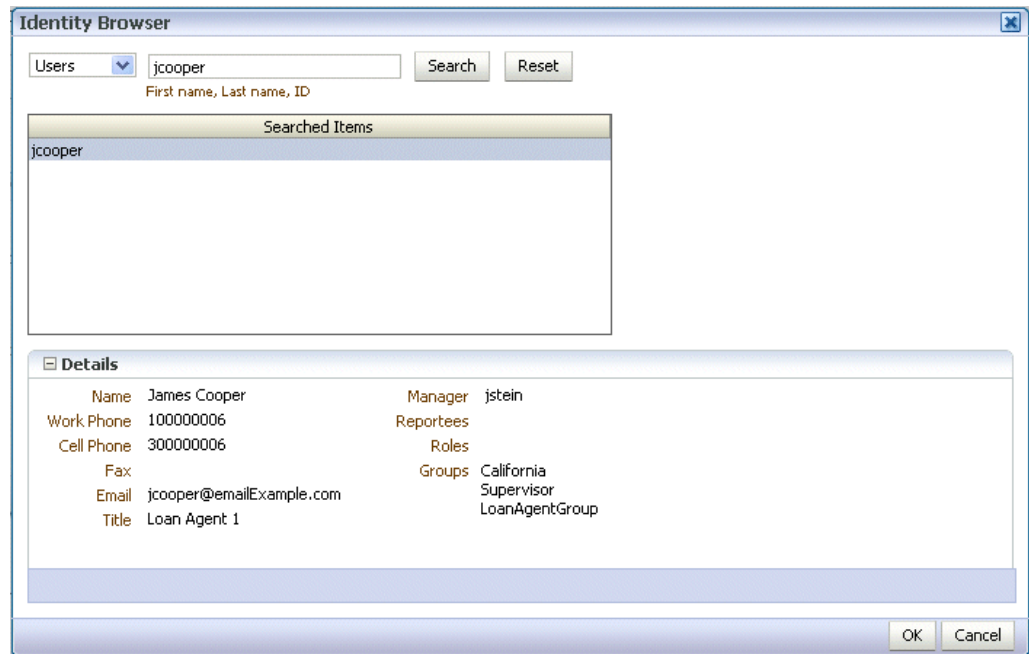
2. Request information from a past approver or search for a user name, or push the task back to the previous assignee, as shown in [Figure 3–18](#).

Figure 3–18 Requesting Information from Past Approvers or Another User, or Pushing the Task Back



If you use the **Search** icon to find a user name, the Identity Browser dialog box appears, as shown in [Figure 3–19](#).

Figure 3–19 Identity Browser Dialog Box



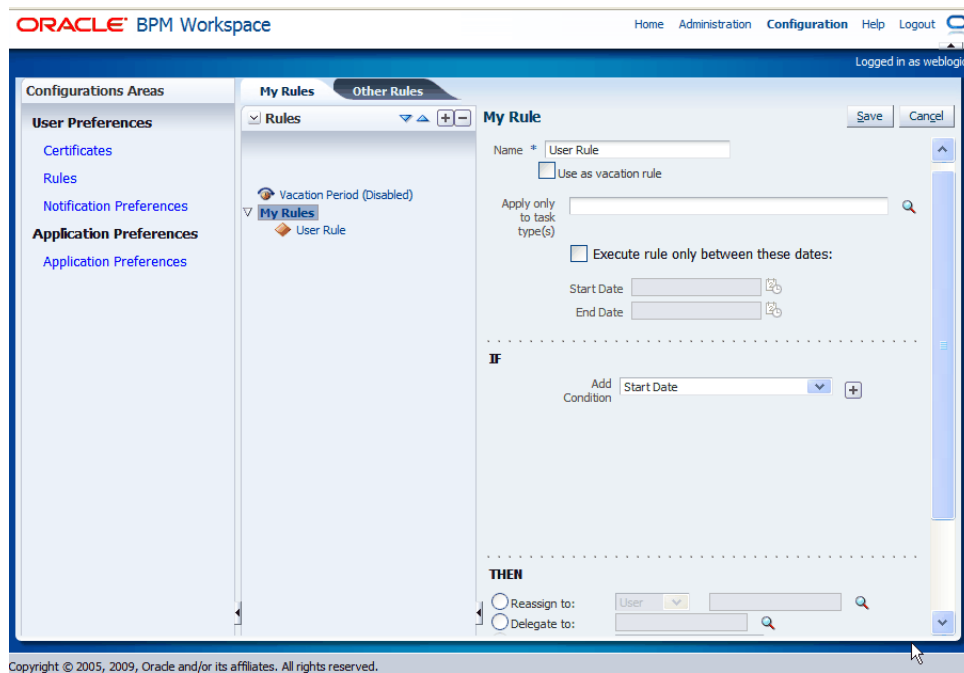
3. Click OK.

For more information about these and other system actions in the **Actions** list, see [Table A–2](#).

For more information about the Task Details page, see [Section A.2, "The Process Workspace Task Details Page."](#)

3.7 Setting Rules, Vacation Periods, and Preferences in Process Workspace

Rules act on tasks, either a specific task type or all the tasks assigned to a user or group. To set rules, from the Process Workspace toolbar, select **Configuration**. The Configuration Areas window appears as shown in [Figure 3–20](#).

Figure 3–20 Configuration Areas: My Rules Page

A rule cannot always apply to all circumstances in which it is used. For example, if a rule applies to multiple task types, it may not be possible to set the outcome for all tasks, because different tasks can have different outcomes.

Rules are executed in the order in which they are listed.

If a rule meets its filter conditions, then it is executed and no other rules are evaluated. For your rule to execute, you must be the only user assigned to that task. If the task is assigned to multiple users (including you), the rule does not execute.

You cannot specify business rules for ToDo tasks.

This section contains these topics:

- [Section 3.7.1, "How to Create User Rules in Process Workspace"](#)
- [Section 3.7.2, "How to Create Group Rules in Process Workspace"](#)
- [Section 3.7.3, "How to Enable a Vacation Period in Process Workspace"](#)
- [Section 3.7.4, "How to Set Notification Preferences in Process Workspace"](#)

3.7.1 How to Create User Rules in Process Workspace

To create a user rule:

1. From the Process Workspace toolbar, select **Configuration**. The **Configuration Areas** window is displayed.
2. In the User Preferences area, click **Rules**. The My Rules and Other Rules pages appear in the right pane. The My Rules page is selected.
3. In the **My Rules** page, in the Rules section, select **My Rules**. The My Rule screen appears in the right pane.
4. Provide a name for the rule.

5. If the rule is a vacation rule, select **Use as a vacation rule**. The start and end dates of the rule are automatically synchronized with the vacation period.
For instructions about setting a vacation period that is synchronized with the vacation rule, see [Section 3.7.3, "How to Enable a Vacation Period in Process Workspace."](#)
 6. In the **Apply only to task type(s)** field, browse for task types to which the rule applies. If a task is unspecified, then the rule applies to all tasks. If a task type is specified, then any flex field attributes mapped for that task type can be used in the rule condition.
 7. Select **Execute rule only between these dates** and provide rule execution dates.
 8. In the **IF** area, add rule conditions. These are filters that further define the rule, such as specifying that a rule acts on priority 1 tasks only, or that a rule acts on tasks created by a specific user. The conditions can be based on standard task attributes and any flex fields that were mapped for the specific tasks. See [Section 8.4.1.1, "How to Map Flex Fields"](#) for more information.
 9. In the **THEN** area, select actions to be taken. User rules do the following actions:
 - **Reassign to**—You can reassign tasks to subordinates or groups you manage. If you were granted the BPMWorkflowReassign role, then you can reassign tasks to any user or group.
 - **Delegate to**—You can delegate to any user or group. Any access rights or privileges for completing the task are determined according to the original user who delegated the task. (Any subsequent delegations or reassignments do not change this from the original delegating user.)
 - **Set outcome to**—You can specify an automatic outcome if the workflow task was designed for those outcomes, for example, accepting or rejecting the task. The rule must be for a specific task type. If a rule is for all task types, then this option is not displayed.
 - **Take no action**—Use this action to prevent other more general rules from applying. For example, to reassign all your tasks to another user while you are on vacation, except for loan requests, for which you want no action taken, then create two rules. The first rule specifies that no action is taken for loan requests; the second rule specifies that all tasks are reassigned to another user. The first rule prevents reassignment for loan requests.
 10. Click **Save**.
- The new rule appears under the **My Rules** node.

3.7.2 How to Create Group Rules in Process Workspace

Creating a group rule is similar to creating a user rule, with the addition of a list of the groups that you (as the logged-in user) manage. Examples of group rules include:

- Assigning tasks from a particular customer to a member of the group
- Ensuring an even distribution of task assignments to members of a group by using round-robin assignment
- Ensuring that high-priority tasks are routed to the least busy member of a group

Group rules do the following actions:

- **Assign to member via**—You can specify a criterion to determine which member of the group gets the assignment. This dynamic assignment criterion can include

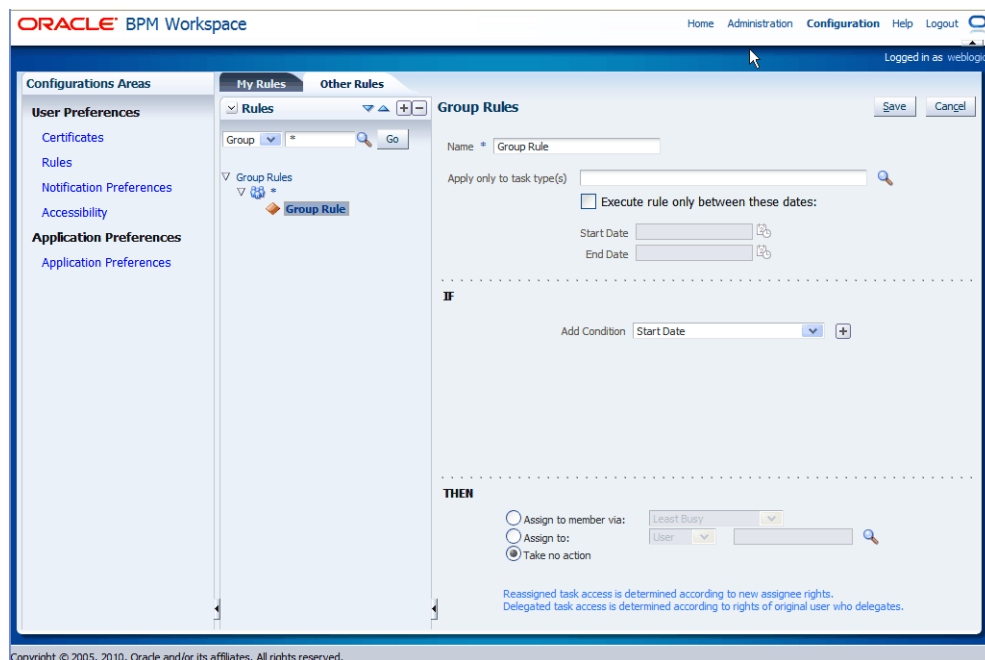
round-robin assignment, assignment to the least busy group member, or assignment to the most productive group member. You can also add your custom functions for allocating tasks to users in a group.

- **Assign to**—As with user rules, you can assign tasks to subordinates or groups you directly manage. If you have been granted the BPMWorkflowReassign role, then you can reassign tasks to any user or group (outside your management hierarchy).
- **Take no action**—As with user rules, you can create a rule with a condition that prevents a more generic rule from being executed.

To create a group rule:

1. From the Process Workspace toolbar, select **Configuration**. The Configuration Areas window is displayed.
2. In the User Preferences area, click **Rules**. The My Rules and Other Rules pages appear in the right pane. The My Rules page is selected.
3. Click the **Other Rules** tab.
4. Select **Group** from the list.
5. Enter a group name and click the **Search** icon, or enter a group name. The Identity Browser dialog box opens for you to find and select a group.
6. Select the group name under the **Group Rules** node and click **Add**, as shown in Figure 3–21.

Figure 3–21 Creating a Group Rule



7. Provide group rule information and click **Save**.
 - Provide a name for the rule.
 - Browse for task types to which the rule applies.
 - Provide rule execution dates.

- In the **IF** area, add rule conditions.
- In the **THEN** area, select the actions to be taken: (**Assign to member via**, **Assign to**, or **Take no action**), as shown in [Figure 3–21](#).

The new rule appears under the **Group Rules** node.

3.7.3 How to Enable a Vacation Period in Process Workspace

You can set a vacation period so that you are removed from automatic task assignment during the dates you specify.

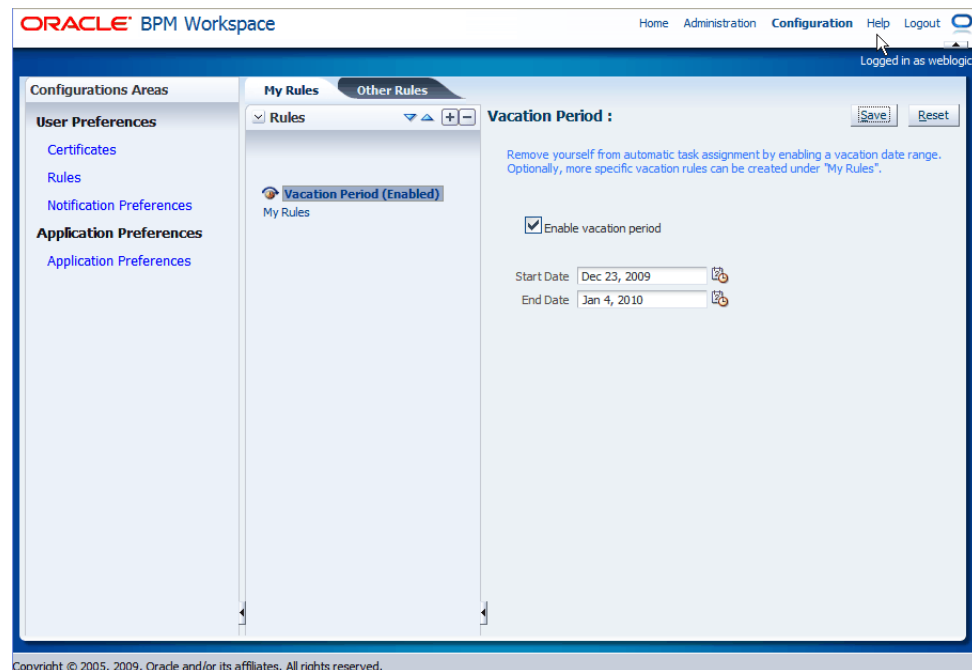
Vacation rules are not executed for ToDo tasks. See [Section 3.7.1, "How to Create User Rules in Process Workspace"](#) for how to set a vacation rule that is synchronized with the vacation period.

To enable a vacation period:

1. Click the **Configuration** link. The Configuration Areas page appears.
2. In the User Preferences panel, click **Rules**. The right pane displays the Rules panel with the My Rules page selected. Adjacent and to the right of the My Rules page, the Vacation Period page appears.
3. Select **Enable vacation period**.
4. Provide start and end dates.
5. Click **Save**.

The vacation period is enabled, as shown in [Figure 3–22](#).

Figure 3–22 Enabling a Vacation Period



3.7.4 How to Set Notification Preferences in Process Workspace

You can configure the notification settings to control how, when, and where you receive messages in cases when you have access to multiple communication channels

(delivery types). Specifically, you can define messaging filters (delivery preferences) that specify the channel to which a message should be delivered, and under what circumstances.

For example, you could create filters for messages received from customers with different Service Level Agreements (SLA). You could specify that, for customers with a premium SLA, you want to be notified through business phone and SMS channels; and, for customers with a nonpremium SLA, by email.

For information about how to specify notification settings, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

3.8 Creating ToDo Tasks and Subtasks in Process Workspace

ToDo tasks appear in the assignee's **Inbox**.

You can create ToDo tasks that are children of other ToDo tasks or business tasks. A ToDo task can have only one level of child ToDo tasks. When all child ToDo tasks are 100% complete, the parent ToDo task is also marked as completed. If the parent ToDo task is completed, then child ToDo tasks are at 100% within the workflow system. If the parent is a business task, the child ToDo is not marked as completed. You must set the outcome and complete it. If you explicitly set a ToDo task to 100%, there is no aggregation on the parent task.

ToDo tasks can be reassigned, escalated, deleted (logical delete), and purged (physical delete). Reassignment, escalation, and so on of the parent task does not affect the assignment of any child ToDo tasks. The completion percentage of a ToDo task can be reset to less than 100% after it is completed.

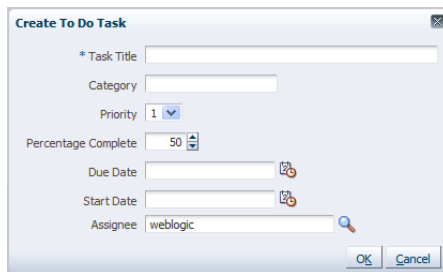
Assignment rules (such as vacation rules) are not applied to ToDo tasks. You cannot specify business rules for ToDo tasks.

To create a ToDo task:

1. From the Tasks page, from the **Actions** list, select **Create To Do Task...**

The Create To Do Task dialog box appears, as illustrated in [Figure 3–23](#).

Figure 3–23 The Create To Do Task Dialog Box



2. Follow the steps in *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

To create a subtask:

For instructions about creating subtasks, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

3.9 Acting on Tasks that Require Passwords in Process Workspace

For instructions about acting on tasks that require passwords, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

3.10 Acting on a Task that Requires a Digital Signature in Process Workspace

For instructions about acting on tasks that require digital signatures, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

3.11 Routing Tasks in Process Workspace

For instructions about routing tasks, including ad hoc tasks, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

Working on Process Instances in Oracle Business Process Management Workspace (Process Workspace)

This chapter contains these topics:

- [Section 4.1, "Initiating Process Instances in Process Workspace"](#)
- [Section 4.2, "Viewing the Details of a Process Instance in Process Workspace"](#)
- [Section 4.3, "Searching for Process Instances in Process Workspace"](#)
- [Section 4.4, "Associating Comments and Attachments with a Process Instance in Process Workspace"](#)
- [Section 4.5, "Performing a Bulk Operation in Process Workspace"](#)
- [Section 4.6, "Canceling a Process Instance in Process Workspace"](#)
- [Section 4.7, "Customizing the Presentation of Process Instances in Process Workspace"](#)

4.1 Initiating Process Instances in Process Workspace

To initiate a process:

1. In the Process Tracking page, in the Applications panel, click the process you want to initiate. The dialog box for that process instance appears.
2. Create any comments or add any attachments.

To add a comment:

- a. In the Comments section, click **Create**. The Create Comment dialog box appears.
- b. Enter your comment and click **OK**.

To add an attachment:

- a. In the Attachments section, click **Add**. The Add Attachment dialog box appears.
- b. Select the attachment type. If you select Desktop File, a dialog box enables you to enter the path name of the file or browse to find it. If you select URL, you are prompted for the name of the file and the URL.
- c. After you have specified the attachment, click **OK**.

4.2 Viewing the Details of a Process Instance in Process Workspace

To view the details of a process instance:

In the Process Tracking page, from the process instance list, select the instance whose details you want to view. The Work Item Detail panel opens in the lower right section of the page as shown in [Figure 4-1](#).

Figure 4-1 Work Item Details Panel

Instance #4 of HelloWorld

Details
 Priority: normal
 Status: Running
 Process: [Project1] HelloWorld
 Number: 4
 Creation time: 6/15/2010

Open Activities

Title	Priority	State	Actions
UserTask	==	Running	Run

Audit Trail
 Tabular Graphical

Activity	Loop count	Event	Responsible	Date	Thread ID
Start	0	Activity completed		Jun 15, 2010 3:17:47 PM	0
Start	0	Instance created		Jun 15, 2010 3:17:47 PM	0
Start	0	Instance left the activity		Jun 15, 2010 3:17:47 PM	0
UserTask	0	Activity processing		Jun 15, 2010 3:17:47 PM	0
UserTask	0	Instance entered the activity		Jun 15, 2010 3:17:47 PM	0

The Details section displays the priority, process name, when the instance is due to complete, status, creation time, and the assignee if any.

If the process instance has any gateways with threads that are still running, the Open Activities section displays their status.

The Audit Trail section displays audit information—in either tabular form or graphically depending on your selection.

For more information about the Task Details page, see [Section A.4, "The Process Workspace Process Audit Details Panel."](#)

You can also use this panel to create comments and add attachments as described in [Section 4.4, "Associating Comments and Attachments with a Process Instance in Process Workspace"](#)

4.3 Searching for Process Instances in Process Workspace

You can perform either a basic search or an advanced search for process instances.

4.3.1 How to Perform a Basic Search for Process Instances

For a basic search, you enter all or part of the name of a process instance in the Search field.

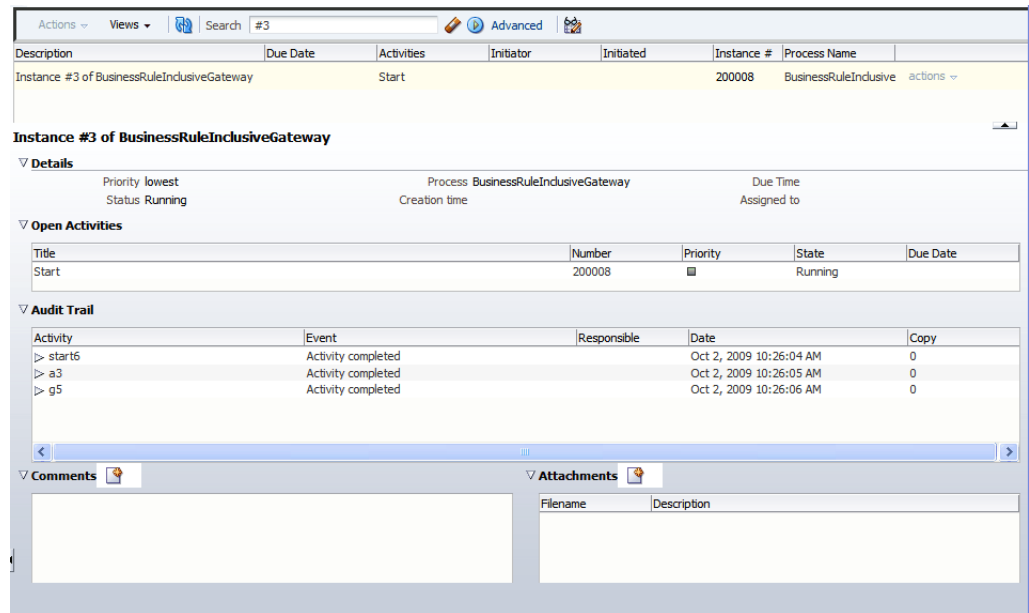
To perform a basic search for a process instance:

Select the Process Tracking page and, in the Search field, enter all or part of the name of the instance for which you are searching. Note that the search results are based on the Description column of the Process Tracking page.

To retrieve a list of all instances, enter %.

Search results are displayed as shown in the example in [Figure 4-2](#).

Figure 4–2 Search Results



The Details section displays the priority, process name, when the instance is due to complete, status, creation time, and the assignee.

If the process instance has any gateways with threads that are still running, the Open Activities section displays their status.

The Audit Trail section displays audit information—in either tabular form or graphically depending on your selection.

4.3.2 How to Perform an Advanced Search for Process Instances

You can perform a search based on one or more conditions you specify.

To perform an advanced search for a process instance:

1. In the Process Tracking page, click **Advanced**. The Advanced Search dialog box appears.
2. From the Processes list, select each of the processes you want to include in the view.
3. From the Status list, select one or more the following:

Table 4–1 Add View Status List

Status	Description
In Process	The work item is active; it has not reached the end of the process.
Completed	The work item reached the end of the process.
Aborted	The work item is no longer active, and did not reach the end of the process.

4. Click **OK**.

4.4 Associating Comments and Attachments with a Process Instance in Process Workspace

To associate a comment with a process instance:

1. From the worklist, select the process instance with which you want to associate a comment.
2. In the details panel, in the Comments section, click **New**.
3. Enter your comment and click **OK**.

To associate an attachment with a process instance:

1. From the worklist, select the process instance with which you want to associate an attachment.
2. In the details panel, in the Attachments section, click **New**. The Add Attachment dialog box appears.
3. In the Description field, optionally enter a description for the attachment.
4. In the Filename field, enter the path to the file, or click **Browse** to navigate to it.
5. Click **OK**.

4.5 Performing a Bulk Operation in Process Workspace

In this release, the only available bulk operation you can perform is Cancel.

To perform a bulk operation:

1. In the Process Tracking page, from the process instance list, select several instances. In the Instance Details panel, a message indicates how many instances are currently selected to be processed. Also, the Actions list is updated with the options that can be performed over the group of instances that were selected.
2. Select the operation in the Actions list. The selected operation is performed on the instances you specified.

4.6 Canceling a Process Instance in Process Workspace

Only process owners can cancel a process instance.

To cancel a process instance:

- From the Actions list at the end of the row for the instance you want to cancel, select **Cancel**.
- Select the instance and, from the Actions list on the toolbar of the Process Tracking page, select **Cancel**

4.7 Customizing the Presentation of Process Instances in Process Workspace

A presentation is a column arrangement to use when viewing instances in the Work Items panel. When looking at a view, you can use an existing presentation or create a new one to be associated with that view.

You can choose the columns that are presented in any view displayed in the Work Items panel.

To customize the presentation of a process instance:

1. From the Views panel, select the view whose presentation you want to customize. The view is displayed in the Work Items panel.
2. From the Work Items toolbar, click **Add/Remove columns**. This displays the Presentation dialog box in which you can select and sort the columns in your presentation.
3. From the Available Columns list, select the columns you want to include in your view and move them to the Presentation Columns list by clicking the right arrow.
4. To sort the columns:
 - a. Select an individual item in the Presentation Columns list.
 - b. Move it into place by using the vertical arrows to the right of the list.
 - c. Repeat for each column you want to sort.
5. Click **Apply**, then close the Presentation dialog box by clicking **Close**.

Creating and Editing Custom Pages in Oracle Business Process Management Workspace (Process Workspace)

A layout is a set of pages. It contains information about the pages it contains and the panels each page contains.

Process Workspace provides its own default layout, but an end user can customize that layout by adding new pages and panels.

In addition to customizing the default layout, process designers and administrators can also create new layouts and associate them with different sets of roles. This enables them to define the experience for the various kinds of users of each project.

You can select which page you are currently viewing by clicking the page. You can choose which pages to hide or show by selecting from the **Hide Tabs** list in the toolbar.

Depending on your roles, you may see several layouts at the same time.

This chapter contains these topics:

- [Section 5.1, "Creating Custom Pages in Process Workspace"](#)
- [Section 5.2, "Establishing Communication Between Panels"](#)
- [Section 5.3, "Editing Custom Pages and Panels in Process Workspace"](#)

5.1 Creating Custom Pages in Process Workspace

You can design and add new pages and panels to customize your layout. This section contains these topics:

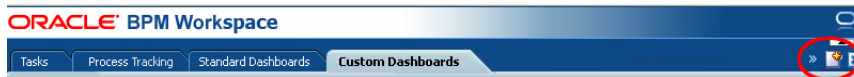
- [Section 5.1.1, "How to Create a Custom Page"](#)
- [Section 5.1.2, "How to Add an Applications Panel to a Customized Page"](#)
- [Section 5.1.3, "How to Add a Dashboards Panel to a Customized Page"](#)
- [Section 5.1.4, "How to Add a Process Instance Panel to a Customized Page"](#)

5.1.1 How to Create a Custom Page

To create a custom page:

1. In the upper right corner of Process Workspace, click **Add Page**, as shown in [Figure 5-1](#).

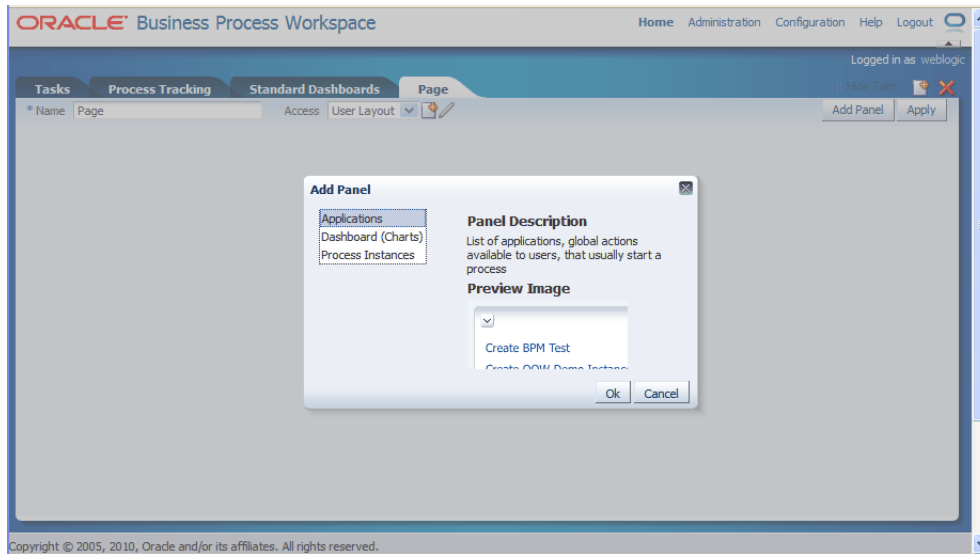
Figure 5–1 Adding a Page



The new page appears.

2. In the upper right corner of the new page, click **Add Panel**. The Add Panel dialog box appears with the Applications item selected, as shown in Figure 5–2.

Figure 5–2 Adding an Applications Panel



You can choose the type of application panel to add: application, dashboard, or process instance.

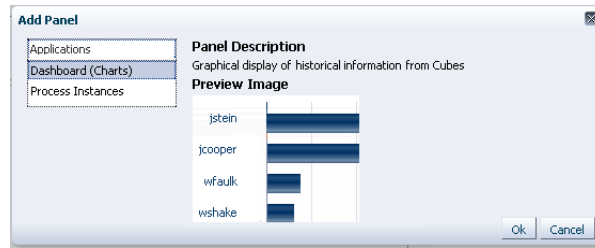
5.1.2 How to Add an Applications Panel to a Customized Page

To add an Applications panel to a customized page:

1. From the Add Panel dialog box, select Applications, then click **Ok**. The Applications panel appears on the page.
2. Specify the name of the Applications panel and any configurable properties.
3. Click **Apply**.

5.1.3 How to Add a Dashboards Panel to a Customized Page

From the Add Panel dialog box, you can also select Dashboards (Charts), as shown in Figure 5–3.

Figure 5–3 Adding a Dashboards (Charts) Panel

This dialog box enables you to include either charts or a chart selector in your new page. Choosing either one provides you with the corresponding preview image.

To add a Dashboards panel to a customized page:

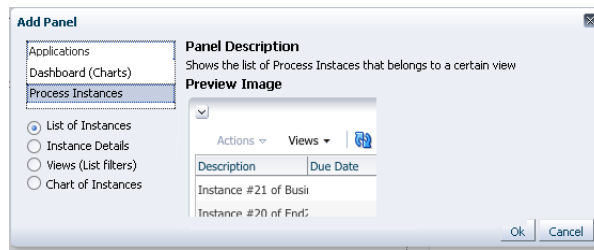
1. From the Add Panel dialog box, select Dashboards (Charts), then click **Ok**. The Dashboards panel appears on the page.
2. In the **Panel label** section, specify the name of the Dashboards panel.
3. In the **Panel properties** section, from the **Data Source** list, select a data source for this dashboard panel. The default options are:
 - Workload per Process
 - Performance per Process
 - Workload per Participant
 - Performance per Participant

You can also specify a custom data source. To do this:

- a. In the Dashboards panel, in the Panel Properties section, to the right of the **Data Source** field, click the spy-glass icon. The Data Sources dialog box appears.
- b. In the navigator pane on the left, click **New**. A Data Source dialog box appears for you to create a new data source.
- c. Specify the fields as described in [Section 6.2.1, "Specifying Graph Content."](#)
- d. When you are finished specifying the data source, click **Ok**.
4. Specify the action to be triggered when clicking the graph or widget. Options are:
 - Update another widget: Updates any widget configured to listen to this widget
 - Update a view: Updates any view configured to listen to this widget
5. Specify any communication that is to take place with other panels. For information, see [Section 5.2, "Establishing Communication Between Panels"](#) on page 5-4.

5.1.4 How to Add a Process Instance Panel to a Customized Page

From the Add Panel dialog box, you can select Process Instances, as shown in [Figure 5–4](#).

Figure 5–4 Adding a Process Instances Panel

Selecting this option enables you to include one of the following types of process instance panels in your new page: list of instances, instance details, views (list filters), and chart instances. Choosing any one of these displays the corresponding preview image.

To add a Process Instance panel:

1. From the Add Panel dialog box, select Process Instances, select the type of Process Instances panel, then click **Ok**. The type of Process Instances panel you selected appears on the page.
2. In the **Panel label** section, specify the name of the Process Instance panel.
3. If the **Panel properties** section appears for the type of panel you selected, set the properties as required.
4. Specify any communication that is to take place with other panels. For information, see [Section 5.2, "Establishing Communication Between Panels."](#)

5.2 Establishing Communication Between Panels

You can establish communication between two panels so that an action in one panel is triggered by an action in the other. For example, you can configure a Process Instance panel to listen for actions in a View List panel. Then, when a user selects a given view in the View List panel, that action triggers the use of that view in the Process Instance panel.

5.2.1 How to Establish Communication Between Panels

To establish communication between panels, you configure one panel, designed with listening capabilities, to monitor actions in one or more source panels. An action occurring in a source panel then triggers an action in the listening panel.

Note: Communication can be established only between panels on the same page.

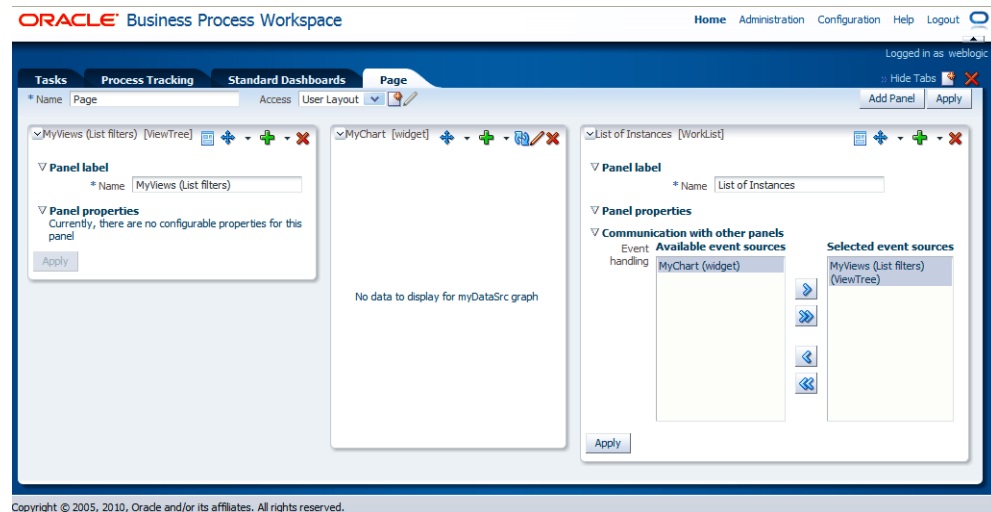
To establish communication between panels:

1. In the custom page, click **Edit Mode**. The entire page is available for editing.
2. In the panel you want to be the listener, click **Edit Mode**. The panel is available for editing.
3. In the panel, expand **Communication with other panels**.

- From the **Available event sources** list, select the source panels you want this panel to listen to, then move them to the **Selected event sources** list by clicking the right arrow.

Figure 5–5 shows an example of a Process Instance panel being configured to listen to a View Tree panel.

Figure 5–5 Establishing Communication Between Panels

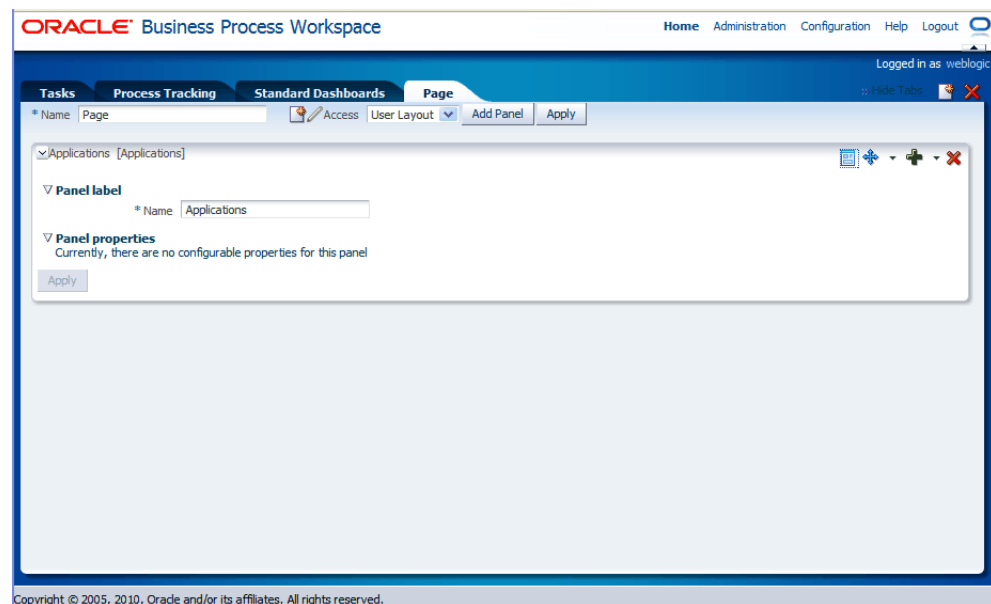


- Click **Apply**.

5.3 Editing Custom Pages and Panels in Process Workspace

Figure 5–6 shows an example of a custom page as it initially appears, with the panel available for editing.

Figure 5–6 Example of a Custom Page



This editable display of the panel enables you to define the name and properties for the new page. In addition, the icons in the upper right corner of the new page enable you to:

- Switch to View Mode—that is, the manner in which the page is ordinarily viewed. After you switch to View Mode, you can switch back to Edit Mode.
- Move the panel up, right, left, or down.
- Add another panel to the right, left, above, or below this one.
- Remove this panel.

Using Dashboards in Oracle Business Process Management Workspace (Process Workspace)

This chapter contains these topics:

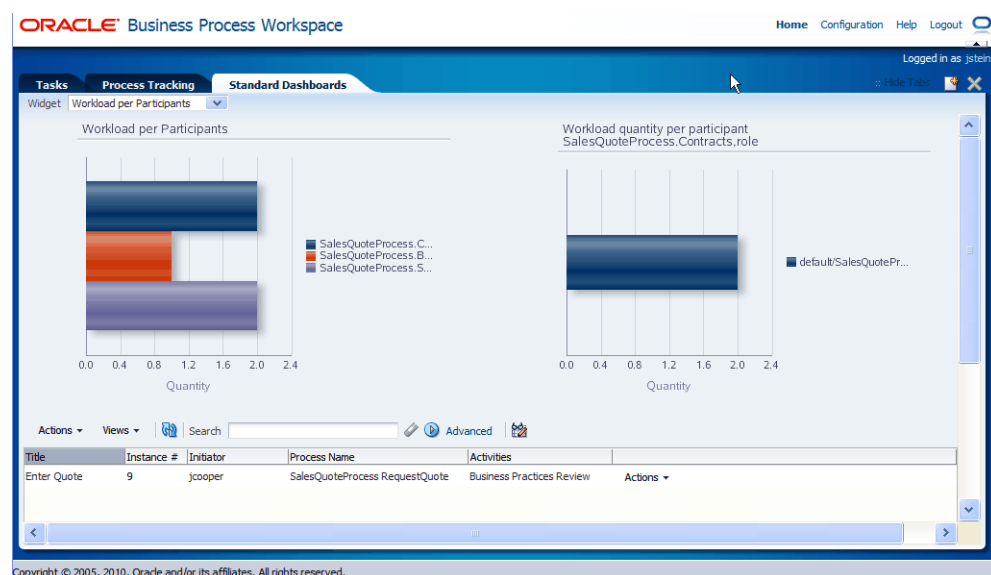
- Section 6.1, "Using Standard Dashboards"
- Section 6.2, "Creating Custom Dashboards"

6.1 Using Standard Dashboards

Standard dashboards are the graphs and drill-downs based on data previously computed in a process cube schema. They reflect the standard metrics gathered during the execution of a process.

Figure 6–1 shows an example of a participant workload dashboard.

Figure 6–1 Participant Workload Dashboard



In each of the standard dashboards, clicking a bar graph in the left pane causes data to be displayed graphically in the right pane. Clicking an item in the right pane displays certain data in the lower pane. This section explains how each type of dashboard operates.

This section contains these topics:

- [Section 6.1.1, "Participant Dashboards"](#)
- [Section 6.1.2, "Process Dashboards"](#)

6.1.1 Participant Dashboards

Two types of standard participant dashboards enable you to analyze:

- The workload of participants
- The performance of participants

6.1.1.1 Participant Workload Dashboard

The left panel of a participant workload dashboard displays the total number of active instances waiting for completion for each participant across all processes. When you drill down into the chart for a specific participant, the right panel displays the total number of active instances waiting for completion by process for either the selected participant or the selected role. The last drill-down displays the active instances waiting for completion for either the selected participant or the selected role and process.

Note: In this release, participant information in a workload dashboard is for the physical role corresponding to the swimlane for the task. When the swimlane role is not defined, the corresponding participant information is null.

6.1.1.2 Participant Performance Dashboard

The left panel of a participant performance dashboard displays the average time taken by participants across all processes. When you drill down into the chart for a specific participant, the right panel displays the average time taken to complete instances by process for the selected participant. The last drill-down displays the list of completed instances for either the selected participant or the selected role and process.

Note: In this release, for processes that have user tasks with multiple users, user information is captured only for the last user that updated the task.

6.1.2 Process Dashboards

Two types of standard process dashboards enable you to analyze:

- The number of process instances waiting for completion
- The average time taken per process

6.1.2.1 Process Workload Dashboard

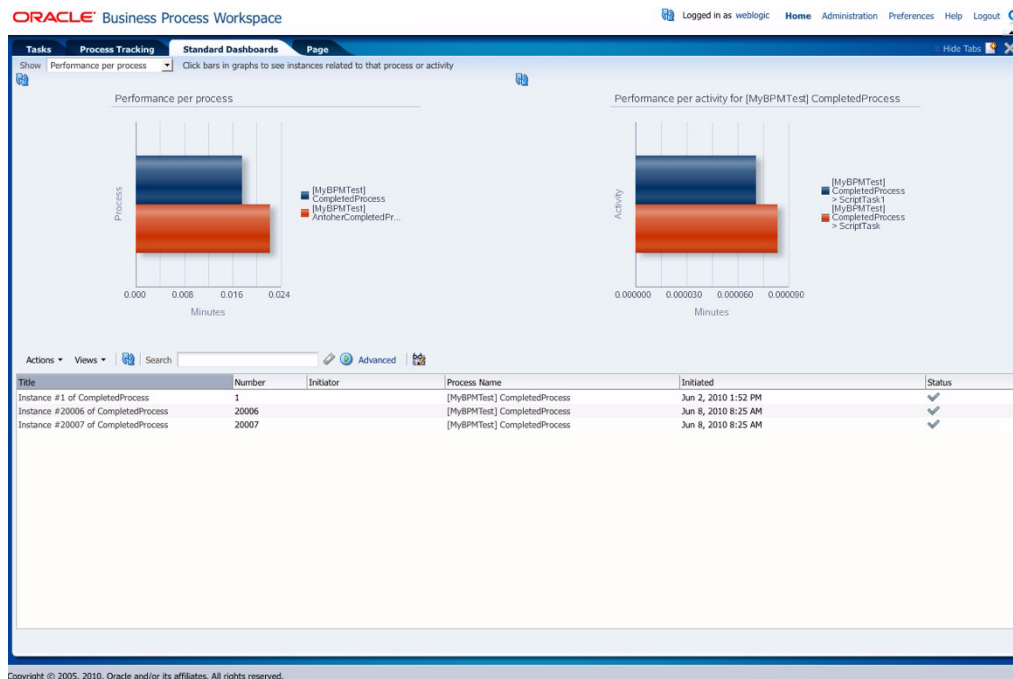
The left panel in the process workload dashboard displays the total number of active instances waiting for completion per process. When you drill down into a specific process, the right panel displays the total number of active instances waiting for completion for activities in the selected process. The last drill-down displays the active instances waiting for completion for the selected activity and process.

6.1.2.2 Process Performance Dashboard

The left panel in the process performance dashboard displays the average time taken per process. When you drill down into a specific process, the right panel displays the average time taken to complete by activities in the selected process. The last drill-down displays the completed instances for the selected activity and process.

Figure 6–2 shows a process performance dashboard.

Figure 6–2 Process Performance Dashboard



6.2 Creating Custom Dashboards

As with standard dashboards, custom dashboards are the graphs and drill-downs based on data previously computed in a process cube schema. They reflect the standard and user-defined metrics gathered during the execution of the process. They enable you to define new graphs using both standard metrics and user-defined metrics specified by using business indicators.

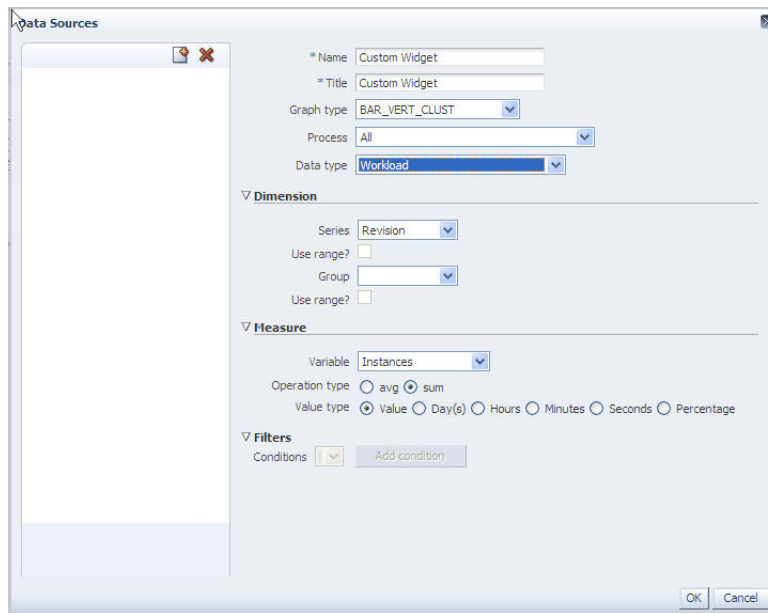
For instructions about adding a custom dashboard, see [Section 5.1.1, "How to Create a Custom Page"](#) on page 5-1.

6.2.1 Specifying Graph Content

Graph content is specified by defining a data source. [Figure 6–3](#) shows an example of the Data Sources dialog box.

For information about invoking the data source dialog box, see [Section 5.1.3, "How to Add a Dashboards Panel to a Customized Page."](#)

Figure 6–3 Specifying Data Sources



In the Data Sources dialog box, specify the following:

- Name: Provide a data source identifier
- Title: Provide the title used while displaying the data source
- Graph Type: Select one of the following list of graph types:
 - AREA_VERT_PERCENT
 - AREA_VERT_ABS
 - AREA_VERT_STACK
 - BAR_HORIZ_CLUSTER
 - BAR_HORIZ_PERCENT
 - BAR_HORIZ_STACK
 - BAR_VERT_CLUSTER
 - BAR_VERT_FLOAT_STACK
 - BAR_VERT_PERCENT
 - BAR_VERT_STACK
 - LINE_VERT_PERCENT
 - LINE_VERT_ABS
 - LINE_VERT_STACK
 - PIE
 - PIE_BAR
 - PIE_MULTI
 - THREED_AREA_SERIES
 - THREED_BAR

- **Process:** Select the process from the list. All business indicators associated with the selected process become available for the data source definition.
- **Data Type:** Select one of the following supported data types:
 - Workload
 - Activity and Measurement Sampling
 - Process Level Sampling

Dimensions

- **Series:** Specify the dimension.
- **Use Range:** Select to use ranges for dimensions with ranges.
- **Group:** Specify the dimension used to group the dimensions used in a series.
- **Use Range:** Select to use ranges for dimensions with ranges.

Table 6–1 summarizes the standard dimensions available based on the Data Type selection. Additionally, all the process specific dimensions are available.

Table 6–1 Standard Dimensions Available

	Workload	Activity and Measurement Sampling	Process Sampling
Dimension: Series	Revision Role Activities Participant	Revision Role Activities Participant Completion Date	Revision Completion Date
Dimension: Group	Participant	Participant Completion Date	Completion Date

Measurements

- **Variable:** Specify the measurement

Table 6–2 summarizes list of standard measurements available based on the Data Type selection. Additionally, all the process-specific measurements are available.

Table 6–2 Standard Measurements Available

	Workload	Activity and Measurement Sampling	Process Sampling
Measure	Instances Task Avg. Time Task Median Time Process Avg. Time Process Median Time	Task Time	Task Time

- **Operation Type:** Specify the aggregation functions to be applied on the measurement variables selected.

Table 6–3 summarizes the operation types that can be used with various Data Type selections.

Table 6–3 Operation Types Allowed

	Workload	Activity and Measurement Sampling	Process Sampling
Operation Type	Avg Sum	Avg Sum Min Max Count	Avg Sum Min Max Count

- **Value Type:** Specify either a value or a percentage
- **Filter Condition:** Specify the artifacts you want to view

Note: If a new process is deployed while you have a dashboards page open, the new process will not be listed in the Data Sources dialog box until you log out of Process Workspace and then log back in.

Managing Workloads Among Users in Oracle Business Process Management Workspace (Process Workspace)

Supervisors are users who have other users reporting to them. Supervisors can view and update all tasks assigned to all users who report to them. This chapter discusses the tasks that supervisors can perform.

This chapter contains these topics:

- [Section 7.1, "Managing the Availability of Users in Process Workspace"](#)
- [Section 7.2, "Creating Group Rules in Process Workspace"](#)
- [Section 7.3, "Setting Assignment Rules for Tasks with Multiple Assignees"](#)
- [Section 7.4, "Reassigning or Delegating Tasks in Process Workspace"](#)
- [Section 7.5, "Using Reports to Manage Workflows in Process Workspace"](#)
- [Section 7.6, "Using Dashboards to Manage Workflows in Process Workspace"](#)
- [Section 7.7, "Handling Escalations in Process Workspace"](#)

7.1 Managing the Availability of Users in Process Workspace

If a user is unavailable for a period of time and must delegate some or all assigned tasks to another user, then the user rules can automatically reassign the tasks based on certain conditions. More specifically, if a user is going on vacation, a vacation period can be associated with a rule to create a vacation rule.

For more information about creating user rules, see [Section 3.7.1, "How to Create User Rules in Process Workspace."](#)

For more information about setting a vacation rule, see [Section 3.7.3, "How to Enable a Vacation Period in Process Workspace."](#)

7.2 Creating Group Rules in Process Workspace

Creating a group rule is similar to creating a user rule, with the addition of a list of the groups that you, as the logged-in user, manage.

For information about creating user rules, see [Section 3.7.1, "How to Create User Rules in Process Workspace."](#)

Examples of group rules include:

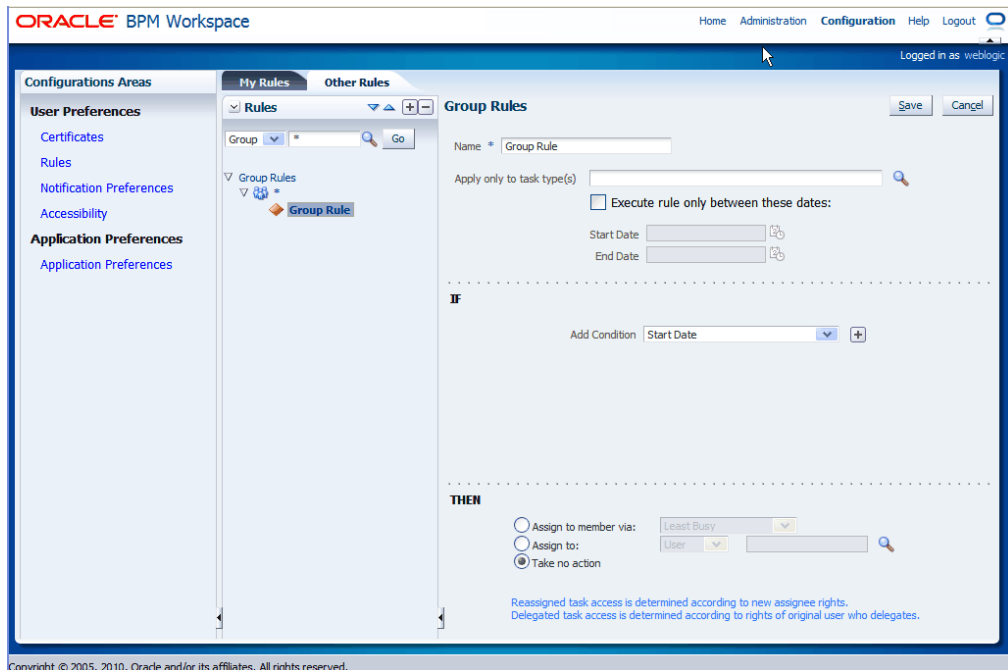
- Assigning tasks from a particular customer to a member of the group

- Ensuring an even distribution of task assignments to members of a group by using round-robin assignment
- Ensuring that high-priority tasks are routed to the least busy member of a group

To create a group rule:

1. From the toolbar, select **Configuration**. The **Configuration Areas** window is displayed.
2. Click the **Other Rules** page.
3. Select **Group** from the list.
4. Enter a group name and click the **Search** icon, or enter a group name. The Identity Browser opens for you to find and select a group.
5. Select the group name under the **Group Rules** node and click **Add**, as shown in Figure 7-1.

Figure 7-1 *Creating a Group Rule*



6. Provide a name for the rule.
7. In the **Apply only to task type(s)** field, browse for task types to which the rule applies.
8. in the **Execute rule only between these dates** section, provide the rule execution dates.
9. In the **IF** area, add the rule conditions.
10. In the **THEN** area, select the actions to be taken (or none). Group rules perform the following actions:
 - **Assign to member via**—You can specify a criterion to determine which member of the group gets the assignment. This dynamic assignment criterion can include round-robin assignment, assignment to the least busy group

member, or assignment to the most productive group member. You can also add your custom functions for allocating tasks to users in a group.

- **Assign to**—As with user rules, you can assign tasks to subordinates or groups you directly manage. If you were granted the BPMWorkflowReassign role, then you can reassign tasks to any user or group (outside your management hierarchy).
- **Take no action**—As with user rules, you can create a rule with a condition that prevents a more generic rule from being executed.

11. Click **Save**.

The new rule appears under the **Group Rules** node.

7.3 Setting Assignment Rules for Tasks with Multiple Assignees

For information about assignment rules for tasks with multiple assignees, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

7.4 Reassigning or Delegating Tasks in Process Workspace

A supervisor can reassign or delegate tasks to reportees. A user with BPMWorkflowReassign privileges can delegate a task to anyone.

For information about reassigning or delegating tasks, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

7.5 Using Reports to Manage Workflows in Process Workspace

Reports are available on the Tasks page in the Reports panel. Report results cannot be saved.

[Figure 7–2](#) shows the Reports panel displaying the standard report types available.

Figure 7–2 Oracle Business Process Management Workspace Reports



[Table 7–1](#) lists the worklist reports available for task analysis.

Table 7–1 Process Workspace Report Types

Report Name	Description	Input Parameters
Unattended Tasks	Provides an analysis of tasks assigned to users' groups or reportees' groups that have not yet been assigned (the unattended tasks).	<ul style="list-style-type: none"> ■ Assignee—This option (required) selects tasks assigned to the user's group (My Group), tasks assigned to the reportee's groups (Reportees), tasks where the user is a creator (Creator), or tasks where the user is an owner (Owner). ■ Creation Date—An optional date range ■ Expiration Date—An optional date range ■ Task State—The state (optional) can be Any, Assigned, Expired, or Information Requested. ■ Priority—The priority (optional) can be Any, Highest, High, Normal, Low, or Lowest.
Tasks Priority	Provides an analysis of the number of tasks assigned to a user, reportees, or their groups, broken down by priority.	<ul style="list-style-type: none"> ■ Assignee—Depending on the assignee that you select, this required option includes tasks assigned to the logged-in user (My), tasks assigned to the user and groups that the user belongs to (My & Group), or tasks assigned to groups to which the user's reportees belong (Reportees). ■ Creation Date—An optional date range ■ End Date—An optional date range for the end dates of the tasks to be included in the report ■ Priority—The priority (optional) can be Any, Highest, High, Normal, Low, or Lowest.
Tasks Cycle Time	Provides an analysis of the time taken to complete tasks from assignment to completion based on users' groups or reportees' groups.	<ul style="list-style-type: none"> ■ Assignee—Depending on the assignee that you select, this required option includes your tasks (My) or tasks assigned to groups to which your reportees belong (Reportees). ■ Creation Date—An optional date range ■ End Date—An optional date range for the end dates of the tasks to be included in the report ■ Priority—The priority (optional) can be Any, Highest, High, Normal, Low, or Lowest.
Tasks Productivity	Provides an analysis of assigned tasks and completed tasks in a given time period for a user, reportees, or their groups.	<ul style="list-style-type: none"> ■ Assignee—Depending on the assignee that the user selects, this required option includes the user's tasks (My & Group) or tasks assigned to groups to which the user's reportees belong (Reportees). ■ Creation Date (range)—An optional creation date range. The default is one week. ■ Task Type—Use the Search (flashlight) icon to select from a list of task titles. All versions of a task are listed on the Select Workflow Task Type page (optional).
Tasks Time Distribution	Provides the time an assignee takes to perform a task.	<ul style="list-style-type: none"> ■ Assignee—Depending on the assignee that the user selects, this required option includes the user's tasks (My & Group) or tasks assigned to groups to which the user's reportees belong (Reportees). ■ From...to (date range)—An optional creation date range. The default is one week. ■ Task Type—Use the Search (flashlight) icon to select from a list of task titles. All versions of a task are listed on the Select Workflow Task Type page (optional).

7.5.1 How to Create Reports

To create a report:

1. In the Tasks page, in the Reports panel, click the type of report you want to create. The details for that type of report appear in the right pane.
2. In the right pane, specify the search parameters of the report. [Table 7–1](#) provides information about input parameters for all the report types.

[Figure 7–3](#) shows an example of the Unattended Tasks Report input page.

Figure 7-3 Unattended Tasks Report—Input Page for Task Analysis

Unattended Tasks Report
Provides an analysis of tasks assigned to users' groups or reportees' groups that need attention because they have not yet been acquired

Assignee: Me & Group

Creation Date: [] to []

Expiration Date: [] to []

Task State: Any

Priority: Any

Run

3. Click **Run**.

7.5.2 What Happens When You Create Reports

For information about what happens when you create reports, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

7.6 Using Dashboards to Manage Workflows in Process Workspace

Dashboards provide a variety of analytical information about the workload on users for the different processes being executed. For example, if a specific user has many tasks assigned to her, and she is making little progress, this would indicate that all those corresponding processes are blocked. Having this information enables you to reassign those tasks to someone else and, if necessary some user or group routing rules can be specified to manage the issue in the short term.

For more information about dashboards, see [Chapter 6, "Using Dashboards in Oracle Business Process Management Workspace \(Process Workspace\)"](#).

7.7 Handling Escalations in Process Workspace

If a user escalates a task, it is automatically assigned to his or her supervisor. The manager can then decide what type of action to perform on the task.

Escalations are among the system actions you can perform from the Task Details page.

For more information about the Task Details page, see [Section A.2, "The Process Workspace Task Details Page"](#).

For information about the system actions you can perform from the Task Details page, see [Table A-2](#).

Performing Administration in Oracle Business Process Management Workspace (Process Workspace)

This chapter explains the various tasks an administrator can perform in Process Workspace.

This chapter contains these topics:

- [Section 8.1, "Setting the Display of the Work Items Panel \(Application Preferences\) in Process Workspace"](#)
- [Section 8.2, "Managing Other Users' or Groups' Rules \(as an Administrator\) in Process Workspace"](#)
- [Section 8.3, "Managing Your Organization in Process Workspace"](#)
- [Section 8.4, "Managing Tasks as an Administrator in Process Workspace"](#)
- [Section 8.5, "Using the User Metadata Migration Utility"](#)

8.1 Setting the Display of the Work Items Panel (Application Preferences) in Process Workspace

Application preferences customize the appearance of the worklist. Administrators can specify the following:

- **Login page realm label**—If the identity service is configured with multiple realms, then the Oracle BPM Worklist login page displays a list of realm names. The `LABEL_LOGIN_REALM` parameter specifies the resource bundle key used to look up the label to display these realms. The term *realm* can be changed to fit the user community—terms such as country, company, division, or department may be more appropriate. Administrators can customize the resource bundle, specify a resource key for this string, and then set this parameter to point to the resource key.
- **Global branding icon**—This is the image displayed in the top left corner of every page of the worklist. (The Oracle logo is the default.) Administrators can provide a `.gif`, `.png`, or `.jpg` file for the logo. This file must be in the `public_html` directory.
- **Resource bundle**—An application resource bundle provides the strings displayed in the worklist. By default, this is the class at:

```
oracle.bpel.worklistapp.resource.WorklistResourceBundle
```

Administrators can change the strings shown in the application by copying `WorkflowResourceBundle` and customizing it. This parameter allows administrators to specify the class path to this custom resource bundle.

Administrators must extend `WorklistResourceBundle.java` by adding their resource strings. Administrators can change the strings shown in the application by copying `WorkflowResourceBundle` and customizing it. This parameter allows administrators to specify the class path to this custom resource bundle. Then administrators create a JAR file from the compiled resource bundle and copy it under

`SOA_Oracle_Home\j2ee\home\applications\worklist\worklist\WEB-INF\lib`

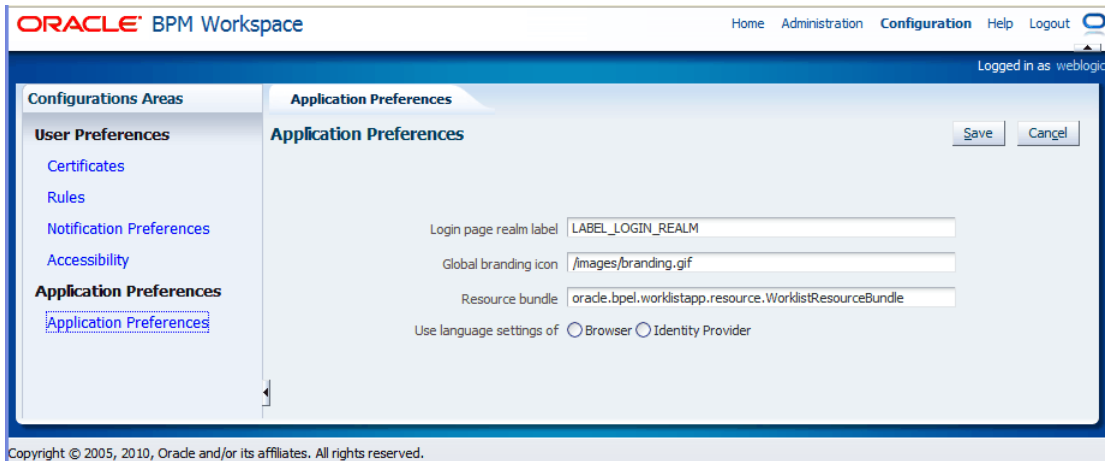
- **Use language settings of**—Select the browser or the identity provider.

The identity provider that stores information about worklist users can store the user's locale, which can determine the worklist display language. Alternatively, the user's browser can supply the locale information. This parameter determines which is used as the source for determining the worklist application display language.

To specify application preferences:

1. Click **Administration**.
2. Click **Application Preferences**.
3. Browse for the locations of the application preferences (login page realm label, branding icon, or resource bundle), as shown in [Figure 8–1](#).

Figure 8–1 Application Preferences



4. Select which language settings you want to use—from the browser or the identity provider.
5. Click **Save**.

8.2 Managing Other Users' or Groups' Rules (as an Administrator) in Process Workspace

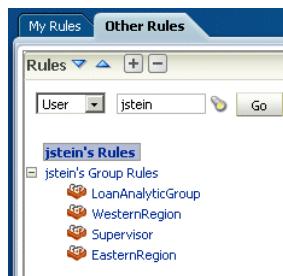
Administrators can make changes to rules. This ability is useful for correcting a problem with a rule. For example, for a user who no longer works for the company,

administrators can set up a rule for that user so that all tasks assigned to the user are automatically assigned to another user or group.

To create a rule for another user or group:

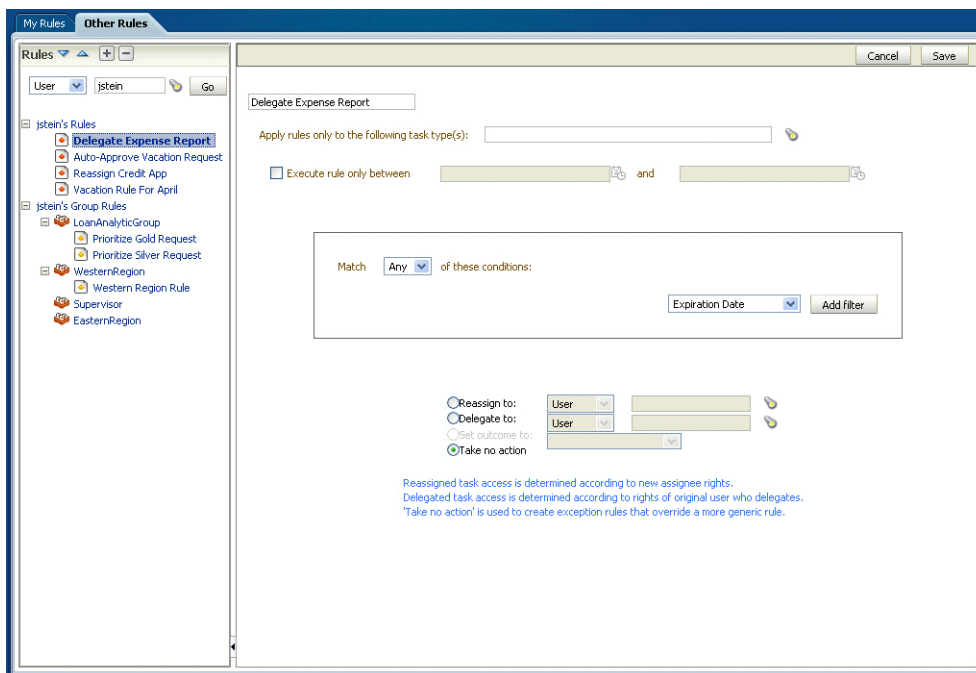
1. From the Process Workspace toolbar, click **Configuration**.
From the Configuration panel, in the Rules section, click **Rules**.
2. Click the **Other Rules** tab.
3. Search for the user or group for whom rules are to be created, as shown in [Figure 8-2](#).

Figure 8-2 *Creating Rules for Another User or Group*



4. Click a user rules node, or click a group name (for a group rule).
5. Click the **Add** icon to create a rule.
6. Provide rule information, as shown in [Figure 8-3](#), and click **Save**.

Figure 8-3 *Defining Rules for Another User or Group*



8.3 Managing Your Organization in Process Workspace

Oracle Business Process Management Suite enables you to model an organization by defining organizational units, business calendars, business holidays, roles, and other user properties.

This section contains these topics:

- [Section 8.3.1, "Understanding Deployment of Organization Entities in Process Workspace"](#)
- [Section 8.3.2, "Managing Holiday Rules in Process Workspace"](#)
- [Section 8.3.3, "Managing Calendar Rules in Process Workspace"](#)
- [Section 8.3.4, "Managing Roles in Process Workspace"](#)
- [Section 8.3.5, "Managing Organization Roles in Process Workspace"](#)
- [Section 8.3.6, "Extending User Properties in Process Workspace"](#)
- [Section 8.3.7, "Managing Organizational Units in Process Workspace"](#)

8.3.1 Understanding Deployment of Organization Entities in Process Workspace

At deployment time, the various organization entities—for example, the organizational unit, calendar, and so on—are created. Later, when the process is redeployed, those entities are not modified. After a process is created, modification can happen only through Process Workspace. This is to prevent data in Oracle BPM Studio overwriting what can be changed during run time.

8.3.2 Managing Holiday Rules in Process Workspace

Business holidays are collections of holidays that can be applied to calendar rules. Then, when computing the duration of a process, the calendar takes into account the specified holidays.

You can create as many holiday rules as needed for different calendar rules. For example, if you apply holiday rules for India, the United States, and China to a given calendar, then those various national holidays are taken into account when the duration of a process is computed.

When you create a business holiday rule, you specify the holiday name, date, and holiday type. [Table 8–1](#) lists and describes the holiday types.

Table 8–1 *Holiday Types*

Holiday Type	Description
Same Day Every Year	On the same day each year
Current Year	In the current year only
Nth Week Day of Month	In a specified week, on a specified day, in a specified month each year—for example, in the United States, Thanksgiving Day is celebrated each year on the fourth Thursday of November
Nth Day of Reference Holiday	On a day in relation to another specified holiday—for example, on the day after Thanksgiving Day
Closest week day	The closest day to a given date—for example, in the United States, the Independence Day holiday may be celebrated on the weekday closest to the Fourth of July.

To create a holiday rule:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Calendars**. The Calendars page appears.
3. In the Holidays List section, click **Add a Holidays List**. The Add a Holidays List dialog prompts you for the name of the new holiday list.
4. Enter the name of the new holidays list and click **OK**. The new holidays list appears in the holidays list.
5. Select the new holidays list. The details for the new list appear in the right pane.
6. In the holiday details section, click **Add a Holiday**. A row appears for you to specify the attributes of the new holiday.
7. Specify the name of the holiday, and the day on which the holiday occurs each year. Options for specifying holiday occurrence are described in [Table 8-1](#).
8. Click **Apply**. The new holiday rule is configured according to your specifications.

To edit a holiday rule:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Calendars**. The Calendars panel appears in the right pane.
3. In the Holidays List section, select the holiday rule you want to edit. The details page for the rule appears in the right pane.
4. Change the settings, and click **Apply**. The holiday rule is now modified according to your specifications.

To delete a holiday rule:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Calendars**. The Calendars panel appears in the right pane.
3. In the Holidays List section, select the holiday rule you want to delete. The details for the rule appears in the right pane.
4. Click **Delete Holiday Rule**. The holiday rule is now deleted.

8.3.3 Managing Calendar Rules in Process Workspace

A business calendar defines a work pattern for each day and a work week structure for each week. In addition, a calendar also defines non-working days by using business holiday rules—that is, the business calendar and holiday rule together define the work period.

When you create a business calendar, you define the following:

- Calendar name
- Time zone
- Working days in week
- Start time and end time for each day

- Optional holiday rule

You can create as many calendars as necessary.

You can specify a business calendar for a role and organizational unit association. For example, you can specify that the InsuranceAgents role in the US-California organizational unit follows the US-California business calendar.

To create a calendar rule:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Calendars**. The Calendars page appears in the right pane.
3. In the Calendars section, click **Add a Calendar Rule**. The Add a Calendar Rule dialog prompts you for the name of the new calendar rule.
4. Enter the name of the new calendar rule, and click **OK**. The new calendar rule appears in the Calendars list.
5. Select the new calendar rule. The details for the new rule appears in the right pane.
6. Specify the following:
 - The time zone
 - The holiday rule, if any, that applies
 - The appropriate starting and finishing times
7. Click **Apply**. The new calendar rule is now configured according to your specifications.

To edit a calendar rule:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Calendars**. The Calendars page appears in the right pane.
3. Select the calendar rule you want to edit. The details page for the new rule appears in the right pane.
4. Change the settings, and click **Apply**. The calendar rule is now modified according to your specifications.

To associate a calendar rule with a role and an organization unit:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Roles**. The Roles panel displays a list of the roles you are authorized to administer.
3. In the Details panel, in the Calendars section, click **Associate a new calendar rule to an organization unit for the application role**. Calendar and Organization Unit lists appear in the Calendar section.
4. Using Calendar and Organization Unit lists, specify the calendar and organization unit to which you want to associate this role.
5. Click **Apply**.

To associate a calendar with an organization unit:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. Under Organization, click **Organizational Units**. The Organizational Units panel appears.
3. Select the organizational unit with which you want to associate a calendar rule. The details for that organizational unit appear in the right pane.
4. In the Details panel, from the Calendars list, select the calendar to associate with this organizational unit.
5. Click **Apply**.

To delete a calendar rule:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Calendars**. The Calendars panel appears in the right pane.
3. In the Calendars section, select the calendar rule you want to delete. The details for the rule appears in the right pane.
4. Click **Delete Calendar**. The calendar is now deleted.

8.3.4 Managing Roles in Process Workspace

Roles are created as application roles under the application OracleBPMProcessRolesApp. There are two types:

- **Swimlane roles:** Each swimlane role in a BPM process is created during design time in Oracle BPM Studio. It is then mapped to an application role that is created during deployment. This mapping cannot be changed after deployment.

Members for these application roles can be defined and updated before deployment by using Oracle BPM Studio or after deployment by using Process Workspace.

In this release, swimlanes define the default task assignee and how to initiate a process if the initiator task pattern is used. During runtime, only members of those roles can perform actions such as viewing and acting on tasks and initiating processes.

- **Application roles:** These represent any roles in the organization, and they can be created in addition to the swimlane roles defined during design time. An application role can be used as a task assignee or as a grantee of another application role. They can be created by using either Oracle BPM Studio or Process Workspace.

When you create a role, you define both the role name and the grantees of the role. The grantees can be users, groups, or other application roles.

8.3.4.1 How to Add New Application Roles

To add a new application role:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.

2. In the Organization panel, click **Roles**. The Roles panel displays a list of the roles you are authorized to administer.
3. In the upper-right corner of the Roles panel, click **Add a new application role**. The Add Role dialog box appears.
4. Specify a name, and, optionally, a description for the new role. Click **OK**. The new role is now listed in the Roles panel.
5. To grant this role to users, groups or application roles, follow the steps in [Section 8.3.4.2, "How to Grant and Revoke Roles"](#).
6. To associate a calendar and its corresponding organizational unit with this new role, in the Calendar section:
 - a. Select **Associate a new calendar rule to an organization unit for the application role**.
 - b. From the Calendar list, select the calendar you want to associate with this new role.
 - c. From the Organization Unit list, select the unit that you want to associate with the calendar you just specified.

Note: When a calendar is associated with an organization unit for a role, this calendar overrides the calendar associated with the calendar page when the particular role is used.

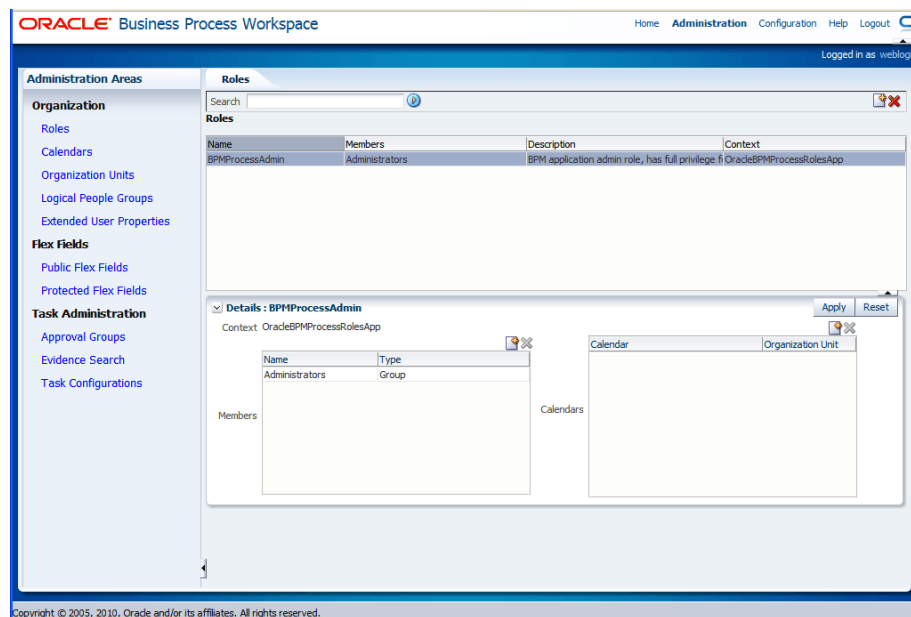
8.3.4.2 How to Grant and Revoke Roles

You can grant roles to, and revoke them from, users, groups, or application roles

To grant a role to a user, group, or application role:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Roles**. The Roles panel displays a list of the roles you are authorized to administer.
3. Select a role. The Details panel displays the details for the selected role, as shown in [Figure 8-4](#).

Figure 8–4 Role Details Panel



4. In the Members section, click **Grant the role to user, group, or role**.
5. Specify the parameters of your search, click **Search**, then select the user, group, or application role to whom you want to grant this role. The Details section for your selection appears.
6. Click **OK**. The user or group you specified now appears in the Members box.

To revoke a role from a user, group, or application role:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Roles**. The Roles panel displays a list of the roles you are authorized to administer.
3. Select a role. The Details panel displays the details for the selected role..
4. In the Members section, click **Revoke the role from user, group, or role**.
5. Click **OK**. The user or group you specified no longer appears in the Members box.

Note: Process Workspace caches the user’s role information for the duration of the session. As a result, if you are an administrator, and you grant a role to or revoke a role from yourself as the administrator, you will not see the change reflected in the interface until you terminate the session and open a new one. Terminate the session by logging out, then log back in.

8.3.4.3 How to Create and Manage Role-Specific Views and Layouts

For information about creating a role-specific layout, see [Section 5.1, "Creating Custom Pages in Process Workspace"](#)

8.3.5 Managing Organization Roles in Process Workspace

Organization roles are groups of users specified by using a query. These roles are dynamic—for example, all grantees of role InsuranceAgent with expertise in HomeInsurance where expertise is an extended user property.

The query can contain one or more of the following parts:

- Group membership
- Role membership
- Extended user properties

For information about extended user properties, see [Section 8.3.6, "Extending User Properties in Process Workspace"](#).

Note: Deleting an extended user property already in use by an organization role causes an error when administering that role.

An organization role can be a member of organizational unit.

To associate properties to users, you must have a manager role in relation to those users.

Organization roles can be based only on process roles that can be created in the Administration Areas panel in Process Workspace.

You can define several parameters of which some, none, or all can be evaluated and used at run time.

To create an organization role:

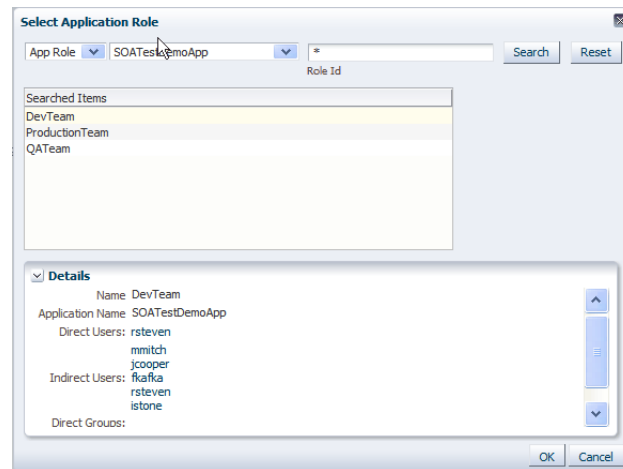
1. From the Process Workspace toolbar, click **Administration**. The Administration Areas panel appears in the left pane.
2. Select **Organization Role**. The Organization Role panel appears in the right pane.
3. In the Organization Role panel, click **Create Organization Role**. This opens an editable Details panel.
4. Enter a name for this organization role, and specify the conditions users in this role must meet.
5. From the Grantees list, select either **Groups** or **Application Roles**.

If you select **Groups**:

- a. Either enter the name of the group in the text field, or click **Select Group** to begin a search. The Select Group dialog box appears.
- b. Specify your search, or use an asterisk (*) as a wildcard, then click **OK**. The group you specified is listed as the grantee of this organization role.

If you select **Application Role**:

- a. From the **Application Role** list, select the application role you are granting.
- b. If you know the role identifier of the grantee, enter it in the Role Id field. Otherwise, you can use an asterisk (*) as a wildcard.
- c. Click **Search**. The search results appear in the Searched Items panel.
- d. Select a role from the Searched Items list. More detailed information for that role appears in the Details panel.

Figure 8–5 Searching for an Application Role

- e. Click **OK**. The role you specified is listed as the grantee of this organization role.
6. Click **Apply**.

To modify an organization role:

1. From the Process Workspace toolbar, click **Administration**. The Administration Areas panel appears in the left pane.
2. Select **Organization Role**. The Organization Role panel appears in the right pane.
3. From the Organization Role panel, select the role you want to modify. The Details panel for that role appears to the right.
4. Enter the new values for the role just as you did when you created the role. See "[To create an organization role:](#)" on page 8-10.
5. Click **Apply**.

To delete an organization role:

1. From the Process Workspace toolbar, click **Administration**. The Administration Areas panel appears in the left pane.
2. Select **Organization Role**. The Organization Role panel appears in the right pane.
3. From the Organization Role panel, select the role you want to delete. The Details panel for that role appears to the right.
4. Click **Delete Organization Role** and, when prompted, confirm the deletion.

8.3.6 Extending User Properties in Process Workspace

Extended user properties are used in defining organization roles, which are described in [Section 8.3.5, "Managing Organization Roles in Process Workspace."](#)

Typically, users have some properties specified in Oracle Internet Directory or some other LDAP directory. Often, however, additional properties specific to their organization and roles are necessary. At times, these properties are added on demand when newer business processes are created. At that time, it might not be possible to extend the company's global LDAP directory. In these cases, extended user properties are useful. For example, you can specify that a given user with the sales representative role is located in California. Although, from a functional point of view, there is only

one role, the individual user is associated with a property, and that property has a value assigned for that user.

Extended user properties can be assigned to users, groups, or roles.

When you create extended user properties, you define the following:

- Property name
- Property type, which can be of the following data types: string, number, date and free form text. String data types are enumerated values. Free form strings can have any value.
- Enumeration in case of a string data type. Note that only string-typed properties can be assigned values at the time of definition and only those values can be assigned to users when the property is associated with a user.

After properties are defined, they can be associated with any user. During association, values must be assigned to the property for that user

Only users who have Administrator privileges can define new properties.

To add extended user properties:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Extended User Properties**. The Extended User Properties page appears in the right pane.
3. In the **Properties** pane, click **Add Property**. Property fields appear in the table.

An Extended User Property has the following fields:

- Name—The name can be any user defined string that is meaningful to the user or the company. Case does not matter. The system will convert all names to uppercase.
- Type—The type field is a drop-down list from which the user must select the data type of the values that the property is expected to hold when it is associated with various users in the organization.
- Value—The value field is meaningful only when the property is assigned the data type string because only string typed properties can be assigned enumerations of values. For all other data types (number, date and freeform text) no values can be assigned to the property.

For number, date, and freeform text-typed properties, a value is assigned to the property only when the property is associated to a user and the value assigned can be different for each user.

4. After you specify the property, click **Apply**. A column for this property appears in the Map Properties pane.

To modify extended user properties:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Extended User Properties**. The Extended User Properties page appears in the right pane.
3. In the **Properties** pane, select the property you want to edit, then click **Edit Property**. The row for that property becomes editable.
4. Enter your changes, then click **Apply**.

To delete extended user properties:

Note: Deleting an extended user property already in use by an organization role causes an error when administering that role.

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. In the Organization panel, click **Extended User Properties**. The Extended User Properties page appears in the right pane.
3. In the Properties pane, select the property you want to delete, then click **Delete Property**. A Confirm Delete dialog box advises you that deleting a property will dissociate this property from an associated user, if any. If you are sure you want to proceed, click **Yes**.
4. In the Properties pane, click **Apply**.

To associate extended user properties to users:

1. To specify the user with whom this property is to be associated, in the Map Properties pane, click **Add User**. The User field appears.
2. Specify the user. You can do this either by entering the user identifier in the field or by clicking **Select User**, and, in the Identity Browser window that appears, performing a search for the user and clicking **OK**.
3. In the Map Properties pane, from the column for the property, select the property to assign to this user.

Note: The **All** check box means that you wish to assign all the values defined on the string property to a particular user. It does not mean that you are assigning all the properties defined in the system to the user. The purpose of the **All** check box must be understood in the context that a user can be assigned multiple values for a string and a freeform text typed property. For string-typed properties the values that you can assign to a user are enumerated at the time of property definition itself and the All checkbox enables you to assign all of them to a user at once. Freeform text-typed properties do not have any values defined on them. To assign multiple values to a freeform text-typed property at the time of associating it to a user, enter the multiple values and separate each value by a comma.

4. After you map the property to the user, in the Map Properties pane, click **Apply**.

8.3.7 Managing Organizational Units in Process Workspace

An organizational unit represents departments or divisions within an organization. Organizational units can contain child organizational units, creating a hierarchy that corresponds to your organization.

When you create an organizational unit, you define the following:

- Organizational unit name
- Time zone

- Members of the organizational unit, which can include users, groups, application roles, or organization roles
- Optional parent organizational unit
- Optional business calendar

When a process is associated with an organizational unit, only members of that organizational unit and its children can see that process and the tasks initiated by it.

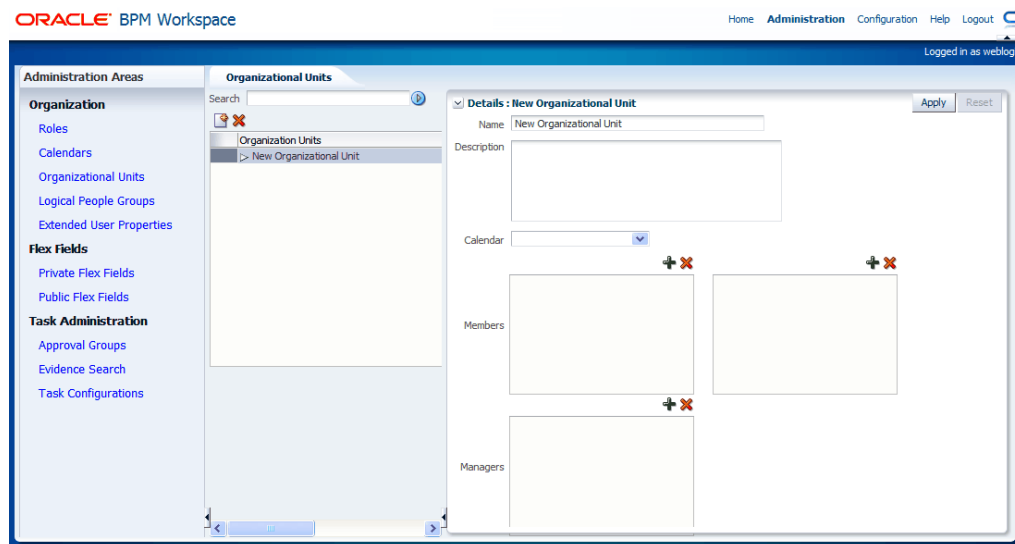
Note: A manager is not a member of an organizational unit by default. The manager must be added to the organizational unit in order to see the processes and the tasks within it.

If a process is associated with an organizational unit, then the tasks initiated by the process can use the business calendar associated with the organizational unit. Please see [Section 8.3.3, "Managing Calendar Rules in Process Workspace"](#) for more information.

To create an organizational unit:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. Under Organization, click **Organizational Units**. The Organizational Units panel appears.
3. From the **Add Organizational Unit** list, select either **Root Organization Unit** or **Child Organization Unit**. The Create New Org Unit dialog box prompts you for the name of the organizational unit.
4. Enter the name of the organizational unit, and click **OK**. The new organizational unit appears in the Organizational Units list as shown in [Figure 8–6](#).

Figure 8–6 Adding an Organizational Unit



5. In the right pane, in the Details section for the new organizational unit, do the following:
 - a. Optionally provide a description of the newly created organizational unit.

- b. From the Calendar list, select a calendar rule to associate with this organizational unit.

For information about adding a calendar rule, see [Section 8.3.3, "Managing Calendar Rules in Process Workspace"](#).

- c. In the Members window, click **Add new member**. The Select Member dialog box prompts you to search for a user or group to add to this organizational unit.
- d. Enter the name of the user or group you want to add, then click **Search**. From the Available column, select one or more members you want to add, and use the arrow button to move them to the Selected column. Click **OK**. The members you added appear in the Members window.
- e. Similarly, in the Managers window, select **Add new member**. The Select Manager dialog box prompts you to search for a user or group to add to this organizational unit.
- f. Enter the name of the manager you want to add, then click **Search**. From the Available column, select one or more managers you want to add, and use the arrow button to move them to the Selected column. Click **OK**. The managers you added appear in the Members window.

6. Click **Apply**.

To edit an organizational unit:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. Under Organization, click **Organizational Units**. The Organizational Units panel appears.
3. In the Organization Units panel, select the organizational unit you want to edit.
4. In the right pane, in the Details section for the new organizational unit, make the changes you want, then click **Apply**.

To delete an organizational unit:

1. From the Process Workspace toolbar, select **Administration**. The Administration Areas panel appears.
2. Under Organization, click **Organizational Units**. The Organizational Units panel appears.
3. In the Organization Units panel, select the organizational unit you want to delete, and click **Delete Organization Unit**.

8.4 Managing Tasks as an Administrator in Process Workspace

This section contains these topics:

- [Section 8.4.1, "Using Flex Fields in Process Workspace"](#)
- [Section 8.4.2, "Administering Approval Groups in Process Workspace"](#)
- [Section 8.4.3, "Using Task Configuration in Process Workspace"](#)
- [Section 8.4.4, "Using Evidence Search in Process Workspace"](#)
- [Section 8.4.5, "Managing Exceptions in Process Workspace"](#)

8.4.1 Using Flex Fields in Process Workspace

Human workflow flex fields store and query use case-specific custom attributes. These custom attributes typically come from the task payload values. Storing custom attributes in flex fields provides the following benefits:

- They can be displayed as a column in the task listing
- They can filter tasks in custom views and advanced searches
- They can be used for a keyword-based search

For example the Requester, PurchaseOrderID, and Amount fields in a purchase order request payload of a task can be stored in the flex fields. An approver logging into Process Workspace can see these fields as column values in the task list and decide which task to access. The user can define views that filter tasks based on the flex fields. For example, a user can create views for purchase order approvals based on different amount ranges. If the user must also retrieve tasks related to a specific requester or a purchase order ID, the user can specify this in the keyword field and perform a search to retrieve the relevant tasks.

For the flex fields to be populated, an administrator must create flex field mappings, as follows:

1. Specify a label for the flex field to be populated.
2. Map the payload attribute that contains the data to the label.

These mappings are valid for a certain task type. Therefore, each task type can have different flex field mappings. After the mapping is complete and a new task is initiated, the value of the payload is transferred to the mapped flex field. Tasks initiated before the mapping do not contain the value in the flex field. Only top-level simple type attributes in the payload can be transferred to a flex field. Complex attributes or simple types nested inside a complex attribute cannot be promoted. It is important to define the payload for a task in the Human Task Editor, keeping in mind which attributes from the payload may must promoted to a flex field. All text and number flex fields are automatically included in the keyword-based search.

Essentially, the Human Task Editor is used only when defining the payload for a task. All other operations are performed at runtime.

Directory naming is not available concomitantly with the flex file naming convention.

Note: Flex fields must be defined before instances of the business process are generated. Only instances generated after flex fields are created reflect the correct flex fields. Older instances of the business process do not reflect subsequent flex field changes.

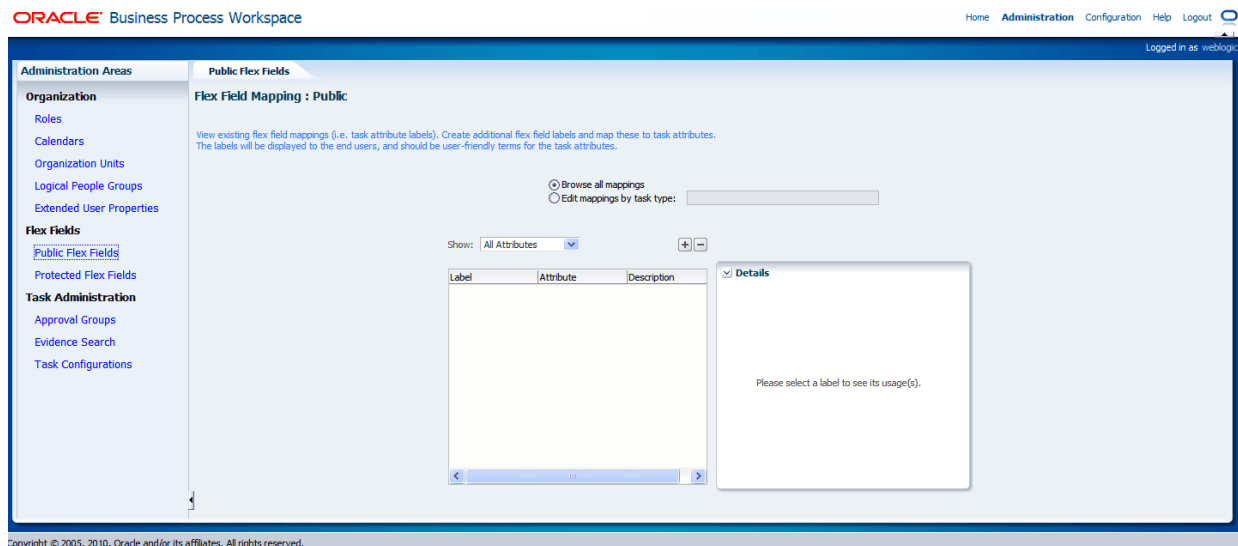
For more information about how to map flex fields, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

8.4.1.1 How to Map Flex Fields

An administrator, or users with special privileges, can use flex field mapping, shown in [Figure 8-7](#), to transfer data from the payload to inline attribute flex fields. By promoting data to flex fields, the data becomes searchable and can be displayed as columns on the task list.

Administrators can map public flex fields. Users who have been granted the `workflow.mapping.publicFlexField` privilege can map public flex fields, and see a **Public Flex Fields** node in the **Administration** panel.

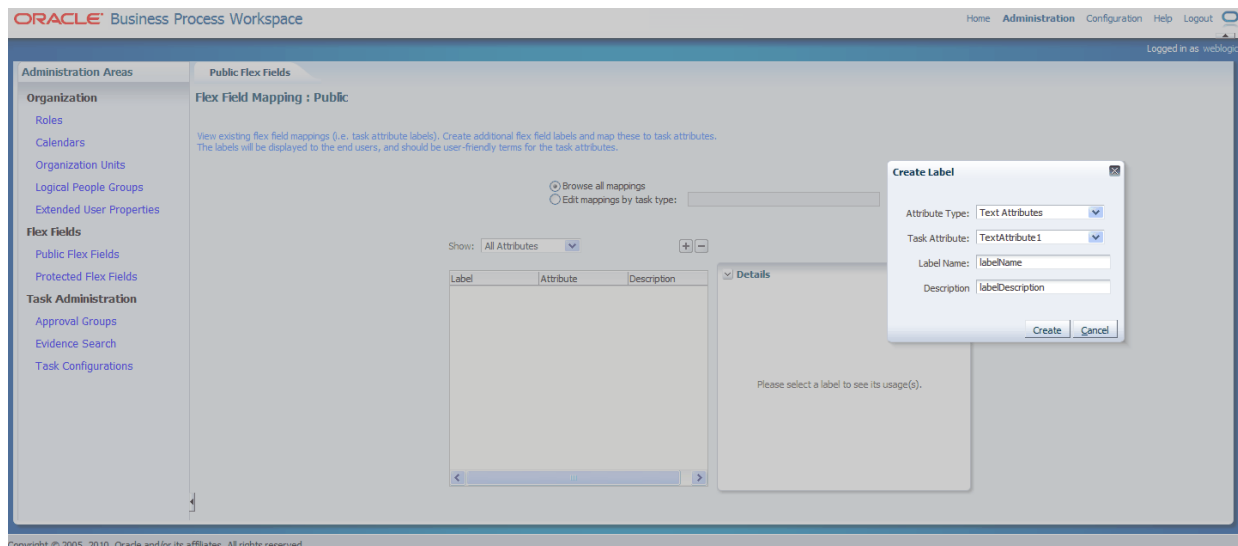
Figure 8–7 Flex Field Mapping



To create labels:

To create a flex field mapping, an administrator first defines a semantic label, which provides a more meaningful display name for the flex field attribute. Click **Add** to use the Create Label dialog box shown in [Figure 8–8](#).

Figure 8–8 Creating a Label



As the figure shows, `labelName` is mapped to the task attribute `TextAttribute1`. The payload attribute is also mapped to the label. In this example, the `Text` attribute type is associated with `labelName`. The result is that the value of the `Text` attribute is stored in the `TextAttribute3` column, and `labelName` is the column label displayed in the user's task list. Labels can be reused for different task types. You can delete a label only if it is not used in any mappings.

A mapped payload attribute can also be displayed as a column in a custom view and used as a filter condition in both custom views and workflow rules. The display name of the payload attribute is the attribute label that is selected when doing the mapping.

Note the following restrictions:

- Only simple type payload attributes can be mapped.
- A flex field (and thus a label) can be used only once per task type.
- Data type conversion is not supported for the number or date data types. For example, you cannot map a payload attribute that is assigned the `string` datatype to a label that is assigned the datatype number.

To browse all mappings:

1. Click **Browse all mappings**.
2. Select a row in the label table to display all the payload attributes mapped to a particular label.

To edit mappings by task type:

1. Click **Edit mappings by task type**, optionally provide a task type, and click **Search**.
2. Select a task type and click **OK**.
3. With the task type displayed in the **Edit mappings by task type** field, click **Go**.
4. Select a mapping label and click **Select**.

8.4.2 Administering Approval Groups in Process Workspace

An approval group consists of a name and a predefined set of users configured to act on a task in a certain pattern. This pattern is similar to a human workflow routing slip pattern where users can act on tasks in serial or parallel. An approval group also can contain a nested approval group in the pattern.

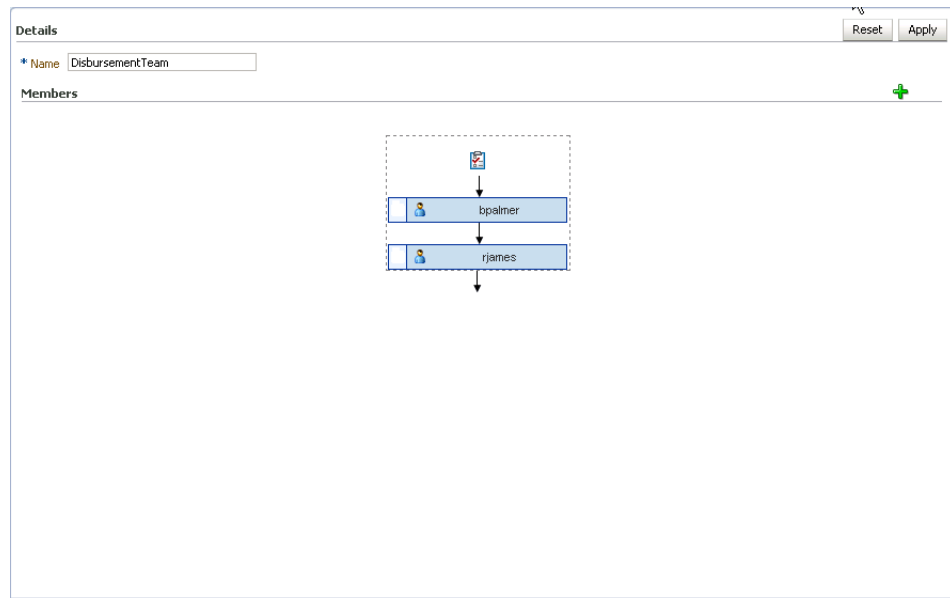
The name of an approval group is necessary when specifying the approval group list builder as discussed in *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*. The pattern configured in the approval group is used by default to order the users who must act on the task. However, when creating the list builder, the default pattern can be overridden by specifying the voting method.

The sections that follow describe the Worklist Application user interface that enables users with administrator rights to manage approval groups.

8.4.2.1 How to View Approval Groups

To view approval groups:

1. From the Process Workspace toolbar, click **Administration**. The Administration Areas panel appears in the left pane.
2. Under Task Administration, click **Approval Groups**. The Groups page appears in the right pane.
3. In the navigation pane of the Approval Groups page, select an approval group. A details page for that approval group appears in the right pane, similar to the one shown in [Figure 8–9](#).

Figure 8–9 Oracle Business Process Management Workspace: Approval Group Detail

The figure shows that the DisbursementTeam approval group has two users, bpalmer and rjames. The users will act on a task in a specific sequence configuration.

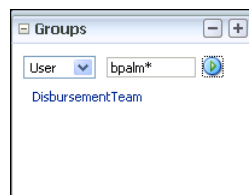
8.4.2.2 How to Search for an Approval Group

You can search for an approval group either by user name or group name.

To search by user name:

1. From the Process Workspace toolbar, click **Administration**. The Administration Areas panel appears in the left pane.
2. Under Task Administration, click **Approval Groups**. The Approval Groups page appears in the right pane.
3. Select **User** from the list.
4. Enter the full user name for the user in the field. (You also can perform a wildcard search (*) with a partial user name.)
5. Click the action (>) button.

A list of all approval groups to which the user belongs displays in the left pane, as shown in [Figure 8–10](#).

Figure 8–10 User Name Search Results

Clicking the approval group name refreshes the details pane on the right with the structure of that group.

To search by group name:

1. In the left pane, select **Group** from the list.
2. Enter the full group name in the field. (You also can perform a wildcard search (*) with a partial group name.)
3. Click the action (>) button.

A list of all matching approval groups displays in the left pane.

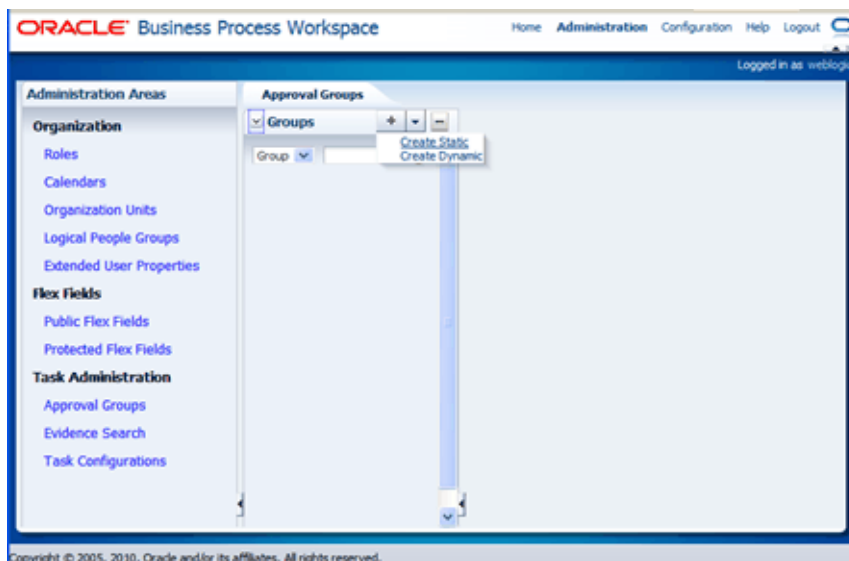
Clicking on the approval group name refreshes the Details pane on the right with the structure of that group.

8.4.2.3 How to Add a Static Approval Group

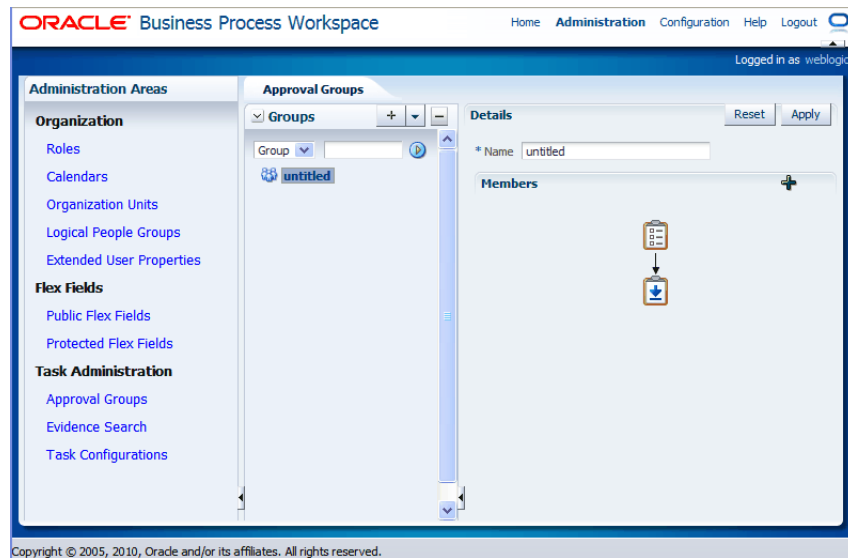
To add a static approval group:

1. Click the **Add (+)** button and select **Create Static** from the list, as shown in [Figure 8–11](#).

Figure 8–11 Create Approval Group: Select Static Group



A page similar to the one shown in [Figure 8–12](#) appears.

Figure 8–12 Create Static Approval Group: Details

2. Enter a new name for the group.
3. Click **Apply**.

You can add members to the new approval group.

8.4.2.4 How to Add a New Member to a Static Approval Group

Members of a static approval group either can be users or other approval groups.

To add a new user member to an approval group:

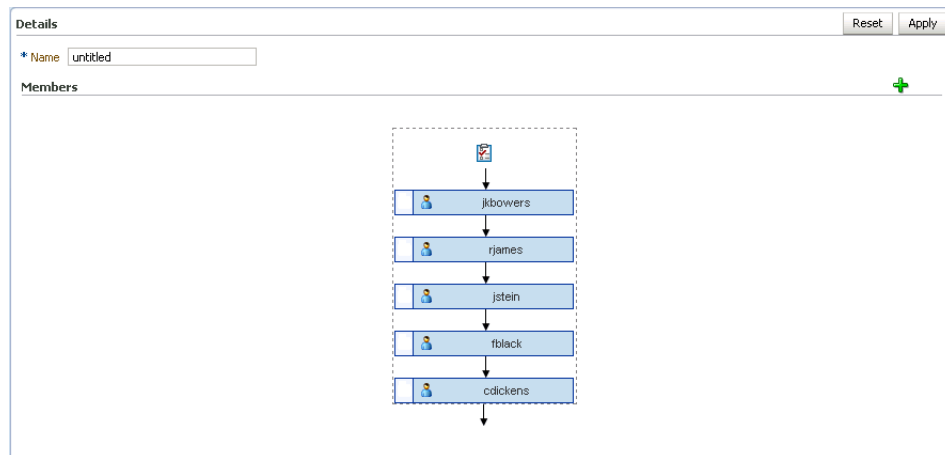
1. From the Details page shown in [Figure 8–12](#), click the **Add (+)** icon.
The other icons enable you to edit, delete, and reorder members in the approval sequence.
The Add to Group dialog box appears.
2. Select **User**.
3. Do one of the following:
 - Enter a full user name and click **OK**.
The dialog box closes and the new member appears in the **Members** section of the **Details** pane.
 - Click the magnifying glass to search for a user.
If you click the magnifying glass, an Identity Browser pop-up dialog appears.
4. Select **Users** from the list.
5. Enter a full name in the text-entry field and click **Search**. (You also can perform a wildcard search (*) with a partial user name.)
The Identity Browser dialog refreshes and the search results appear.
6. Choose a user from the list.
The details for that user appear in the **Details** section of the dialog.
7. Click **OK**.

- Click **OK** again to close the Add to Group dialog.

A node representing the selected user appears in the approval group structure in the **Members** section of the **Details** pane.

You can add more members to the approval group by repeating the steps above. The resulting approval group structure will look similar to the one shown in [Figure 8–13](#).

Figure 8–13 Approval Group Structure: Multiple Members



8.4.2.5 How to Delete a Member from an Approval Group

To delete a member from an approval group:

- Choose the appropriate member node from the approval group structure.
- Click the **Delete** icon.

The approval group structure refreshes and the member node has been deleted.

8.4.2.6 How to Move an Approval Group's Members

To change the sequence order of an approval group:

- Choose a member node to move.
- Use the Push Member Up (^) and Push Member Down (v) icons to move the member to the desired location.

8.4.2.7 How to Nest Approval Groups

Nesting an approval group means making it part of another approval group.

To nest an approval group:

- Click the **Add** icon.
- Select **Approval Group**.
- Click the magnifying glass.

Another Add to Group dialog box appears.
- From the left pane, choose the approval group you want to add.

Its structure appears in the right pane.

5. Click **OK**.
6. Click **OK** again to close the Add to Group dialog box.

The new approval group appears in the approval group's structure.

8.4.2.8 How to Rename an Approval Group

To rename an approval group:

1. Enter the new name of the approval group in the **Name** field.
2. Click **Apply**.

The name change is reflected in other approvals groups in which this approval group is nested.

8.4.2.9 Using Dynamic Approval Groups

Dynamic Approval Groups provide a way to create approval groups through a custom Java class at runtime. This requires the following:

- Writing a custom dynamic approval group class for the custom implementation by the developer
- Registering the custom dynamic approval group using the worklist apps UI by the IT department
- Making the class file available in a globally well known directory that is part of the SOA class path

8.4.2.9.1 How to Write a custom Dynamic Approval Group Class To define a dynamic approval group, the user must define an implementation class using the interface file `IDynamicApprovalGroup.java`, defined by AMX for dynamic approval groups in the package `oracle.bpel.services.workflow.task`. This package contains only one public method that gets the approval group members. The Task object will be the only input parameter. The primary key list can be obtained from the task `task/systemAttributes/collectionTarget`.

Example 8–1 Implementation Class

```
***** IDynamicApprovalGroup.java *****

public interface IDynamicApprovalGroup {

    /**
     * Get members of this dynamic approval group
     * @param task Property bag containing information required to generate
     *         the approver list
     * @return list of IApprovalListMember including sequence, member, member_
     *         type; null for empty group
     * The primary key list can be obtained from task:
     *         task/systemAttributes/collectionTarget
     */

    public List getMembers(Task task )
        throws WorkflowException;
}
*****
```

Figure 8–14 shows a code snippet for a sample dynamic approval group class.

Figure 8–14 Code for Dynamic Approval Group Class

```

package oracle.bpel.services.workflow.repos.test;

import java.util.ArrayList;
import java.util.List;
import oracle.bpel.services.workflow.WorkflowException;
import oracle.bpel.services.workflow.task.IDynamicApprovalGroup;
import oracle.bpel.services.workflow.runtimeconfig.impl.RuntimeConfigUtil;
import oracle.bpel.services.workflow.runtimeconfig.model.ApprovalGroupMember;
import oracle.bpel.services.workflow.task.model.Task;
import oracle.bpel.services.workflow.IWorkflowConstants;

public class SampleDynAprGrp1 implements IDynamicApprovalGroup {
    public List getMembers(Task task)
        throws WorkflowException
    {
        // Add logic later to do conditional return of different group mebers b
        //ased on some task attribute
        List approversList=new ArrayList();
        ApprovalGroupMember taskAssignee1 = RuntimeConfigUtil.getFactory().crea
        teApprovalGroupMember();
        taskAssignee1.setMember("jldon");
        taskAssignee1.setType(IWorkflowConstants.IDENTITY_TYPE_USER);
        taskAssignee1.setSequence(1);
        approversList.add(taskAssignee1);
        ApprovalGroupMember taskAssignee2 = RuntimeConfigUtil.getFactory().crea
        teApprovalGroupMember();
        taskAssignee2.setMember("wfaulk");
        taskAssignee2.setType(IWorkflowConstants.IDENTITY_TYPE_USER);
        taskAssignee2.setSequence(2);
        approversList.add(taskAssignee2);
        ApprovalGroupMember taskAssignee3 = RuntimeConfigUtil.getFactory().crea
        teApprovalGroupMember();
        taskAssignee3.setMember("jstein");
        taskAssignee3.setType(IWorkflowConstants.IDENTITY_TYPE_USER);
        taskAssignee3.setSequence(3);
        approversList.add(taskAssignee3);
        ApprovalGroupMember taskAssignee4 = RuntimeConfigUtil.getFactory().crea
        teApprovalGroupMember();
        taskAssignee4.setMember("achrist");
        taskAssignee4.setType(IWorkflowConstants.IDENTITY_TYPE_USER);
        taskAssignee4.setSequence(4);
        approversList.add(taskAssignee4);
        return approversList;
    }
}

```

8.4.2.9.2 How to Register the Custom Dynamic Approval Group Class For more information, see *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*

8.4.2.9.3 How to Make the Custom Dynamic Approval Group Class Available To make the class file available in a globally well-known directory that is part of the SOA class path, put your class files in the following WebLogic Server directory:

```
$BEAHOME/AS11gR1SOA/soa/modules/oracle.soa.ext_11.1.1/classes
```

For example, for the Java class *oracle.apps.DynamicAG*, the path would be *\$BEAHOME/AS11gR1SOA/soa/modules/oracle.soa.ext_11.1.1/classes/oracle/apps/DynamicAG.class*. You **must** restart WebLogic Server after you put your class files there.

8.4.2.9.4 How to Add a Dynamic Approval Group The following procedure explains how to add a dynamic approval group.

1. In the left pane, click the **Add (+)** button and select **Create Dynamic** from the list
2. Enter a name and a class for the group.
3. Click **Apply** to save the group.

8.4.2.10 How to Delete an Approval Group

To delete an approval group:

1. In the Approval Group page, choose the approval group you want to delete.

2. Click the **Delete (-)** button.

A confirmation dialog box appears.

3. Click **OK**.

The approval group is deleted.

Note: If the approval group you deleted is nested in other approval groups, it also is deleted from those parent groups.

8.4.3 Using Task Configuration in Process Workspace

Task Configuration in Process Workspace lets business users and administrators review the rules that were configured automatically by the workflow designer. These predefined rules can be changed for a specific customer based on the customer's applicable corporate policies.

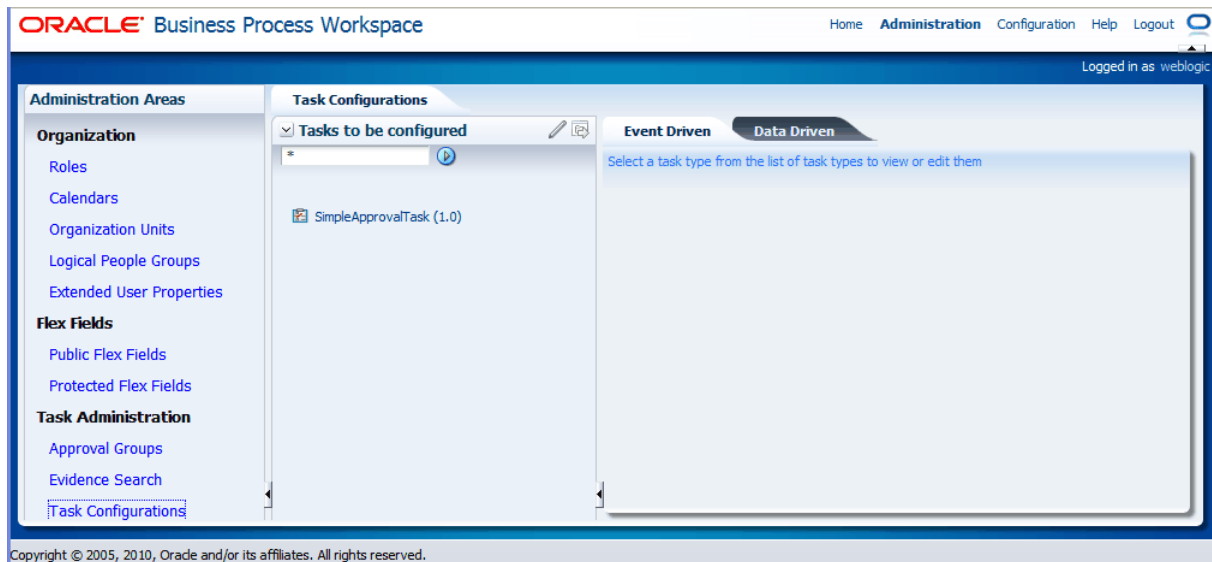
For example, if a corporate policy requiring two levels of approvals for expense amounts greater than 1000 is changed to a policy requiring three levels, the customer can use this web-based application to change the rule rather than having its IT department modify the rule in the underlying process and then deploy it again. Any change made to the rule will be applied starting with the next instance; instances that are already in progress will use the current rule definitions.

Task Configuration enables you to edit the event driven and data-driven rules associated with an approval flow at run time; that is, when the workflow has already been deployed.

To access the **Task Configuration** page:

1. From the Process Workspace toolbar, click **Administration**. The Administration Panel appears in the left pane.
2. In the Administration Panel, under Task Administration, click **Task Configuration**. The Task Configuration page appears in the right pane, as illustrated in [Figure 8-15](#).

Figure 8–15 Task Configuration: Main Page



The **Tasks to be configured** section in the right pane lists all workflow tasks that have been configured to use approval-flow rules. It also provides a search capability. In the view mode, the right panel displays the default configuration and rules for overriding the approval-flow list builder configuration. The rule configurations are displayed based on the stages defined in the approval flow.

8.4.3.1 How to Edit Event-Driven Settings

This section contains information about event-driven settings (task metadata).

To edit an event-driven setting:

1. From the Process Workspace toolbar, click **Administration**. The Administration Panel appears in the left pane.
2. In the Administration Panel, under Task Administration, click **Task Configuration**. The Task Configuration page appears in the right pane.
3. In the **Tasks to be configured** pane, select a task. The main page refreshes in edit mode.
4. Make your changes and click **Apply** to save them.

Note: An improper or incomplete rules definition in a list-creation rule set can cause runtime errors. Errors can be caused by the following:

- **No rule was defined in the rule set.**
- **None of the conditions defined in the rule was met.**

Ensure that rules are properly defined to handle all conditions.

8.4.3.1.1 How to Specify Routing Settings The **Event Driven** page contains a limited set of the routing options available in the Human Task Editor.

Approval aggregation requirements can be any of the following:

- None

- Once per task
- Once per stage

8.4.3.1.2 How to Define Expiration and Escalation Policies Defining expiration and escalation policies in Process Workspace is similar to how it is done in the Human Task Editor. For more information, see the section "How to Escalate, Renew, or End the Task" in the chapter "Designing Human Tasks" in *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

8.4.3.1.3 How to Specify Notification Settings Creating or updating notification settings for a task in Process Workspace is similar to how it is done in the Human Task Editor. For more information, see the section "How to Specify Participant Notification Preferences" in the chapter "Designing Human Tasks" in *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

8.4.3.1.4 How to Allow Task Access Access-rule settings can be set to control the actions a user can perform and is similar to how it can be done in the Human Task Editor. Content and action permissions can be specified based on the logical role of a user, such as creator (initiator), owner, assignee, and reviewers.

For more information, see *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*.

8.4.3.2 How to Edit Data-Driven Settings

To edit a data-driven setting (a rule or condition):

1. From the Process Workspace toolbar, click **Administration**. The Administration Panel appears in the left pane.
2. In the Administration Panel, under Task Administration, click **Task Configuration**. The Task Configuration page appears in the right pane.
3. In the Task Configuration page, select the **Data Driven** page.
4. In the **Tasks to be configured** pane, select a task.
The right panel refreshes in edit mode.
5. Do any of the following:
 - Add
 - Update
 - Delete
 - Change assertions (which depend on the type of list builder for which the rule has been configured)
 - Add variables
6. When you have finished making your changes, click **Apply**.

The changes are saved to the rule definitions in the rules dictionary.

For more information about editing tasks see *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*.

8.4.3.2.1 How to Add a Variable

To add a variable:

1. In the Data Driven page, click **Add variable**.

The Add Variable window appears.

2. Enter a name for the variable.
3. Click the down arrow to select a variable type from the list.

The types displayed in the list correspond to those that are available in the rule dictionary (built-in and others that have been registered).

4. Enter a value.
5. Click **OK**.

The variable can now be used to define conditions.

8.4.3.2.2 How to Define Conditions You can set the left and right sides of a condition by selecting operands from condition browsers. Clicking the magnifying glass icon displays the browsers.

The operator for comparing the operands of the condition will change based on the type of operand selected for the left side of the condition.

You also can define more complex conditions using the Expression Builder.

For more information, see the section "Creating ADF Data Binding EL Expressions" in *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*. See also the section "Creating EL Expressions" in *Oracle Fusion Middleware Web User Interface Developer's Guide for Oracle Application Development Framework*.

8.4.3.2.3 How to Define Assertions You can specify an assertion by selecting the appropriate rule function from the list.

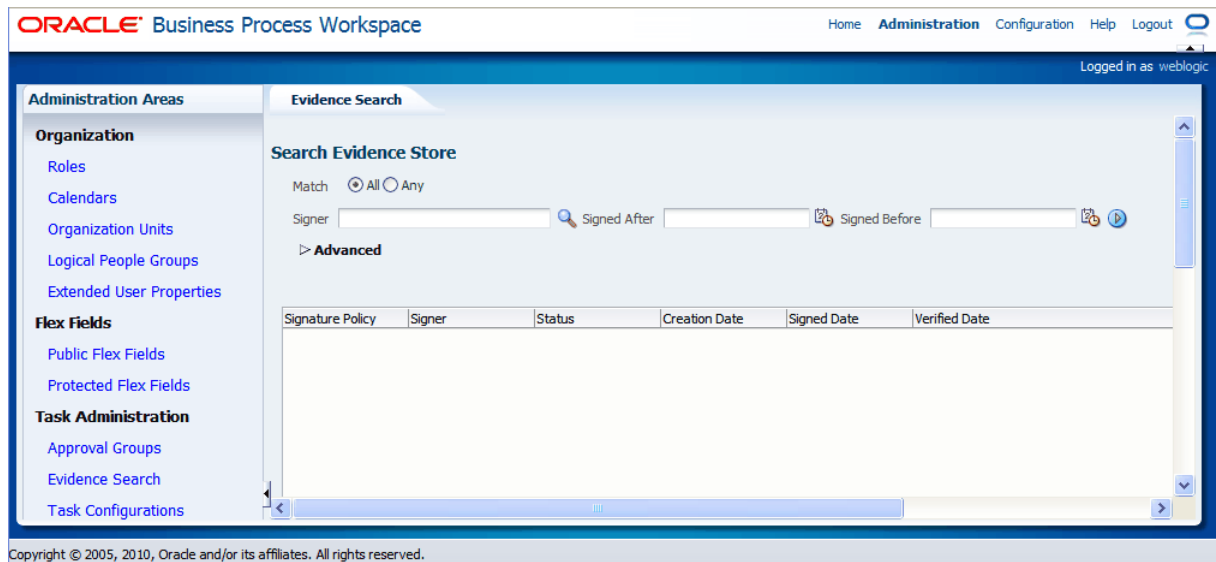
8.4.4 Using Evidence Search in Process Workspace

The evidence store service is used for digital signature storage and nonrepudiation of digitally signed human tasks.

To search the evidence store:

1. In the Process Workspace toolbar in the upper right corner, click **Administration**. The Administration Areas panel appears in the left pane.
2. In the Administration Areas panel, under Task Administration, select **Evidence Search**. The Evidence Search page appears in the right pane, as shown in [Figure 8-16](#).

Figure 8–16 Searching the Evidence Store



3. Fill in the search fields, then click **Search Evidence Store**.

For information about the evidence store for digital signatures, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

8.4.5 Managing Exceptions in Process Workspace

Under certain circumstances—for example, an employee who has left the company being assigned to a task—an exception can occur. When an exception occurs, the task gets put into an alerted state. The task then gets assigned to the error assignee or, if one is not specified, to the administrator.

For information about configuring the error assignee, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

There are other scenarios in which an exception can happen.

8.5 Using the User Metadata Migration Utility

The user metadata migration utility, `hwmigrator`, is a tool that automates the process of migrating workflow user-configurable data from one SOA server to another by executing a shell script. The tool also includes a property file that contains key-value pairs and all the input parameters required to perform the migration operation. You customize the property file and then perform the migration by executing the shell script.

For information about using the User Metadata Migration Utility, see *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*.

For information about moving Oracle BPM from a test site to a production site, see *Oracle Fusion Middleware Administrator's Guide*.

Part II

Using Oracle Business Process Management Process Spaces

This part contains the following chapters:

- [Chapter 9, "Getting Started with Oracle Business Process Management Process Spaces \(Process Spaces\)"](#)
- [Chapter 10, "Using and Customizing a Process Workspace in Process Spaces"](#)
- [Chapter 11, "Using and Customizing a Process Modeling Space in Process Spaces"](#)
- [Chapter 12, "Using and Customizing a Process Instance Space in Process Spaces"](#)
- [Chapter 13, "Performing Administration in Process Spaces"](#)

Getting Started with Oracle Business Process Management Process Spaces (Process Spaces)

To help you get started with Process Spaces, this chapter contains these topics:

- [Section 9.1, "Understanding Process Spaces"](#)
- [Section 9.2, "Starting and Logging In to Process Spaces"](#)
- [Section 9.3, "Navigating Process Spaces"](#)

9.1 Understanding Process Spaces

Process Spaces is a workspace built on top of Oracle WebCenter Spaces. It enables greater collaboration by combining the content from the panels in Process Workspace with an additional workspace in which you can collaborate in the development of process models.

WebCenter provides group spaces that support discrete communities of any size that are organized around an area of interest or a common goal. WebCenter also provides various collaborative services enabling document sharing, discussions, wikis, lists, links, tagging, and real-time collaboration services such as presence and instant messaging.

As a combination of WebCenter and Process Workspace functionalities, Process Spaces provides WebCenter group spaces that are designed specifically for modeling and executing business processes. modeling and execution, Process Spaces also utilizes the collaborative services of WebCenter.

For information about Oracle WebCenter, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

9.1.1 Oracle WebCenter Group Spaces for Business Process Management

Process Spaces provides these WebCenter group spaces specifically for business process management:

- A process workspace—For process participants to collaborate on relevant processes and instances based on their roles. This enables, for example, a group of sales representatives within a given region to share documents and information about various customers, the products they are buying, their requirements and history.
- A process modeling space—For domain analysts to collaborate on various aspects of modeling business processes. This enables, for example, experts from various

departments to jointly develop processes that reflect the needs of their various departments.

- A process instance space—Created on an ad hoc basis for long-running instances, it displays specific instances that require a high level of collaboration over time.

You can customize these group spaces based on functional teams, granting access only to a relevant set of users with the appropriate roles. After you specify these user sets, only the relevant processes are included in the space.

9.2 Starting and Logging In to Process Spaces

To start Process Spaces, you must have installed Oracle SOA Suite and the SOA server must be running. See *Oracle Fusion Middleware Installation Guide for Oracle SOA Suite and Oracle Business Process Management Suite* for more information.

Use a supported Web browser:

- Microsoft Internet Explorer 7.x
- Mozilla Firefox 2.x
- Mozilla Firefox 3.x
- Apple Safari

To start and log in to Process Spaces:

1. Go to

`http://host_name:port_number/webcenter/`

The `host_name` is the name of the host computer on which Oracle WebCenter is installed.

The `port_number` is the one used at installation.

2. Enter the user name and password.

You can use the preseeded user to log in as an administrator. If you have loaded the demonstration user community in the identity store, then you can use other users such as `jstein` or `jcooper`.

The user name and password must exist in the user community provided to JAZN.

3. Click **Login**.

9.3 Navigating Process Spaces

Tabs in Process Spaces are customizable depending on your roles—for example, an administrator can add or remove panels in any given page.

This section contains these topics:

- [Section 9.3.1, "About the Process Spaces Process Workspace"](#)
- [Section 9.3.2, "The Modeling Space in Process Spaces"](#)
- [Section 9.3.3, "The Process Instance Space in Process Spaces"](#)

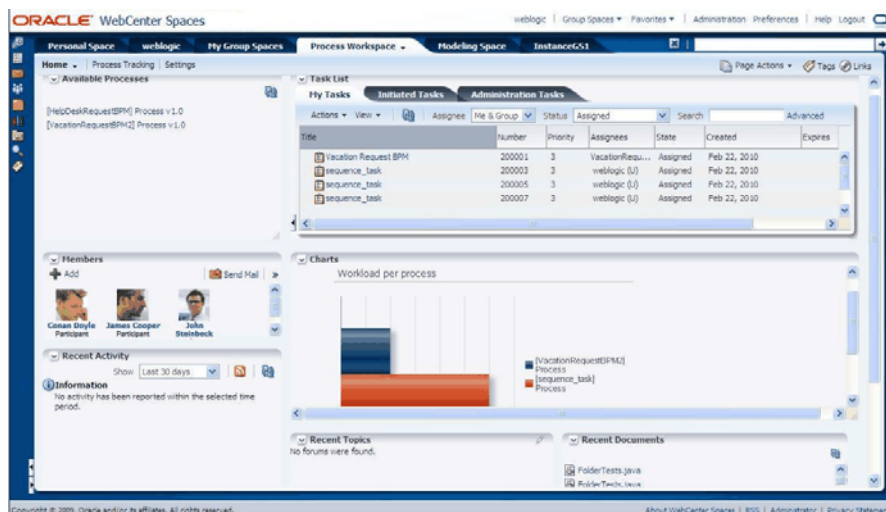
9.3.1 About the Process Spaces Process Workspace

The Process Spaces Process Workspace includes a Home page and a Process Tracking page.

9.3.1.1 The Process Workspace Home Page

After a user logs in, depending on the user's roles and privileges, the Process Spaces Home page displays the user's tasks and related panels, as shown in [Figure 9-1](#).

Figure 9-1 Process Spaces Home Page

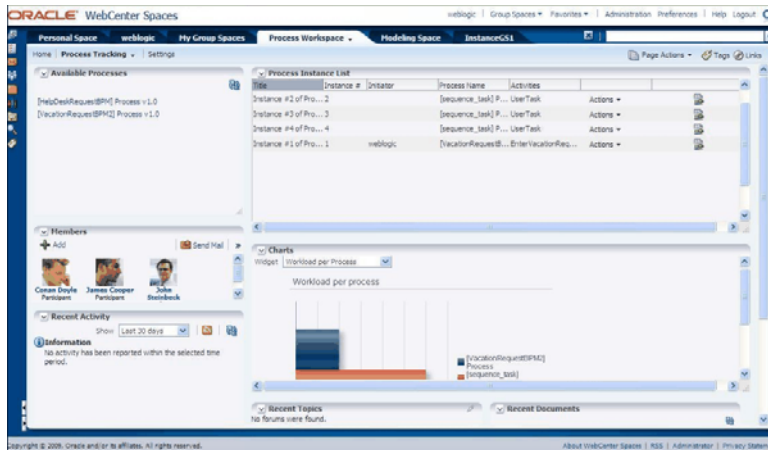


Included in the various panels of the Home page is the Available Processes panel, which displays the processes the user is authorized to execute. The Home page also displays the task inbox and dashboards (charts), and several standard panels of WebCenter.

9.3.1.2 The Process Workspace Process Tracking Page

Selecting the Process Tracking page provides process-related information, as shown in [Figure 9-2](#). Depending on the user's roles and privileges, this page displays the process instance list and various other panels including available processes and dashboards. It also includes a number of standard WebCenter panels.

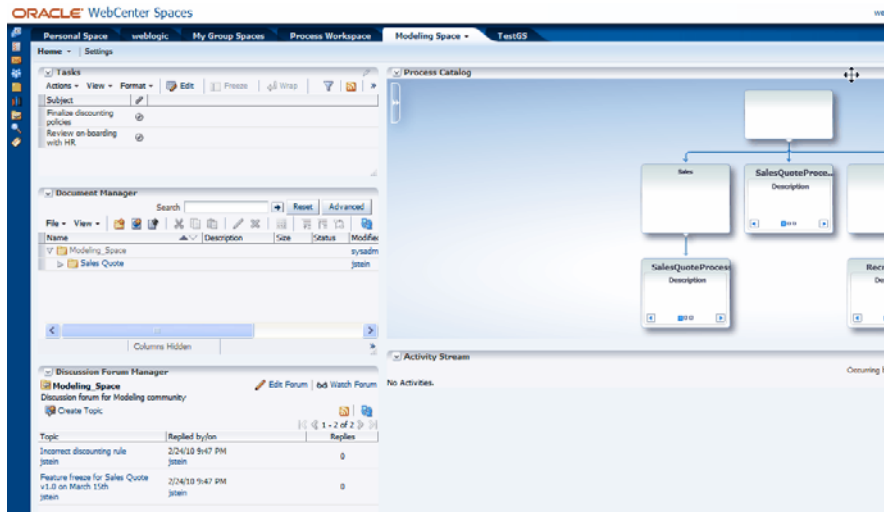
Figure 9–2 Process Spaces Process Tracking Page



9.3.2 The Modeling Space in Process Spaces

The Process Spaces Modeling Space page enables users to collaborate on process definition. In this page users can, for example, comment on potential bottlenecks of a deployed process and discuss improvements. Figure 9–3 shows a Process Spaces Modeling Space page.

Figure 9–3 Process Spaces Modeling Space Page



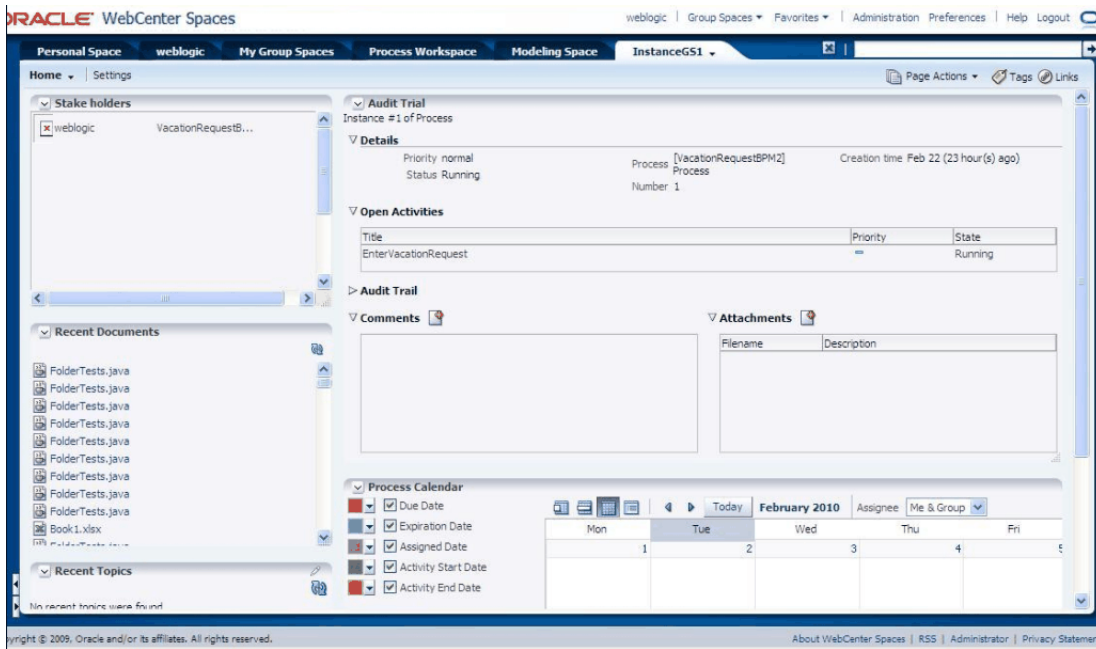
This page includes the Process Catalog, which graphically displays the various processes in the project. Each process is represented by a square. Navigation arrows within a given square enable you to find more information about the process it represents. The page also includes a number of panels that are standard to WebCenter.

9.3.3 The Process Instance Space in Process Spaces

The Process Instance Space allows users to collaborate on a process instance. Usually the process instance space is used for a long-running process instance that involves many ad hoc activities and collaboration.

Figure 9–4 shows a process instance page showing the stakeholders of the process instance, audit trail of the instance, and the process instance calendar.

Figure 9-4 Process Spaces Process Instance Page



Using and Customizing a Process Workspace in Process Spaces

Because Process Spaces is tightly integrated with both Process Workspace and WebCenter, using and customizing a work space sometimes involves performing tasks that are unique to Process Spaces. At other times, the tasks are performed by using either Process Workspace or WebCenter.

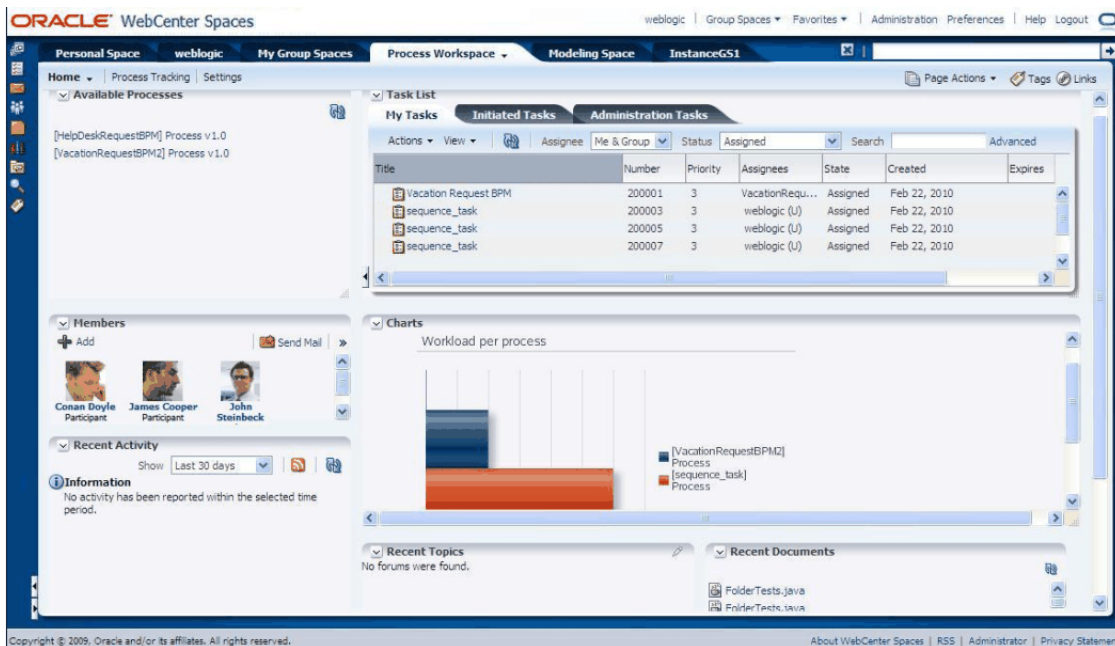
This chapter contains these topics:

- Section 10.1, "The Process Workspace Home Page in Process Spaces"
- Section 10.2, "Acting on Tasks in Process Spaces"
- Section 10.3, "Filtering Tasks in Process Spaces"
- Section 10.4, "Adding Members to the Group Space in Process Spaces"
- Section 10.5, "Adding Documents to Process Workspace in Process Spaces"
- Section 10.6, "Participating in Discussions in Process Spaces"
- Section 10.7, "Viewing Recent Activity in Process Spaces"
- Section 10.8, "Initiating a Process Instance in Process Spaces"
- Section 10.9, "Filtering Process Instances in Process Spaces"
- Section 10.10, "Canceling a Process Instance in Process Spaces"
- Section 10.11, "Adding Documents to Process Instances in Process Spaces"
- Section 10.12, "Using and Customizing Dashboards in Process Spaces"
- Section 10.13, "Creating an On-Demand Group Space for an Instance in Process Spaces"
- Section 10.14, "Customizing Process Workspace in Process Spaces"
- Section 10.15, "Subscribing to a Process Workspace Group Space in Process Spaces"

10.1 The Process Workspace Home Page in Process Spaces

Figure 10-1 shows an example of a Process Spaces Home page.

Figure 10–1 Process Spaces Home Page



For more information about the Process Workspace Home page in Process Spaces, see [Section 9.3.1, "About the Process Spaces Process Workspace."](#)

10.2 Acting on Tasks in Process Spaces

In Process Spaces, you act on tasks by using the Process Workspace panel on the Process Spaces Home page.

For instructions on acting on tasks, see [Chapter 3, "Working on Tasks in Oracle Business Process Management Workspace \(Process Workspace\)"](#).

10.3 Filtering Tasks in Process Spaces

In Process Spaces, you filter tasks by using the Process Workspace panel on the Process Spaces home page.

For instructions about filtering tasks, see [Section 3.2.3, "Searching for Tasks in Process Workspace"](#)

10.4 Adding Members to the Group Space in Process Spaces

For information about how to add members to a group space, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

10.5 Adding Documents to Process Workspace in Process Spaces

For instructions about adding documents to Process Workspace, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

10.6 Participating in Discussions in Process Spaces

For instructions about participating in a discussion, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

Note: If you have imported a group space and want to create or select a forum, you must do so manually from the services page of the imported group space.

For information about choosing or creating a forum in a group space imported into Oracle WebCenter, see *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter*.

10.7 Viewing Recent Activity in Process Spaces

For instructions about viewing recent activity, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

10.8 Initiating a Process Instance in Process Spaces

In Process Spaces, you initiate a process instance by using the Process Workspace portlet on the Process Spaces home page.

For instructions about initiating a process instance, see [Section 4.1, "Initiating Process Instances in Process Workspace"](#)

10.9 Filtering Process Instances in Process Spaces

In Process Spaces, you filter process instances by using the Process Workspace portlet on the Process Spaces Home page.

For instructions about filtering process instances, see [Section 4.3, "Searching for Process Instances in Process Workspace"](#).

10.10 Canceling a Process Instance in Process Spaces

In Process Spaces, you cancel process instances by using the Process Workspace portlet on the Process Spaces Home page.

For instructions about canceling a process instance, see [Section 4.6, "Canceling a Process Instance in Process Workspace"](#).

10.11 Adding Documents to Process Instances in Process Spaces

A process instance group space is configured with the document service that Oracle WebCenter offers. The widget added to this group space enables you to add and remove documents within the group space folder.

Note: Note that these documents are different from the ones attached to the process instance itself. The documents added in Process Spaces are generally collaboration documents and have no significance after the process is completed.

For instructions about adding documents to process instances in Process Spaces, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

10.12 Using and Customizing Dashboards in Process Spaces

For instructions about using and customizing dashboards in Process Spaces, see [Chapter 6, "Using Dashboards in Oracle Business Process Management Workspace \(Process Workspace\)"](#).

10.13 Creating an On-Demand Group Space for an Instance in Process Spaces

Process instances that typically run for a long time may require a dedicated collaboration space. To create a dedicated collaboration space, in either the task list or the process instance list, at the end of the row for the process instance, click **Launch Process Instance Space**. A page appears with the new process instance group space. Here, you can perform activities specific to that instance.

10.14 Customizing Process Workspace in Process Spaces

To enable collaboration on a specific set of processes, you can create a new group space by using the Process Workspace template. This creates a new group space that is a replica of the default Process Workspace.

The default Process Workspace can also be customized just like any group space.

To create a customized default group space from the Process Workspace template, customize and then save the template. To customize the template, first create a group space from it, then customize, save, and publish it as Process Workspace Template.

For information about customizing group space pages, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

10.15 Subscribing to a Process Workspace Group Space in Process Spaces

When Oracle Business Process Management Process Spaces is installed, users are not granted access to Process Workspace by default. To access the Process Workspace group space, the user logs in to Process Workspace and performs a search for discoverable spaces. From the search results, the user selects a Process Workspace and is asked to choose a role. Available roles are: Viewer, Participant, and Moderator.

The Participant and Viewer roles can be self-subscribed—that is, when the user chooses the role, the user is granted that role automatically. When the user chooses the Moderator role, that request is submitted to the administrator for approval.

Using and Customizing a Process Modeling Space in Process Spaces

This chapter discusses modeling spaces, those group spaces that enable business analysts to collaborate in developing process models. It also explains how to use Process Spaces to customize your own modeling space.

This chapter contains these topics:

- [Section 11.1, "About Modeling Spaces in Process Spaces"](#)
- [Section 11.2, "The Process Modeling Space Page in Process Spaces"](#)
- [Section 11.3, "Customizing a Process Modeling Space in Process Spaces"](#)

11.1 About Modeling Spaces in Process Spaces

A modeling space enables business analysts to collaborate on process models. This collaboration includes these activities:

- Browsing published projects by using the Process Catalog—The Process Catalog shows all published processes. When you find and double-click a specific process, it opens in Business Process Composer. From there you can collaborate with process developers and designers to edit the processes.

Note: If you browse the Process Catalog, and Single Sign-on is not set up, then you are prompted for the necessary credentials before being taken to Composer.

- Adding tasks by using Oracle WebCenter—To track the progress of projects being developed, you can add tasks.

For information about adding tasks, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*

- Add documents by using Oracle WebCenter—Use this Oracle WebCenter feature when collaborating on process models.

For information about adding documents, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

11.2 The Process Modeling Space Page in Process Spaces

[Figure 11-1](#) shows an example of a Process Spaces Modeling Space page.

Figure 11–1 Process Spaces Modeling Space Page

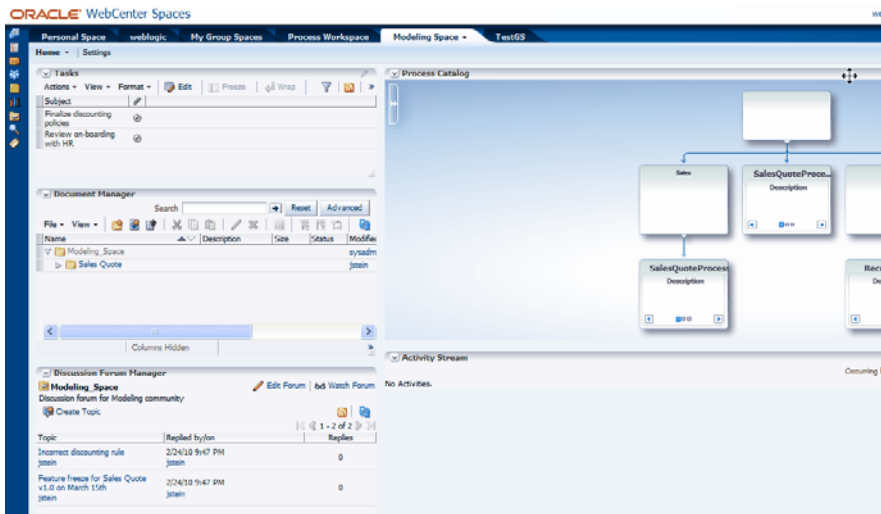


Table 11–1 Process Spaces Modeling Spaces Panels

Panel	Description
Tasks	Enables you to track the progress of projects being developed
Recent Documents	Lists the most recently created or modified files in the root folder of the active content repository connection to the page
Recent Topics	Lists recent discussion topics, popular topics, watched topics, and watched forums
Process Catalog	Enables you to browse the various projects. When you find and double-click a specific project, the selected project opens in Business Process Composer.

11.3 Customizing a Process Modeling Space in Process Spaces

To enable collaboration on a specific set of processes, you can create a new group space by using the Process Modeling template. This creates a new group space that is a replica of the default modeling space.

The default Process Modeling Space can also be customized just like any group space.

To create a customized default group space from the Process Modeling template, customize and then save the template. To customize the template, first create a group space from it, then customize, save, and publish it as Process Modeling Template.

For information about customizing group space pages, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

Using and Customizing a Process Instance Space in Process Spaces

A process instance space is created on an ad hoc basis for long-running instances. It displays specific instances that require a high level of collaboration over time. This chapter tells you how to create, manage, and customize a process instance space for collaborating on long-running instances.

Because Process Spaces is tightly integrated with both Process Workspace and WebCenter, using and customizing a work space sometimes involves performing tasks that are unique to Process Spaces. At other times, the tasks are performed by using either Process Workspace or WebCenter.

This chapter contains these topics:

- [Section 12.1, "The Process Instance Space in Process Spaces"](#)
- [Section 12.2, "Adding Comments and Attachments to a Process Instance in Process Spaces"](#)
- [Section 12.3, "Tracking a Process Instance in Process Spaces"](#)
- [Section 12.4, "Adding a Document to a Process Instance Space in Process Spaces"](#)
- [Section 12.5, "Participating in a Discussion in a Process Instance Space in Process Spaces"](#)
- [Section 12.6, "Customizing a Process Instance Space in Process Spaces"](#)

12.1 The Process Instance Space in Process Spaces

[Figure 12-1](#) shows an example of a process instance space.

Figure 12–1 Process Spaces Process Instance Page

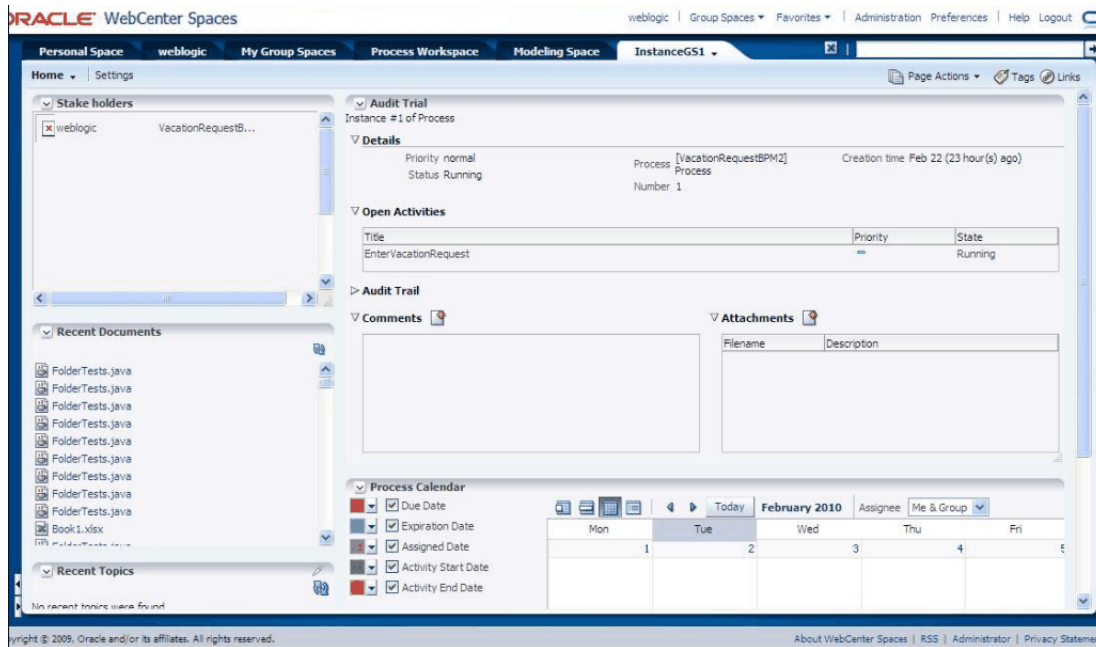


Table 12–1 describes the elements in the process instance page shown in Figure 12–1.

Table 12–1 Panels in the Process Instance Space

Panel	Description
Stakeholders	Lists any user who has acted on the process, including the initiator
Recent Documents	Lists the most recently created or modified files in the entire root folder of the active content repository connection to the page
Recent Topics	Lists recent discussion topics, popular topics, watched topics, and watched forums
Audit Trail	Shows the details for this instance including any open instances. Enables you to add comments and attachments.
Process Calendar	Shows different dates associated with a process—for example: activity start date, activity end date, and human task dates such as assigned date, expiration date, and due date.

12.2 Adding Comments and Attachments to a Process Instance in Process Spaces

In Process Spaces, you add comments and attachments to a process instance by using the Process Workspace portlet on the Process Spaces home page.

For instructions on adding comments and attachments to a process instance, see [Section 4.4, "Associating Comments and Attachments with a Process Instance in Process Workspace"](#).

12.3 Tracking a Process Instance in Process Spaces

In Process Spaces, you track a process instance by using the Process Workspace portlet on the Process Spaces Home page.

For instructions about tracking a process instance, see [Section 4.2, "Viewing the Details of a Process Instance in Process Workspace"](#).

12.4 Adding a Document to a Process Instance Space in Process Spaces

For instructions about adding documents to process instances, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

12.5 Participating in a Discussion in a Process Instance Space in Process Spaces

For instructions about participating in discussion, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

Note: If you have imported a group space and want to create or select a forum, you must do so manually from the services page of the imported group space.

For information about choosing or creating a forum in a group space imported into Oracle WebCenter, see *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter*.

12.6 Customizing a Process Instance Space in Process Spaces

Like other templates, the process instance template can be customized. Unlike other templates, the process instance template cannot be used to create other group spaces manually. It is used by the system to create a group space that is connected to a specific process instance.

The created group space can be customized just like any other Oracle WebCenter group space. However, you should not modify the group space attribute that is added as part of its creation.

Performing Administration in Process Spaces

This chapter discusses what you need to know as an administrator of Process Spaces.

This chapter contains these topics:

- [Section 13.1, "Understanding Roles and Permissions in Process Spaces"](#)
- [Section 13.2, "Understanding Task Flows in Process Spaces"](#)
- [Section 13.3, "Editing Pages in Process Spaces"](#)
- [Section 13.4, "Configuring a Group Space in Process Spaces"](#)

13.1 Understanding Roles and Permissions in Process Spaces

Both Oracle WebCenter and Oracle Business Process Management Process Spaces use an identity store, each with a different set of application roles. Process Spaces group spaces come with default WebCenter roles—for example: moderator, participant viewer, and public user. However, an administrator can create more roles and provide appropriate permissions to them.

For more information about creating roles and providing permissions, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

13.2 Understanding Task Flows in Process Spaces

[Table 13-1](#) lists the task flows and their parameters.

Table 13-1 Task Flows and Parameters

Task Flow	Parameter	Description
Available processes	View ID	

Table 13–1 (Cont.) Task Flows and Parameters

Task Flow	Parameter	Description
Task list	Wf Ctx ID	
	Locale Source	
	View Filter	
	Locale Source	
	Task Types Filter List	
	Show Views Panel	
	Sort Order	
	Show Task Details Panel	
	Show Assignment Filter	
	Assignment Filter	
	Show Action Dropdown	
	Federated Servers	
	Sort Column	
	Attributes Filter List	
	Refresh URL	
	Attributes Filter Operator	
	Display Columns List	
	Federated Mode	
Show Server Column		
Show View Filter		
Show Search Control		
Show Status Filter		
Process Instance List	View ID	Identifier of the view that was rendered by default by the Process Instance list. If this value is not specified, the Inbox view is used. This parameter can refer to any default view—for example, the History view—or any custom view the user creates
Charts	Widget ID	Identifier of the widget, either default or custom. IDs are handled by the Metrics API. If you specify a certain Widget ID as a parameter, that widget is rendered by the taskflow. If you do not specify any value here, a list with all available widgets is displayed on top. The user can then select the widget and also switch among all available widgets.
Audit Trail	Instance ID	Process instance ID
Stakeholders	Instance ID	Process instance ID

Table 13–1 (Cont.) Task Flows and Parameters

Task Flow	Parameter	Description
Process Catalog	Composer URL	URL of the composer application
Process Calendar	Show Expiration Date	Show expiration dates for the tasks assigned to the user in the calendar.
	Process Instance ID	Process instance ID.If not passed the events are shown across process instances.
	Show Activity Start Date	Show activity start dates in the calendar.
	Show Activity End date	Show activity end dates in the calendar.
	Show Assigned Date	Show task assigned dates for the user in the calendar.
	Show Due Date	Show task due dates assigned to the user in the calendar.

Note: To add a task flow to the resource catalog, follow the instructions in *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

13.3 Editing Pages in Process Spaces

When Process Spaces is installed, the page composer's catalog is modified to include the following folders:

- Process Work Space Resources
 - Available processes: All available processes that a logged-in user can instantiate
 - Charts: Charts that show various statistics
 - Process instance list: All process instances a user can access
 - Task list: List of tasks that user has to act upon
- Process Instance Space Resources
 - Audit trail: Audit trail of a given instance in tabular and graphical forms
 - Process calendar: Calendar that shows various important dates for a given process instance. Also capable of showing dates for all process instances of a user in context.
 - Stake holders: List of stake holders for a given instance.
- Process Modeling Space Resources
 - Process catalog: Process catalog viewer that shows all published processes.

While there are no restrictions about using these taskflows, they are grouped based on the group spaces to which they belong. However when a custom group space is created, you can mix and match the taskflow.

For taskflows to function correctly, you must pass the appropriate parameters to them. For configuring taskflow parameters, see the Oracle WebCenter documentation

For information about each taskflow, see [Section 13.2, "Understanding Task Flows in Process Spaces"](#)

You edit a page just as you would any other group space page. For more information, see *Oracle Fusion Middleware User's Guide for Oracle WebCenter*.

Each group space has a settings page for administering the group space. Process Workspace settings are configured to enable self-subscription for users. You can change these settings as needed. The rest of the default group space settings are similar to any other group space.

13.4 Configuring a Group Space in Process Spaces

For information about configuring a group space, see [Section 13.3, "Editing Pages in Process Spaces"](#).

A

User Interfaces of Oracle Business Process Management Workspace (Process Workspace)

This appendix contains these topics:

- [Section A.1, "The Process Workspace Tasks Page"](#)
- [Section A.2, "The Process Workspace Task Details Page"](#)
- [Section A.3, "The Process Workspace Process Tracking Page"](#)
- [Section A.4, "The Process Workspace Process Audit Details Panel"](#)

A.1 The Process Workspace Tasks Page

This page lists all the tasks and work items assigned to you, depending on your role. For example, all users will see the My Tasks and Initiated Tasks pages. Only supervisors will see the My Staff page, and only administrators will see the Administration Tasks page. The Tasks page has these sections, as shown in [Figure A-1](#):

- Task navigator on the left
- Task list on the upper half of the right side
- Task details on the lower half of the right side

Figure A-1 Process Workspace Tasks Page

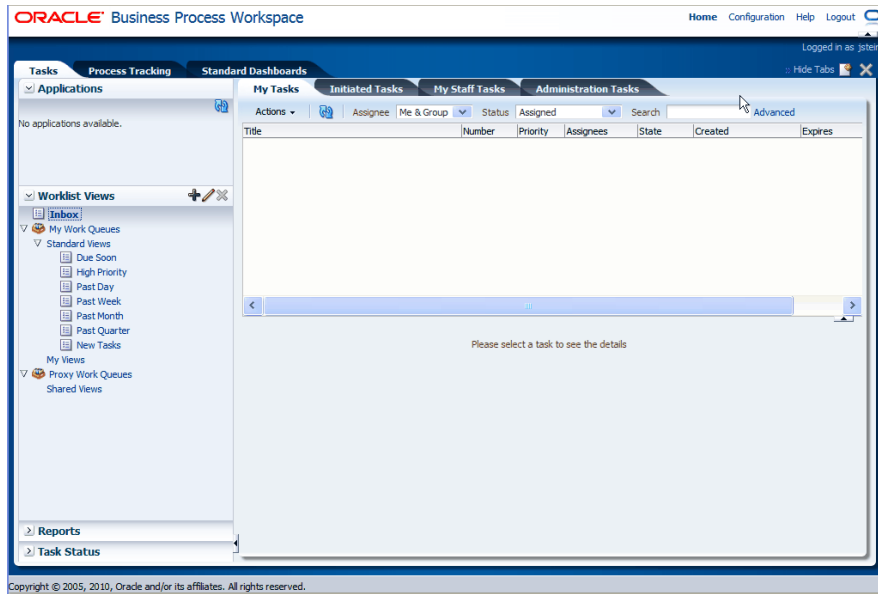


Table A-1 Components of the Tasks Page

Component	Description
Tabs	<p>The tabs displayed depend on the role granted to the logged-in user.</p> <ul style="list-style-type: none"> Everyone (the user role) sees My Tasks and Initiated Tasks. Users who are also supervisors see the My Tasks, Initiated Tasks, and My Staff Tasks tabs. Users who are also owners (of a process) see the My Tasks, Initiated Tasks, and Administration Tasks tabs. Users who are also administrators (the BPMWorkflowAdmin), but not supervisors, see the My Tasks, Initiated Tasks, and Administration Tasks. Users who are supervisors and administrators see all the tabs— My Tasks, Initiated Tasks, My Staff Tasks, and Administration Tasks.
Applications	The processes the user is authorized to initiate.
Worklist Views	<ul style="list-style-type: none"> Inbox—Shows all tasks that result from any filters you used. The default shows all tasks. My Work Queues—Shows standard views and views that you defined. Proxy Work Queues—Shows shared views.
Task Status	A bar chart shows the status of tasks in the current view.
Display Filters	<p>Specify search criteria from the View, Assignee, or Status fields. The category filters that are available depend on which tab is selected.</p> <ul style="list-style-type: none"> The View filters are Inbox, Due Soon, High Priority, and New Tasks. From the My Tasks page, the Assignee filters are My, Group, My & Group, Previous (tasks worked on in the past), and Reviewer. From the Initiated Tasks page, the only assignee filter is Creator. From the My Staff Tasks page, the only assignee filter is Reportees. From the Administration Tasks page, the only assignee filter is Admin. The Status filters include Any, Assigned, Completed, Suspended, Withdrawn, Expired, Errored, Alerted, Information Requested. <p>Use Search to enter a keyword or use Advanced Search.</p>

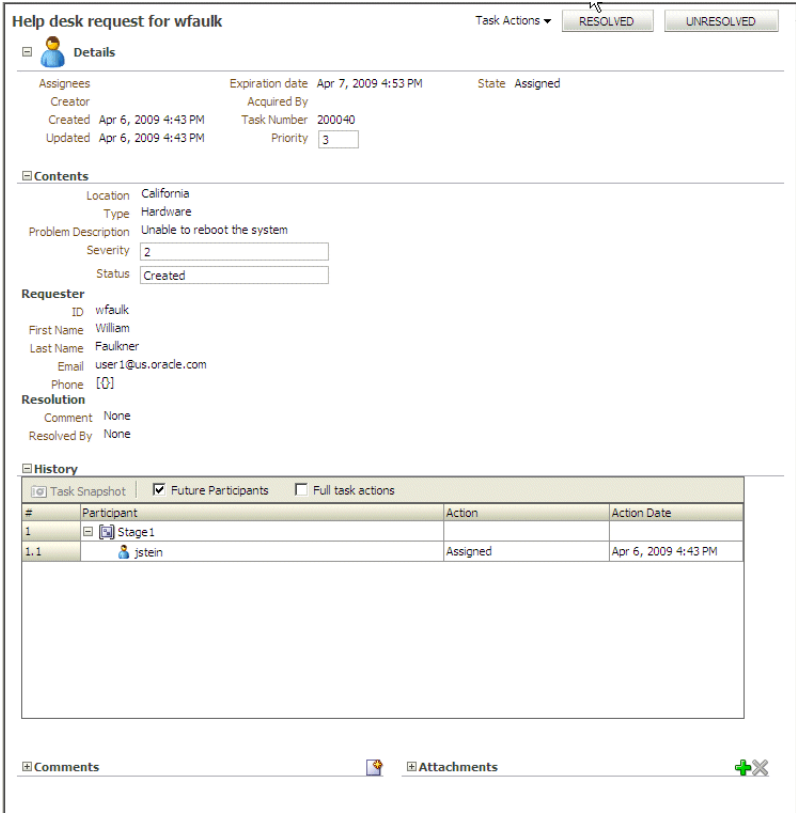
Table A-1 (Cont.) Components of the Tasks Page

Component	Description
Actions List	Select a group action (Claim) or a custom action (for example, Approve or Reject) that was defined for the human task. Claim appears for tasks assigned to a group or multiple users; one user must claim the task before it can be worked. Other possible actions for a task, such as system actions, are displayed on the Task Details page for a specific task. You can also create ToDo tasks and subtasks here.
Default Columns	Title—The title specified when the human task was created. Tasks associated with a purged or archived process instance do not appear. Number—The task number generated when the BPEL process was created. Priority—The priority specified when the human task was created. The highest priority is 1; the lowest is 5. Assignees—The user or group or application roles. State—Select from Assigned, Completed, Errored, Expired, Information Requested, Stale, Suspended, or Withdrawn. Created—Date and time the human task was created. Expires—Date and time the tasks expires, specified when the human task was created.
Task Details	The lower section of the worklist displays the inline view of the Task Details page. Buttons indicate available actions.

A.2 The Process Workspace Task Details Page

Figure A-2 shows an example of a Task Details page. This page is invoked by selecting a task from the inbox on the Process Workspace Tasks page.

Figure A-2 Example of a Task Details Page



The task details page has the following components:

- Basic information including the title of the task—for example, Help Desk Request for wfaulk—task number, creator, assignees, state, created date, the person who acquired the task, priority, expiration date, and other flex fields.
- Action buttons—For custom actions defined in the human task—for example, **Resolved** and **Unresolved** for a help desk request or **Approve** and **Reject** for a loan request. For the administrator, task initiator, or manager, **Withdraw** may also appear.
- Other Actions—System task actions, beyond the custom actions defined for the task—as described in [Table A-2](#).

Table A-2 System Task Actions

Action	Description
Claim	If a task is assigned to a group or multiple users, then the task must be claimed first. Claim is the only action available in the Action list for group or multiuser assignments. After a task is claimed, all applicable actions are listed.
Escalate	If you are not able to complete a task, you can escalate it and add an optional comment in the Comments area. The task is reassigned to your manager (up one level in a hierarchy).
Pushback	Use this action to send a task down one level in the workflow to the previous assignee.
Reassign	If you are a manager, you can delegate a task to reportees. A user with BPMWorkflowReassign privileges can delegate a task to anyone.
Release	If a task is assigned to a group or multiple users, it can be released if the user who claimed the task cannot complete the task. Any of the other assignees can claim and complete the task.
Renew	If a task is about to expire, you can renew it and add an optional comment in the Comments area. The task expiration date is extended one week. A renewal appears in the task history. The renewal duration for a task can be controlled by an optional parameter. The default value is P7D (7 days).
Submit Information and Request Information	Use these actions if another user requests that you supply more information or to request more information from the task creator or any of the previous assignees. If reapproval is not required, then the task is assigned to the next approver or the next step in the business process.
Suspend and Resume	If a task is not relevant, you can suspend it. These options are available only to users who have been granted the BPMWorkflowSuspend role. Other users can access the task by selecting Previous in the task filter or by looking up tasks in the Suspended status. A suspension is indefinite. It does not expire until Resume is used to resume working on the task.
Withdraw	If you are the creator of a task and do not want to continue with it, for example, you want to cancel a vacation request, you can withdraw it and add an optional comment in the Comments area. The business process determines what happens next. You can use the Withdraw action on the home page by using the Creator task filter.

- Content—The payload. The fields displayed are specific to how the human task was created.
- Short History—Provides a graphical view of a task flow and lists all versions created by the following tasks:
 - Initiate task
 - Reinitiate task
 - Update outcome of task

- Completion of task
- Erroring of task
- Expiration of task
- Withdrawal of task
- Alerting of task to the error assignee

You can include the following actions in the short history list by modifying the `shortHistoryActions` element.

- Acquire
 - Ad hoc route
 - Auto release of task
 - Delegate
 - Escalate
 - Information request on task
 - Information submit for task
 - Override routing slip
 - Update outcome and route
 - Push back
 - Reassign
 - Release
 - Renew
 - Resume
 - Skip current assignment
 - Suspend
 - Update
- History Details—The approval sequence and the update history for the task.
To see all actions performed, including those that do not change the task, such as adding comments, check **Full History**.
 - Comments and Attachments:
 - Comments entered by various users who have participated in the workflow. A newly added comment and the commenter's user name are appended to the existing comments. A trail of comments is maintained throughout the life cycle of the task. To add or delete a comment, you must have permission to update the task.

For information about how to add a comment, see [Section 3.5, "Associating Comments and Attachments with Tasks in Process Workspace"](#)
 - Attachments are documents or reference URLs associated with a task. These are typically associated with the workflow as defined in the human task or attached and modified by any of the participants using the task list. To add or delete an attachment, you must have permission to update the task. When adding file attachments, you can use an absolute path name or browse for a file.

A.2.1 Task History

The task history maintains an audit trail of the actions performed by the participants in the workflow and a snapshot of the task payload and attachments at various points in the workflow. The short history for a task lists all versions created by the following tasks:

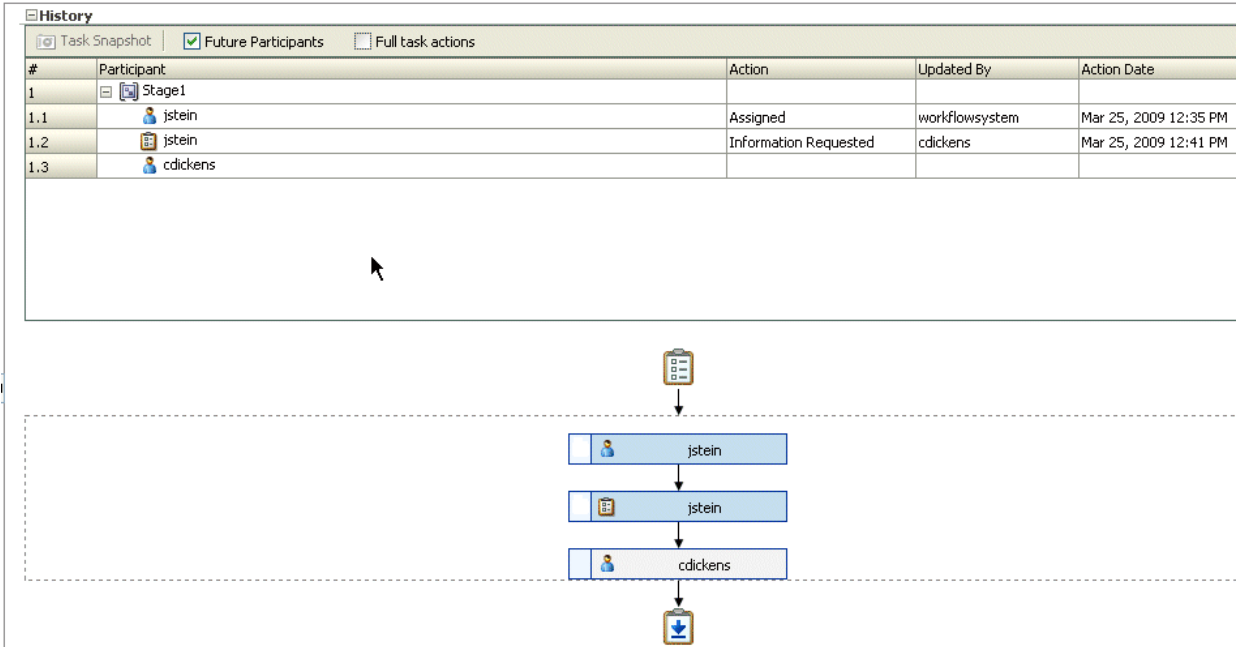
- Initiate task
- Reinitiate task
- Update outcome of task
- Completion of task
- Erroring of task
- Expiration of task
- Withdrawal of task
- Alerting of task to the error assignee

You can include the following actions in the short history list by modifying the `shortHistoryActions` element.

- Acquire
- Ad hoc route
- Auto release of task
- Delegate
- Escalate
- Information request on task
- Information submit for task
- Override routing slip
- Update outcome and route
- Push back
- Reassign
- Release
- Renew
- Resume
- Skip current assignment
- Suspend
- Update

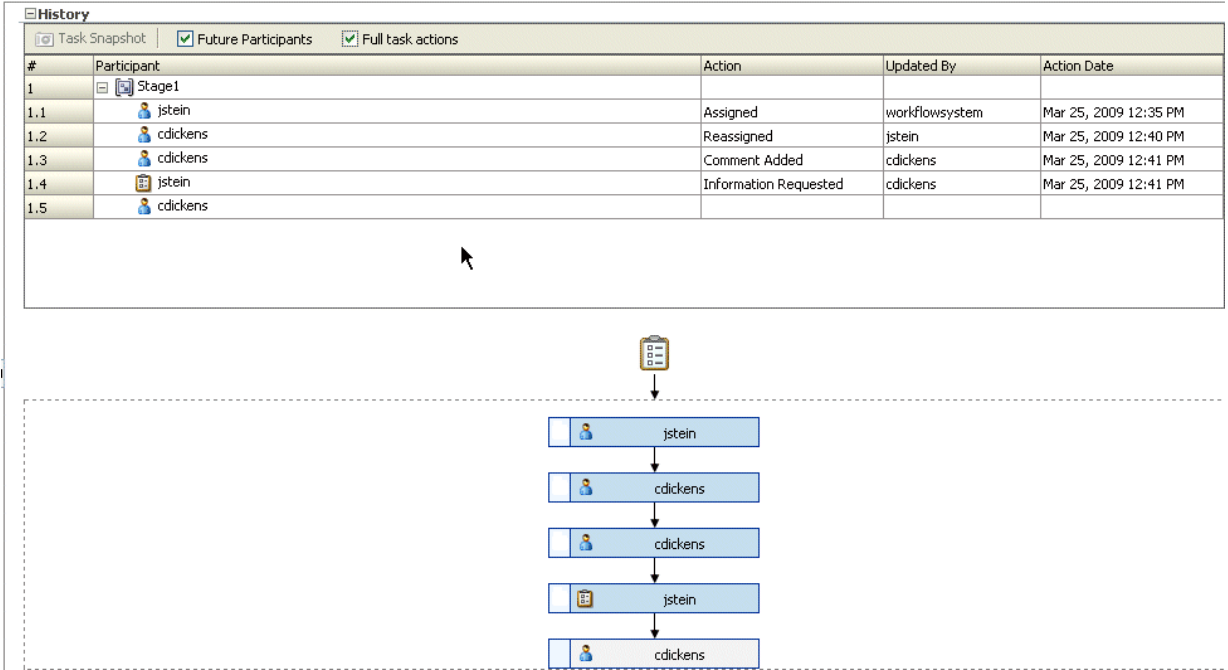
The history provides a graphical view of a task flow, as shown in [Figure A-3](#).

Figure A-3 History: Graphical View



Select **Full task actions** to see all actions performed, including those that do not make changes to the task, such as adding comments, as shown in Figure A-4.

Figure A-4 History: Full Task Actions



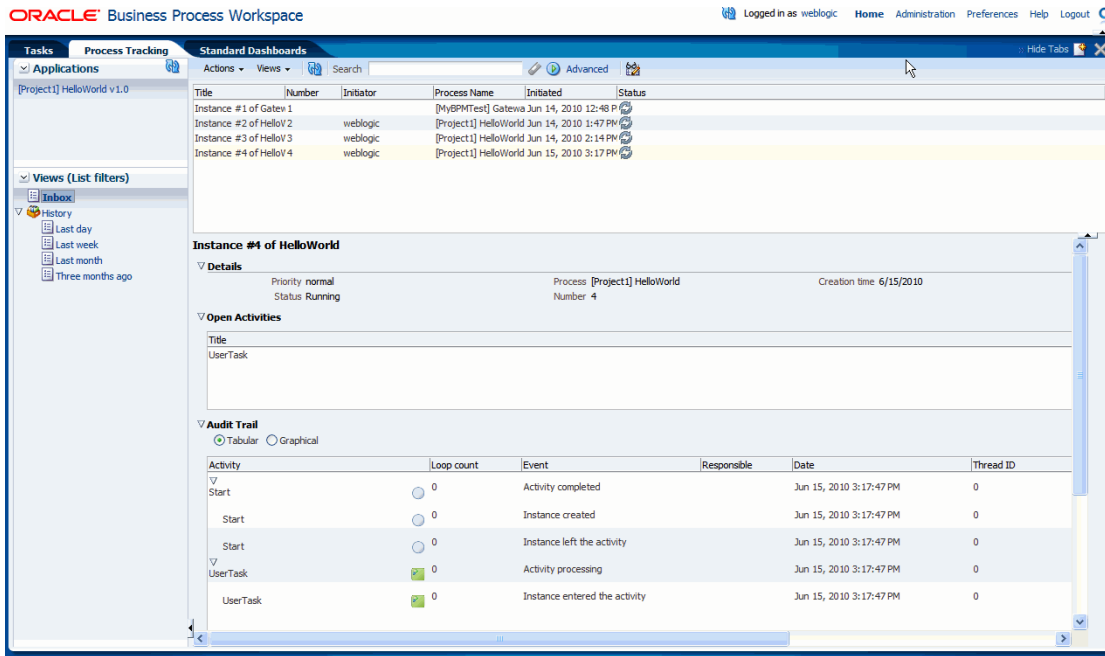
Available ways to view the task history include:

- Take a task snapshot
- See future approvers
- See complete task actions

A.3 The Process Workspace Process Tracking Page

The Process Tracking page has these sections as shown in [Figure A-5](#):

Figure A-5 Process Workspace Process Tracking Page



- The Applications panel, which shows the list of applications available to you. Here you can perform basic Process Workspace actions, such as creating a new instance or performing a given activity.

The applications available in Process Workspace depend on the process design and the roles assigned to the user currently logged in. The list of applications available also depends on the BPM processes that are deployed and running. The applications panel will be empty if no processes are running or if you are not a participant able to execute an application in any of the processes currently running.

- The Views panel, on the lower left half, displays the views available to you in an expandable tree
- The Work Items panel, on the upper right half, shows the task items corresponding to the view you have selected in the Views panel.
- The Work Item Detail panel, on the lower right half, shows detailed information about a work item that you have selected in the Work Items panel.

In the Work Items panel, you can choose the columns that are presented in a given view. A particular column arrangement is known as presentation. Clicking **Add/Remove columns** displays the Presentation dialog box in which you can define columns.

The following columns are available:

- Actions
- Activity
- Activity Due Date

- Copy
- Creation Time
- Deadline
- Description
- Has Attachments
- Has Notes
- Initiated
- Initiator
- Initiator Name
- Instance #
- Parent Copy
- Participant
- poID
- Priority
- Process Name
- Process Due Date
- Received
- Status
- Task Participant
- Title

A.4 The Process Workspace Process Audit Details Panel

The Process Audit Details panel is shown in the lower right half of [Figure A-6](#). It appears when you select a process instance in the Work Items panel just above it.

Figure A-6 Process Audit Details Panel

The screenshot shows the 'Instance #4 of HelloWorld' panel. It is divided into three main sections: Details, Open Activities, and Audit Trail.

Details: Priority normal, Status Running, Process [Project1] HelloWorld Number 4, Creation time 6/15/2010.

Open Activities: A table with columns Title, Priority, State, and Actions. The row shows 'UserTask' with Priority '-', State 'Running', and Action 'Run'.

Audit Trail: A table with columns Activity, Loop count, Event, Responsible, Date, and Thread ID. It shows a sequence of events: Start (Activity completed), Start (Instance created), Start (Instance left the activity), UserTask (Activity processing), and UserTask (Instance entered the activity).

Activity	Loop count	Event	Responsible	Date	Thread ID
Start	0	Activity completed		Jun 15, 2010 3:17:47 PM	0
Start	0	Instance created		Jun 15, 2010 3:17:47 PM	0
Start	0	Instance left the activity		Jun 15, 2010 3:17:47 PM	0
UserTask	0	Activity processing		Jun 15, 2010 3:17:47 PM	0
UserTask	0	Instance entered the activity		Jun 15, 2010 3:17:47 PM	0

The Process Audit Details panel displays the priority, process name, when the instance is due to complete, status, creation time, and the assignee if any.

If the selected process instance has any gateways with threads that are still running, the Open Activities section displays their status.

The Audit Trail section displays audit information in either tabular form or graphically depending on your selection.

Symbols

, 12-3

A

accessibility preferences

setting in Process Workspace, 2-8

administration

in Process Spaces, 13-1

in Process Workspace, 8-1

managing tasks, 8-15

applications panel

adding to a customized page in Process
Workspace, 5-2

approval groups

administering in Process Workspace, 8-18

dynamic, 8-23

static, 8-20

assignment rules for tasks with multiple assignees

in Process Workspace, 7-3

attachments

associating with a process instance in Process
Spaces, 12-2

associating with process instances in Process
Workspace, 4-4

associating with tasks in Process Workspace, 3-18

Audit Details panel in Process Workspace, A-9

B

bulk operations in Process Workspace, 4-4

C

canceling a process instance

in Process Spaces, 10-3

in Process Workspace, 4-4

comments

associating with process instances in Process
Spaces, 12-2

associating with process instances in Process
Workspace, 4-4

associating with tasks in Process Workspace, 3-18

communication between panels in Process

Workspace, 5-4

custom dashboards

graph content in, 6-3

in Process Spaces, 10-4

in Process Workspace, 6-3

custom pages in Process Workspace, 5-1, 5-5

creating, 5-1

custom panels in Process Workspace, 5-5

D

dashboards

in Process Spaces

using and customizing, 10-4

in Process Workspace, 2-5, 6-1

custom, 6-3

graph content in, 6-3

participant performance dashboard, 6-2

participant workload dashboard, 6-2

process performance dashboard, 6-3

process workload dashboard, 6-2

standard, 6-1

standard participant dashboards, 6-2

standard process dashboards, 6-2

panel

adding to a customized page in Process
Workspace, 5-2

to manage workflows, 7-5

data-driven settings

editing, 8-27

digital signatures, 3-25

in Process Workspace, 2-6

storage, 8-28

discussions in Process Spaces

in a process instance space, 12-3

participating in, 10-3, 12-3

documents

adding in Process Spaces, 12-3

adding to process instances in Process
Spaces, 10-3

adding to Process Workspace in Process
Spaces, 10-2

E

escalations, handling, 7-5

event-driven settings

editing, 8-26

evidence search, using in Process Workspace, 8-28
exceptions, managing in Process Workspace, 8-29

F

filtering
 process instances in Process Spaces, 10-3
 tasks
 in Process Spaces, 10-2
 in Process Workspace, 3-5
flex fields
 mapping in Process Workspace, 8-16
 using in Process Workspace, 8-16

G

group rules, 7-1
 creating in Process Workspace, 7-1
 setting in Process Workspace, 3-21
group spaces
 for an instance, in Process Spaces, 10-4
 for Business Process Management, 9-1
 in Process Spaces
 adding members, 10-2
group spaces in Process Spaces
 configuring, 13-4

I

information, requesting in Process Workspace, 3-18

L

local languages, accessing in Process Workspace, 2-6

M

mapping flex fields in Process Workspace, 8-16
members
 adding to group space in Process Spaces, 10-2
 adding to static approval group, 8-21
 deleting from approval groups, 8-22
 moving in approval groups, 8-22
 of groups, 8-10
 of roles, 8-10
 organizational roles as, 8-10
metadata migration utility, 8-29
modeling space
 in Process Spaces, 9-4

N

navigating
 Process Spaces, 9-2
 Process Workspace, 2-3
notification preferences
 setting in Process Workspace, 2-8, 3-23

O

Oracle WebCenter Group Spaces for BPM, 9-1

organization
 managing in Process Workspace, 8-4

P

pages in Process Spaces
 editing, 13-3
permissions
 in Process Spaces, 13-1
preferences
 setting in Process Workspace, 2-6, 3-19
presentation of process instances
 customizing in Process Workspace, 4-4
process instance
 panel
 adding to a customized page in Process
 Workspace, 5-3
 space in Process Spaces, 9-4, 12-1
 customizing, 12-3
 using and customizing, 12-1
process instances
 associating attachments with, 4-4
 associating comments with, 4-4
 canceling in Process Spaces, 10-3
 canceling in Process Workspace, 4-4
 customizing presentation, 4-4
 filtering in Process Spaces, 10-3
 in Process Spaces
 adding comments and attachments, 12-2
 initiating, 10-3
 tracking, 12-2
 in Process Workspace, 4-1
 initiating, 4-1
 searching for, 4-2
 viewing details in, 4-2
process modeling space page, in Process
 Spaces, 11-1
process modeling space, in Process Spaces, 11-1
 customizing, 11-2
 using and customizing, 11-1
Process Spaces
 acting on tasks, 10-2
 adding documents to process instances in, 10-3
 adding documents to Process Workspace in, 10-2
 adding members to group space, 10-2
 administration, 13-1
 canceling a process instance in, 10-3
 dashboards
 using and customizing, 10-4
 discussions, participating in, 10-3
 document
 adding, 12-3
 filtering process instances, 10-3
 filtering tasks, 10-2
 getting started, 9-1
 group space for an instance, 10-4
 groups spaces, configuring, 13-4
 initiating a process instance in, 10-3
 modeling space, 9-4
 using and customizing, 11-1

- modeling space in, 11-1
 - customizing, 11-2
- navigating, 9-2
- pages, editing, 13-3
- process instance space
 - using and customizing, 12-1
- process instance space in, 9-4, 12-1
 - customizing, 12-3
 - participating in a discussion, 12-3
- process instances in
 - adding comments and attachments, 12-2
 - tracking, 12-2
- process modeling space page in, 11-1
- Process Workspace group space in
 - subscribing to, 10-4
- Process Workspace Home page in, 10-1
- Process Workspace in, 9-3
 - customizing, 10-4
- roles and permissions, 13-1
- starting and logging in, 9-2
- task flows, 13-1
- understanding, 9-1
- viewing recent activity in, 10-3
- Process Tracking page in Process Workspace, 2-4, A-8
- Process Workspace, 2-8
 - acting on tasks, 3-1
 - administration, 8-1
 - approval groups, 8-18
 - managing exceptions, 8-29
 - managing tasks, 8-15
 - managing your organization, 8-4
 - task configuration, 8-25
 - using evidence search, 8-28
 - application preferences, changing the display of, 8-1
 - applications panel, adding to a customized page, 5-2
 - associating comments and attachments with process instances in, 4-4
 - associating comments and attachments with tasks in, 3-18
 - Audit Details panel, A-9
 - bulk operations in, 4-4
 - canceling a process instance in, 4-4
 - changing the display of the work items panel, 8-1
 - claiming and releasing tasks, 3-16
 - communication between panels, 5-4
 - creating and customizing worklist views, 3-12
 - creating group rules, 7-1
 - creating todo tasks and subtasks, 3-24
 - custom pages, 5-1, 5-5
 - creating, 5-1
 - custom panels, 5-5
 - customizing presentation of process instances in, 4-4
 - customizing the task list, 3-5
 - dashboards, 6-1
 - custom, 6-3
 - panel, adding to a customized page, 5-2
 - participant performance dashboard, 6-2
 - participant workload dashboard, 6-2
 - process performance dashboard, 6-3
 - process workload dashboard, 6-2
 - standard, 6-1
 - to manage workflows, 7-5
 - digital signatures in, 2-6
 - displaying Task Details page in, 3-2
 - filtering tasks, 3-5
 - graph content in custom dashboards, 6-3
 - group space in Process Spaces, 10-4
 - Home page, in Process Spaces, 10-1
 - in Process Spaces, customizing, 10-4
 - initiating process instances in, 4-1
 - local languages, 2-6
 - managing availability of users, 7-1
 - managing other users' or groups' rules, 8-2
 - managing workloads, 7-1
 - mapping flex fields, 8-16
 - navigating, 2-3
 - process instance panel, adding to a customized page, 5-3
 - Process Tracking page, 2-4, A-8
 - reassigning or delegating tasks, 3-17, 7-3
 - reports, 7-4
 - requesting information in, 3-18
 - routing tasks, 3-25
 - rules
 - group, 3-21
 - user, 3-20
 - searching for process instances in, 4-2
 - searching for tasks in, 3-16
 - setting a vacation period, 3-19, 3-23
 - setting accessibility preferences, 2-8
 - setting notification preferences, 2-8, 3-23
 - setting preferences, 2-6, 3-19
 - setting rules, 2-8, 3-19
 - standard dashboards
 - participant dashboards, 6-2
 - process dashboards, 6-2
 - Standard Dashboards page, 2-5
 - starting and logging in, 2-2
 - supervisors, 7-1
 - assignment rules for tasks with multiple assignees, 7-3
 - creating group rules, 7-1
 - handling escalations, 7-5
 - managing availability of users, 7-1
 - reassigning or delegating tasks, 7-3
 - using dashboards to manage workflows, 7-5
 - using reports to manage workflows, 7-3
 - system actions, 3-4
 - Task Details page, A-3
 - task history, A-6
 - Tasks page, 2-3, A-1, A-2
 - working with, 3-2
 - tasks requiring digital signatures, 3-25
 - tasks that require passwords, 3-25
 - using flex fields, 8-16
 - viewing details of process instances in, 4-2

viewing task details, 3-2
working on process instances in, 4-1

R

recent activity
 viewing in Process Spaces, 10-3
reports
 in Process Workspace, 7-4
roles
 in Process Spaces, 13-1
rules
 group
 creating in Process Workspace, 7-1
 setting in Process Workspace, 3-21
 managing other users' or groups' rules, 8-2
 setting in Process Workspace, 2-8, 3-19
 user, setting in Process Workspace, 3-20

S

searches
 advanced
 for process instances, 4-3
 basic
 for process instances, 4-2
 for process instances, 4-2
standard dahsboards
 participant dashboards, 6-2
 process dashboards, 6-2
standard dashboards, 6-1
Standard Dashboards page in Process
 Workspace, 2-5
starting and logging in
 to Process Spaces, 9-2
 to Process Workspace, 2-2
supervisors, 7-1
 assignment rules for tasks with multiple assignees
 in Process Workspace, 7-3
 creating group rules, 7-1
 handling escalations, 7-5
 managing availability of users, 7-1
 reassigning or delegating tasks, 7-3
 using dashboards to manage workflows, 7-5
 using reports to manage workflows, 7-3
system action
 in Process Workspace, 3-4

T

task configuration in Process Workspace, 8-25
Task Details page
 displaying in Process Workspace, 3-2
 in Process Workspace, A-3
task details, viewing in Process Workspace, 3-2
task flows
 in Process Spaces, 13-1
task history, A-6
 in Process Workspace, A-6
task list
 customizing in Process Workspace, 3-5

tasks
 acting on
 in Process Spaces, 10-2
 acting on, in Process Workspace, 3-1
 claiming and releasing in Process
 Workspace, 3-16
 filtering
 in Process Spaces, 10-2
 filtering in Process Workspace, 3-5
 managing in Process Workspace, 8-15
 reassigning and delgating in Process
 Workspace, 3-17
 requiring digital signatures, 3-25
 requiring passwords, 3-25
 routing in Process Workspace, 3-25
 searching for in Process Workspace, 3-16
Tasks page
 in Process Workspace, 2-3, A-1
 working with in Process Workspace, 3-2
todo tasks and subtasks
 creating in Process Workspace, 3-24

U

user metadata migration utility, 8-29
user rules, setting in Process Workspace, 3-20

V

vacation period
 setting in Process Workspace, 2-8, 3-19, 3-23
views, worklist
 in Process Workspace, 3-12

W

work items, changing the display in Process
 Workspace, 8-1
worklist views
 creating and customizing
 in Process Workspace, 3-12
 customizing, 3-15
workloads, managing in Process Workspace, 7-1