

Oracle® WebCenter Content

Concepts Guide

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Contents

Preface	v
Audience	v
Documentation Accessibility	v
Related Documents	v
Conventions	v
1 Introduction	
2 Oracle WebCenter Content	
2.1 WebCenter Content and Oracle WebLogic Server.....	2-1
2.1.1 Installation Changes from 10g	2-2
2.1.2 Administrative Changes	2-2
2.1.3 Other Changes.....	2-2
2.2 Integrating WebCenter Content In Your Environment.....	2-3
2.2.1 Using the IdcCommand Utility	2-3
2.2.2 Using the COM API.....	2-3
2.2.2.1 Using the IntradocClient OCX Component.....	2-4
2.2.2.2 Using the ODMA API.....	2-4
2.2.3 Remote Intradoc Client (RIDC)	2-4
2.3 Document Management.....	2-4
2.3.1 Content Server.....	2-5
2.3.1.1 Folios	2-5
2.3.1.2 Folders.....	2-6
2.3.1.3 Desktop	2-6
2.3.1.4 Dynamic Converter	2-6
2.3.1.5 Content Categorizer	2-6
2.3.1.6 Content Tracker	2-7
2.3.1.7 PDF Watermark	2-7
2.3.2 Content Basket	2-8
2.3.3 Application Adapters.....	2-8
2.4 Digital Asset Management	2-8
2.4.1 Conversion Server	2-9
2.4.1.1 Inbound Refinery.....	2-9
2.4.1.2 PDF Converter	2-10
2.4.1.3 XML Converter	2-10

2.4.1.4	Tiff Converter.....	2-10
2.4.2	Digital Asset Manager.....	2-11
2.4.2.1	Image Manager.....	2-11
2.4.2.1.1	Renditions.....	2-11
2.4.2.2	Video Manager.....	2-11
2.5	Web Content Management.....	2-12
2.5.1	Site Studio.....	2-12
2.5.2	Site Studio for External Applications.....	2-13
2.5.3	Content Portlet Suite.....	2-13
2.6	Retention Management with Adapters.....	2-14
2.6.1	Architecture.....	2-14
2.6.2	Basic Operation.....	2-14

3 Oracle WebCenter Content: Imaging

3.1	Imaging Overview.....	3-1
3.2	Oracle WebCenter Imaging and Content Server.....	3-2
3.3	Oracle WebCenter Imaging Integration with Oracle Technologies.....	3-3

4 Oracle WebCenter Content: Records

4.1	Records Overview.....	4-1
4.2	The Retention Process.....	4-2

5 Oracle Information Rights Management

5.1	IRM Overview.....	5-1
5.2	Rights and Synchronization.....	5-1

6 Oracle WebCenter Content Application Adapters

6.1	Application Extension Framework (AXF).....	6-1
6.2	Oracle E-Business Suite Adapter for Content Server and Imaging.....	6-1
6.3	Oracle Siebel Adapter for Content Server.....	6-2
6.4	Oracle PeopleSoft Adapter for Content Server and Imaging.....	6-2

Index

Preface

This document provides an overview of the products available as part of Oracle WebCenter Content.

Audience

This document is intended for anyone interested in an overview of the components and features that comprise Oracle WebCenter Content.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at

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Related Documents

Detailed product documentation is available for all of the products mentioned in this document. For details, see the documentation listed in each section.

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.

Convention	Meaning
<i>IntradocDir</i> /ucm/urm /config	The default location for configuration files mentioned in this documentation. <i>IntradocDir</i> is used to refer to the root directory for the actual configuration and data files specific to an instance deployed on the Oracle UCM domain on an Oracle WebLogic Server.

Introduction

Oracle® WebCenter Content is a comprehensive suite of digital content management tools. These tools can be used across the enterprise to cohesively track, manage, and dispose of content whether written, in digital images, or as email. It brings together the most complete portfolio of portal, web experience management, content, social, and collaboration technologies into a single integrated product suite.

This document provides an overview of the products included in WebCenter Content. It is divided into the following chapters:

- [Chapter 2, "Oracle WebCenter Content"](#)
- [Chapter 3, "Oracle WebCenter Content: Imaging"](#)
- [Chapter 4, "Oracle WebCenter Content: Records"](#)
- [Chapter 5, "Oracle Information Rights Management"](#)
- [Chapter 6, "Oracle WebCenter Content Application Adapters"](#)

Many of the products discussed in this document use other products to increase functionality and flexibility. For example, the Oracle WebCenter Content: Imaging product integrates with Oracle Document Capture and Oracle Distributed Document Capture to convert physical documents into an electronic format that can be uploaded and used in Imaging.

Most of the products mentioned in this overview use WebCenter Content to manage the files used in the product set. For example, Oracle WebCenter Content: Records uses Content Server as a repository for the files that are tracked and managed by the Records product.

Because of this interaction between products, it is recommended that you read this entire document to familiarize yourself with the entire product family available with WebCenter Content.

Detailed documentation is provided for all of the products discussed in this document as well as online help. In addition to the guides provided with the product, you can access information about product functionality with context-sensitive tooltips, quick help, and the help menu. Click the **Help** button where available on pages and screens to view context-sensitive help for that page or screen.



Oracle WebCenter Content

Oracle® WebCenter Content provides a unified application for several different kinds of content management. It provides organizations with a unified repository to house unstructured content, and deliver it to business users in the proper format, and within context of familiar applications to fit the way they work.

This chapter discusses the following topics:

- [Section 2.1, "WebCenter Content and Oracle WebLogic Server"](#)
- [Section 2.2, "Integrating WebCenter Content In Your Environment"](#)
- [Section 2.3, "Document Management"](#)
- [Section 2.4, "Digital Asset Management"](#)
- [Section 2.5, "Web Content Management"](#)
- [Section 2.6, "Retention Management with Adapters"](#)

WebCenter Content is documented in several manuals, which are noted throughout this chapter.

- *Oracle WebCenter Content Installation Guide*
- *Oracle WebCenter Content System Administrator's Guide for Content Server*
- *Oracle WebCenter Content Developer's Guide for Content Server*
- *Oracle WebCenter Content User's Guide for Content Server*
- *Oracle WebCenter Content Services Reference Guide*
- *Oracle WebCenter Content Idoc Script Reference Guide*
- *Oracle WebCenter Content Administrator's Guide for Conversion*

2.1 WebCenter Content and Oracle WebLogic Server

WebCenter Content 11g is deployed in WebLogic Server (WLS), resulting in many significant changes from previous releases of UCM. This section summarizes those changes.

- [Section 2.1.1, "Installation Changes from 10g"](#)
- [Section 2.1.2, "Administrative Changes"](#)
- [Section 2.1.3, "Other Changes"](#)

2.1.1 Installation Changes from 10g

WebCenter Content uses the Oracle Universal Installer and the Repository Creation Utility (RCU). The following steps, detailed in the *Oracle WebCenter Content Installation Guide*, are required to install the product:

1. Install WebLogic Suite
2. Install patch updates if needed
3. Set up a database schema
4. Unpack and run RCU
5. Unpack and run the installer
6. Create a domain using the Configuration Wizard
7. Start the servers in the domain

Other optional tasks, such as modifying memory arguments for managed servers and setting up a node manager can also be done.

See the *Oracle WebCenter Content Installation Guide* for details about installation and options.

2.1.2 Administrative Changes

WebCenter Content uses a WLS datasource to communicate with the database where metadata and other information is stored. This database connectivity and the communication parameters are managed using the WebLogic Management Console, not the Content Server System Properties utility as was previously done.

Other administrative changes are summarized in this list:

- Running in standalone mode: To run applications or utilities in a standalone mode the database connection information must be entered into the config.cfg file using the System Properties utility.
- Connection pooling and management: The WLS datasource connection pooling mechanism handles database connections.
- Support has been added for the IBM WebSphere Application Server (WAS).
- User administration: WebCenter Content uses the WLS user store to manage user names and passwords. Therefore user management must be performed using the WLS user management tools rather than the User Admin applet in Content Server. All user authentications are done against the WLS user store. You can use the Admin applet to create users and assign passwords, but the user must also be created and assigned a password in the WLS user store.

2.1.3 Other Changes

The following list provides a cursory overview of other important changes when using WebCenter Content in a WebLogic environment. Consult the product documentation for detailed information:

- Admin Server use: Each Content Server instance will have one admin server instance. An Admin Server can only perform management tasks on the Content Server that is installed on the same WLS domain.
- Proxy Server: A customer can install only one Content Server per WLS domain. Customers can no longer run a proxied Content Server instance.

- **Port:** By default, Content Server no longer listens on any port. Configuration settings can be changed to use a specific port.
- **Login:** WebCenter Content provides a form-based login mechanism rather than a Basic Auth login method. As a result, users can now log out of the Content Server without closing their browser.
- **Access mode:** WebCenter Content is accessible via HTTP and HTTPS by default.
- **Internationalization:** Users can specify a time zone using their profile page. If the locale is not specified in a profile, the system determines that from a HTTP header variable.
- **Services and WLST:** Content Server cannot easily be run as a Windows service using WLS. Mbeans are provided that are accessible via WLST commands which can be used to view and set some configuration parameters.
- **Directory structure:** the directory structure and location of files has changed significantly. Consult the product documentation for details.

2.2 Integrating WebCenter Content In Your Environment

Several methods are available for integrating WebCenter Content with enterprise applications such as application servers, catalog solutions, personalization applications, enterprise portals, and client-side software. In general, these integration methods serve to translate or pass methods and associated parameters with the goal of executing Oracle WebCenter Content Server services.

A Content Server service is a window for accessing the content and content management functions within Oracle WebCenter Content. For example, one simple integration option is to reference content that is managed within WebCenter Content by a persistent URL. Some other integration options enable you to use the Java API, the Microsoft Component Object Model (COM) interface, or the ActiveX control.

For complete details about integrations options, see the *Oracle WebCenter Content Developer's Guide for Content Server*.

2.2.1 Using the IdcCommand Utility

The IdcCommand utility is a standalone Java application that executes Content Server services. Almost any action you can perform from the Content Server browser interface or administration applets can be executed from IdcCommand.

The program reads a specifying command file, which contains service commands and parameters, and then calls the specified services. A log file can record the time that the call was executed, whether the service was successfully executed, and if there were execution errors.

The IdcCommand utility returns only information about the success or failure of the command. To retrieve information from Content Server in an interactive session, use the Java COM wrapper IdcCommandX, available on Microsoft Windows platforms.

2.2.2 Using the COM API

You can use a COM interface to integrate Content Management with Microsoft environments and applications. An ActiveX control and an OCX component are provided as interface options to gain access to the content and content management functions within Content Server. Additionally, you can communicate with ODMA-aware applications through a COM interface.

2.2.2.1 Using the IntradocClient OCX Component

An Object Linking and Embedding Control Extension (OCX) control is provided for connecting to a remote Oracle WebCenter Content Server instance and executing Content Server services. The IdcClient OCX control is used within a Windows Visual Basic development environment to gain access to the content and content management functions within Content Server.

You can call Content Server services with the IdcClient OCX control. The IdcClient.ocx control is used to connect to a remote Oracle WebCenter Content Server instance and perform typical server functions.

2.2.2.2 Using the ODMA API

The Open Document Management Application (ODMA) is a standard API used to interface between desktop applications and file management software. The ODMA integration for Content Server is available with Desktop, a separate product. Use the ODMA-integration products to gain access to the content and content management functions within Content Server (for ODMA-compliant desktop applications).

You can publish files to your web repository directly from any ODMA-compliant application, such as Microsoft Word, Corel WordPerfect, and Adobe FrameMaker. With the web-centric adoption of ODMA, you can check in and publish information directly to the Web. This is a significant advancement over traditional ODMA client/server implementations, where information is published first to a server and is not immediately available on the Web for consumption.

2.2.3 Remote Intradoc Client (RIDC)

This feature supersedes Content Integration Suite.

As mentioned, earlier, the Remote Intradoc Client (RIDC) provides a thin communication API for communication with Content Server. This API removes data abstractions to the Content Server while still providing a wrapper to handle connection pooling, security, and protocol specifics.

RIDC supports Intradoc socket-based communication and the HTTP protocol.

Intradoc communication is handled via the Content Server Intradoc port (typically 4444). This communication method requires a trusted connection between the client and Content Server. Intradoc communication can also be configured to run over SSL.

The implementation of the HTTP protocol uses Apache's Jakarta HttpClient. Communication with the content server using the HTTP protocol requires authentication credentials for each request.

See "Using RIDC to Access Content Server" in the *Oracle WebCenter Content Developer's Guide for Content Server* for details.

2.3 Document Management

WebCenter Content products manage not only content but digital assets as well. This section describes those products that can be used to manage document content. It includes the following sections:

- [Section 2.3.1, "Content Server"](#)
- [Section 2.3.2, "Content Basket"](#)
- [Section 2.3.3, "Application Adapters"](#)

2.3.1 Content Server

Content Server is the foundation for a variety of Oracle content management products. It provides a flexible, secure, centralized, web-based repository that manages all phases of the content life cycle from creation and approval to publishing, searching, expiration, and archiving or disposition.

Every contributor throughout the organization can easily contribute content from native desktop applications, efficiently manage business content via rich library services, and securely access that content anywhere using a web browser.

A number of components providing advanced functionality are included with Content Server. These components may be rolled into the core or available to enable after installation.

All content, regardless of content type, is stored in the web repository or database for management, reuse and access. While stored in the repository, all types of content ranging from e-mail, discussions, documents, reports, spreadsheets and records to images, multimedia or other digital formats receive the same set of fundamental core services.

The Content Server is documented in the following manuals:

- *Oracle WebCenter Content System Administrator's Guide for Content Server*
- *Oracle WebCenter Content Developer's Guide for Content Server*
- *Oracle WebCenter Content User's Guide for Content Server*

2.3.1.1 Folios

Content Folios is an optional component that is automatically installed with Content Server. When enabled, it provides a quick and effective way to assemble, track, and access logical groupings of multiple content items from within the secure environment of Content Server. For example, all items relevant to an upcoming brochure, such as images, logos, legal disclosures, and ad copy, can be assembled and sent through a workflow process. Once approved, all associated content can be downloaded and sent for print.

Or perhaps a new project requires a virtual place to assemble all relevant content items in a particular hierarchy, whenever they are checked in, with restricted access to particular areas of the hierarchy. Or a video may need to be associated and tracked with release waivers and narration text. All this can be done with Content Folios.

Technically, a content folio is an XML file checked into the repository that uses elements to define a hierarchical structure of nodes, slots, and specified content items in Content Server. In practice, a content folio is a logical grouping, or a framework in which content stored in the repository can be structured. Simple folios are a flat container, while advanced folios can nest content in a hierarchy within folders. In an advanced folio, the hierarchy may be established prior to assembling content items, or it may be created during or subsequent to assembling the items.

Existing folios can have content added to them, or can be locked so that no changes can be made. Content items can be added to a simple folio by searching Content Server, and to an advanced folio by checking new items into the repository or by searching for content that has previously been checked in, all through the folio interface. An advanced folio can even contain hyperlinks to outside resources such as web sites or shared network drives.

2.3.1.2 Folders

FrameworkFolders is an optional component that is automatically installed with Content Server. When enabled, Folders provides a hierarchical folder interface similar to a conventional file system, for organizing and locating some or all of the content in the repository. The Folders functionality is installed and enabled by default. Folders is a scalable, enterprise solution and is intended to replace the earlier Contribution Folder (or Folders_g) interface.

Query folders can be used to return content based on a query associated with the folder. These types of folders can also have retention dispositions associated with the folder.

In addition, a migration utility is available to move folders and folder content from the earlier Folders_g component.

2.3.1.3 Desktop

The Desktop product provides a set of embedded applications that help you seamlessly integrate your desktop experience with Content Server. More specifically, it provides convenient access to the repository from Microsoft Windows Explorer, desktop applications like Microsoft Word and Excel, and e-mail clients like Microsoft Outlook and Lotus Notes.

As a result, you can easily manage files in the repository and share files with users directly from your desktop instead of logging into Content Server and using a web browser.

See the *Oracle WebCenter User's Guide for Desktop* for details.

2.3.1.4 Dynamic Converter

Dynamic Converter is a transformation technology and on-demand publishing solution for critical business documents. With Dynamic Converter, you can easily convert any business document into a Web page for a specified audience without use of the application used to create that document. The benefits are immediate. Information can be exchanged freely without the bottleneck of proprietary applications.

When a Web browser first requests a document, a set of rules are applied to determine how that document should appear as a Web page. These rules can be defined in a template, a core component of Dynamic Converter.

Dynamic Converter offers a number of benefits to the user:

- Business documents can be easily viewed in a Web browser.
- Native applications (such as Adobe Acrobat, Microsoft Word, etc.) are not required.
- Multiple renditions of a document are available for different devices (Web browsers, wireless devices, etc.)
- Numerous business document types, including legacy formats, are supported.

See the *Oracle WebCenter Content Administrator's Guide for Dynamic Converter* and the *Oracle WebCenter Content Administrator's Guide for Dynamic Converter* for details.

2.3.1.5 Content Categorizer

Content Categorizer provides organizations with the capability to use one or more taxonomies within Content Server. In addition to its out-of-the-box categorization tools and functionality, Content Categorizer provides an open API for third-party

categorization engines. With this open architecture, users can take advantage of the rule sets and taxonomies provided by third-party categorization tools. As a result, organizations can choose the categorization engine that best fits their business needs. For example, organizations can use their existing vertical industry taxonomy to organize their managed content into specific categories and subcategories.

Content Categorizer enables administrators and content contributors to automatically, uniformly and intelligently categorize content as it is checked into the repository. Perfect for loading large amounts of existing content into Content Server, Content Categorizer can be used in batch mode, freeing administrators of the responsibility of assigning metadata to each individual content item. End users, on the other hand, will appreciate Content Categorizer for its ability to suggest appropriate metadata as they check in new pieces of content.

To suggest a category or specific value for each of the metadata fields, Content Categorizer uses a set of rules to analyze content items. Some automatic categorization rules include: direct correlation using file properties or text references; score computations based on word matching; sentence or paragraph summaries automatically pulled from files; or certain language pattern recognition. Rule sets can also be used from other third party categorization engines.

This functionality is documented in the *Oracle WebCenter Content Application Administrator's Guide for Content Server*.

2.3.1.6 Content Tracker

Content Tracker allows website administrators to use key metrics to define reports for analyzing usage of Content Server. Content Tracker's tight integration with Content Server makes it possible to run reports based on specific user profile information, groups of users, or on any set of content that can be defined by a query or group of metadata values. This flexibility allows for extremely granular content analysis, giving web teams crucial information to more strategically manage and improve upon their site.

Content Tracker uses data gathered in the web server log files, web filter log files, and Content Server's database tables to generate information regarding the content items accessed. This information could include metadata, user profile data as well as information from the users themselves. Content Tracker then populates this information into database tables in any RDBMS database such as Oracle or Microsoft SQL Server. Once this database is populated, customized reports can be generated according to the needs of the user.

This functionality is documented in the *Oracle WebCenter Content Application Administrator's Guide for Content Server*.

2.3.1.7 PDF Watermark

PDF Watermark is an optional component that is automatically installed with Content Server. If enabled, it allows watermarks to be applied to PDF files generated by PDF Converter (static watermarking) and returned to the repository.

Existing PDF files already residing on the repository can also be watermarked (dynamic watermarking). Dynamic watermarks are generated as needed and can contain variable information (for example, user name, date and time of download, or file name). System administrators can define variables and set up specific conditions for generating dynamic watermarks.

PDF Watermark can also add security features to PDF files as they are downloaded for viewing. Access settings can be enabled or disabled, such as printing or modifying the file.

Static watermarking is conducted in cooperation with Inbound Refinery and PDF Converter. Only content that is converted to PDF by the PDF Converter can be watermarked. You can request a static watermark for content that you expect to be converted to PDF by entering a valid PDF Watermark Template ID (dDocName) in the xPdfwTemplateID metadata field during checkin.

Content checked in by an automated process, for example WebDAV or BatchLoader, can also be given a static watermark, subject to the IBR/PDFC restriction described above and provided the xPdfwTemplateID field contains a valid template ID.

Dynamic watermarking of PDF content is rules-based. The PDF Watermark Administration screen is provided to define rulesets via the Rules tab. If a given request for a PDF document satisfies one of the pre-defined rules, the template associated with that rule is used to watermark a copy of the content before the copy is returned to the requesting user. Only the weblayout form will be watermarked, the original PDF file is unchanged in its vault location.

See the *Oracle WebCenter Content Application Administrator's Guide for Content Server* and the *Oracle WebCenter Content User's Guide for Content Server* for details.

2.3.2 Content Basket

Content Basket enables you to quickly find, group, and download multiple content items. For example, you may need to send an organization's logo along with several articles for your newsletter to a printing agency, or e-mail a group of documents to a vendor. With Content Basket, you can select items to add to your content basket from any content information or search results page.

After an item is added to your content basket, you can access the content basket from the My Content Server tray and download a single compressed file of the content items you need.

2.3.3 Application Adapters

The following adapters can be used in conjunction with WebCenter Content:

- Oracle E-Business Suite Adapter, described in [Section 6.2, "Oracle E-Business Suite Adapter for Content Server and Imaging."](#)
- Siebel Adapter for Content Server, described in [Section 6.3, "Oracle Siebel Adapter for Content Server."](#)
- Oracle PeopleSoft Adapter, described in [Section 6.4, "Oracle PeopleSoft Adapter for Content Server and Imaging."](#)

2.4 Digital Asset Management

Several solutions are available for managing digital assets and converting those assets for use in a Content Server repository.

This section discusses the following topics:

- [Section 2.4.1, "Conversion Server"](#)
- [Section 2.4.2, "Digital Asset Manager"](#)

2.4.1 Conversion Server

Several different conversion products are available to publish native content items in different formats as needed at your site. The following conversion products are discussed in this section:

- [Section 2.4.1.1, "Inbound Refinery"](#)
- [Section 2.4.1.2, "PDF Converter"](#)
- [Section 2.4.1.3, "XML Converter"](#)
- [Section 2.4.1.4, "Tiff Converter"](#)

See the *Oracle WebCenter Content User's Guide for Content Server* and the *Oracle WebCenter Content Administrator's Guide for Conversion* for details.

2.4.1.1 Inbound Refinery

Content Server now optionally provides basic thumbnail creation for supported file types or you can use Inbound Refinery, an add-on module to Content Server that manages all file conversions at the input side of Content Server (hence "Inbound"). It also provides the ability to generate thumbnails. Files are converted upon check-in of the content into Content Server.

Inbound Refinery includes Outside/In Image Export, which can be used for the following:

- To create thumbnails of files checked into the repository. Thumbnails are small preview images of content. Outside In Image Export can also be used to create thumbnails of PDF files generated by PDF Converter.
- To convert files checked into the repository to multi-page TIFF files as the primary web-viewable rendition.

In addition to the conversions that Inbound Refinery can perform using Outside In Image Export, several conversion add-ons are available for purchase and use with Inbound Refinery. The additional types of files that Inbound Refinery can convert, and the result of each conversion, depend on the conversion add-ons that are installed on the Inbound Refinery computer.

The Refinery Process

When a file is checked into the repository, a copy of the native file is stored in the native file repository (the '*vault*' directory). The native file is the format in which the file was originally created (for example, Microsoft Word).

If the file format is configured to be converted, it is placed in a queue for further processing. At set intervals, Inbound Refinery checks the queue. If a file is present, Inbound Refinery calls the appropriate conversion add-on to perform the actual conversion. The exact conversion process depends on how Inbound Refinery is set up. In some situations, conversion may be done entirely in the background, with no noticeable interaction. In others, a file may be opened in its native application and printed to a PostScript file, which is subsequently translated into a different format (for example, a PDF file). In that case, windows are automatically opened and closed on the Inbound Refinery machine. The converted file (for example, a web-viewable PDF file) is then copied to the web-viewable file repository (the '*weblayout*' directory). Users can then view the file through their web browser.

If the file format is not set up to be converted (or if the conversion fails), no web-viewable file is created and a copy of the native file is placed in the *weblayout* directory. This means that the file is passed through to the library in its native format.

Users must then have the native application installed on their computer to view the file.

2.4.1.2 PDF Converter

PDF Converter enables the automatic publishing of native content items to web-viewable PDF (Portable Document Format) files. A PDF rendition of the native format is immediately generated upon check-in of new content into the repository. This PDF rendition allows web viewing of that content item without requiring users to install native applications. PDF Converter converts over 35 file formats to PDF, such as Adobe Framemaker, Illustrator, InDesign, PageMaker, and Photoshop as well as Hangul, JustSystems Ichitaro, Lotus Smartsuite, Microsoft Office, Microsoft Visio, and Oracle OpenOffice.

PDF Converter optimizes non-optimized PDF files and also processes links such as Microsoft Word hyperlinks, 'mailto' links, and table-of-content links.

2.4.1.3 XML Converter

XML Converter gives XML-based access to information in unstructured business content. With XML Converter, content contributed to Content Server is converted to XML at the time of check-in. XML Converter converts over 225 document types and supports the leading word processing formats, such as Microsoft Word, Lotus WordPro, and Corel WordPerfect. It also includes support for popular spreadsheet, presentation, and graphic formats.

When a new content item is checked into the repository, XML Converter converts the content to either a SearchML or FlexionDoc format. FlexionDoc is very verbose and captures all information, including attributes such as styles in a Microsoft Word document. From there, administrators have the ability to check in different XSL files that would then convert the SearchML or FlexionDoc document to any XML format.

Administrators also have the option to use a DTD (Document Type Definition) to validate the XML generated from the XSL transformation. If there is an error in conversion, all the relevant documents (for example, the original SearchML or FlexionDoc file, the XML file generated after XSL transformation, and the error report) are all checked in and can be sent through a workflow for the developer/administrator to debug.

Because the XML file is stored and managed within the web-based repository, it can be accessed from any location using a web browser, making it available for other enterprise applications, data exchange, re-use and further conversion into additional formats. XML Converter provides an out-of-the box XML solution with enterprise level performance, while ensuring compatibility with the W3C standards specifications.

2.4.1.4 Tiff Converter

Tiff Converter enables organizations to check TIFF (Tagged Image File Format) files into Content Server and then publish these as multiple-page PDF files.

Tiff Converter uses either CVISION CVista PdfCompressor or Adobe Acrobat Capture to convert single-page TIFF files, multiple-page TIFF files, or zip files containing multiple TIFF files (TIFZ, TIZ or ZIP file extensions) to a single PDF file. Additionally, during the TIFF to PDF conversion, Optical Character Recognition (OCR) is performed, enabling users to perform full-text searches of managed TIFF files in Content Server.

Tiff Converter is very useful in scanning applications. It automatically converts TIFF images to PDF format upon check-in to the repository for easy viewing of legacy

content. The conversion of the released TIFF image can occur on the client side or server side and uses the Adobe Acrobat Capture technology. With TIFF Converter, users can easily view and access managed legacy content (scanned documents) via a browser with the Adobe Reader.

2.4.2 Digital Asset Manager

Digital Asset Manager (DAM) enables you to define and provide images and videos in specified formats and sizes for download by the people in your organization who need them. This helps your organization maintain consistent standards for branding and digital content use.

DAM creates multiple formats of digital assets automatically when an image or video is checked into Content Server and lists the formats under one content ID. This ensures that the asset, such as a corporate logo or promotional video, maintains a standard size and quality in the multiple formats required by your organization, while providing the content management and workflow features of Content Server. For example, one person can download images of the logo for use on a web-site, and another can download and bundle images of the same logo for use in office presentations or print collateral, all from a single digital asset checked into the repository.

Digital assets are valuable electronic images and videos to be made available within your organization in multiple output formats, called a *rendition*. The quantity and type of renditions are defined by the system administrator in rendition sets. A user selects a rendition set used to create renditions of a digital asset at the time the asset is checked into the repository.

For DAM to work, Inbound Refinery must be installed and properly configured to work with the content server on which DAM is installed.

2.4.2.1 Image Manager

Image Manager enables users to quickly find, group, and download images of various sizes and resolutions. For example, an organization's logo may need to be available in a variety of sizes for advertisements, web pages, and presentation. At check-in, the image is automatically converted into the defined formats and sizes. Users can then search for the image using standard metadata, group renditions into a content basket, and download a single compressed file of the image renditions they need.

2.4.2.1.1 Renditions Image Manager installs six pre-defined rendition sets for use with Image Alchemy:

- DefaultGraphicSet: Required Default Rendition Set
- CorporateImage: Common Corporate Format Requirements
- ProductCatalog: CMYK HiRes and Proof Images for Print
- DigitalPhoto: Process Digital Photos
- WebImages: Renditions for web applications and web images
- Print: Renditions for productivity and layout applications

2.4.2.2 Video Manager

Video Manager enables users to quickly find, group, and download videos of various sizes and resolutions. For example, a company training video may need to be available in a variety of sizes for streaming on an intranet, presenting to an audience, or copying to tape. At check-in, the video is automatically converted into the defined formats and sizes. Users can then search for the video using standard metadata, group renditions

into a content basket, and download a single compressed file of the video renditions they need. FlipFactory, a third-party conversion application, is required to convert video files to multiple formats.

2.5 Web Content Management

WebCenter Content provides several tools that can be used to manage content on web sites, including how that content is deployed and stored.

This section discusses the following topics:

- [Section 2.5.1, "Site Studio"](#)
- [Section 2.5.2, "Site Studio for External Applications"](#)
- [Section 2.5.3, "Content Portlet Suite"](#)

2.5.1 Site Studio

Site Studio is a web development application suite that offers a comprehensive approach to designing, building, and maintaining enterprise-scale web sites. Everything associated with the web site, including site assets (such as templates, graphics, CSS files, and so on) and all site content, is stored and managed in the content server. Site Studio enables organizations to maintain accurate, timely, and current web content with consistent branding and presentation across all corporate sites.

Some of the website creation and contribution features include:

- In-context contribution and updates directly from the website
- Hierarchical website structure and navigation
- Template-based pages comprised of multiple regions
- Separation of content and presentation
- Separation of navigational structure and its presentation
- Secure, regional-level content authoring and editing
- WYSIWYG XML-based contribution forms
- Reusable content and XML-based fragments
- Single-source content management
- Multi-site management

Organizations may also prefer to build websites using Site Studio if they would like to distribute website development to multiple site designers, yet still have a centralized team of developers maintain control over the brand and look-and-feel. Site Studio gives developers the ability to create customizable libraries to provide site designers with reusable drag-and-drop layouts, fragments, navigation, and code that integrates with back-end applications for developing their own unique websites.

With Site Studio's customizable library as well as its built-in framework for designing websites, these site designers can create robust and well-architected sites with little or no knowledge of HTML or other programming languages.

Oracle Site Studio is documented in the following manuals:

- *Oracle WebCenter User's Guide for Site Studio Contributor*
- *Oracle WebCenter User's Guide for Site Studio Designer*

- *Oracle WebCenter User's Guide for Site Studio Publisher*
- *Oracle WebCenter Administrator and Manager's Guide for Site Studio*
- *Oracle WebCenter Technical Reference Guide for Site Studio*
- *Oracle WebCenter Developer's Guide for Site Studio for External Applications*

2.5.2 Site Studio for External Applications

Site Studio for External Applications is a powerful, flexible web development tool that offers a comprehensive approach to designing, building, and maintaining enterprise-scale Web sites in an Application Server environment.

Web site development and template creation are performed in the JDeveloper environment. Site assets such as files and graphics are stored and managed in the Content Server. Page templates, region templates, and subtemplates (which are typically JSP/JSPX pages) are located in the WAR file of the web application associated with a JDeveloper project.

Site Studio for External Applications dramatically improves productivity and allows organizations to maintain accurate, timely, and current web content with consistent branding and presentation across all corporate sites. With Site Studio for External Applications, you can centralize control of site architecture and presentation, while distributing content development and ongoing maintenance to business units or other teams. Site Studio for External Applications can also be integrated with third party applications servers.

2.5.3 Content Portlet Suite

Oracle provides the ability to manage the content creation and distribution process through the use of portlets. These portlets can be enabled for different users based upon the user's roles and permissions within the organization. Depending on the permission level, the user may be allowed to browse or search content, contribute a new content item and view the progress of their content through workflow.

Integrating your portal and Content Server with Content Portlet Suite provides an easier way to keep the portal up to date-resulting in greater utilization, lower maintenance costs and a larger return on your portal investment. Content Portlet Suite provides access to content stored in the repository, enabling users to update, search, and view portal content in a way that is efficient and easy to use.

Content Portlet Suite offers a number of pre-built reference portlets for the WebCenter Portal, IBM WebSphere, Plumtree, and Sun ONE portal servers. It uses the Remote Intradoc Client (RIDC) API to communicate with Oracle Content Server.

Portlet actions are mapped to a custom MVC framework that uses the RIDC API to perform tasks. This architecture enables the portlets to call RIDC methods and execute the requested content server service.

Each suite provides eight functional reference portlets:

- Guest Library
- Library
- Guest Search
- Saved Search
- Search
- Contribution

- Workflow Queue
- Metadata Administration

These can be used immediately or as examples of how to implement a portlet.

See the *Oracle WebCenter Deployment Guide for Content Portlet Suite* for details.

2.6 Retention Management with Adapters

An *adapter* provides a bridge between Oracle WebCenter Content: Records, which contains the content management policies and an adapter server's content vault (which stores additional content). Corporations can then manage records, retention policies, and legal holds across multiple systems from a single location.

An adapter sends information back to Records server so it can maintain an up-to-date catalog of the enterprise's important content. By doing so, companies can apply their records and retention policies to more content, more consistently, with less administrative effort and less disruption for users. These same benefits apply to litigation searches and holds. The Records Adapter for Content Server obtains these policies from the server and applies them to the content items stored in the vault.

Multiple adapters can be used with Oracle WebCenter Content: Records to manage an enterprise's content needs. See [Chapter 4, "Oracle WebCenter Content: Records"](#) for details about Records management.

- [Section 2.6.1, "Architecture"](#)
- [Section 2.6.2, "Basic Operation"](#)

2.6.1 Architecture

The major components involved in a typical Content Server Adapter installation include:

- **Records:** Enables organizations to manage their content and retention policies, disposition processes and litigation or audit holds in a central repository. These policies, dispositions, and holds can then be applied to external repository content through the UCM Adapter.
- **Content Server:** Stores and manages content in a repository.
- **Content Server Adapter:** Communicates between the Records system and the Content Server Adapter's content vault. The Content Server Adapter provides common retention functionality as follows:
 - Identifying the content in the repository that is of interest to the Records system.
 - Performing searches and declaring the applicable content items to the Records system.
 - Performing disposition actions on the existing content items when their retention periods end.
 - Establishing and removing holds and freezes on the content items, as necessary.

2.6.2 Basic Operation

The Records system manages records and retention policies, disposition processes, and litigation holds or freezes in a central repository. Those policies, dispositions, and

holds can be applied to content stored in multiple repositories by using adapters. The repositories may be any server or application that holds content whose retention is to be controlled.

The Content Server Adapter's content vault holds content that must be preserved for a retention period, specified in a corporate retention schedule, and then destroyed according to a corporate disposition process. The records are preserved in place because the adapter ensures that the record remains unalterable during the retention period. Upon request, the adapter server's content vault can purge the content at the end of the retention period.

The adapter server's vault may also hold content that does not need to be retained. When retention of this content is no longer necessary, it can be disposed of according to the disposition processes stored within the Records system.

There is an obligation to ensure that any material that is subject to a litigation or audit hold (freeze) is not deleted, either by a user or as part of a disposition process. The Content Server Adapter enables the Records system to ensure deletions do not happen.

Note: Content items that are non-records and are not subject to a litigation or audit hold are not transferred to the Records system. Instead, these documents remain in the Content Server Adapter's content vault and only their metadata is stored in the Records system.

The Content Server Adapter is the communications intermediary between the Records system and the adapter's repository. Content is stored in and remains in the adapter's content vault while the Records system simultaneously enforces corporate retention policies, disposition processes, and legal holds on the stored content.

Oracle WebCenter Content: Imaging

Oracle WebCenter Content: Imaging is available as part of the Oracle WebCenter Content suite of tools. It provides organizations with a scalable solution upon which to develop process-oriented imaging applications and image-enablement solutions.

Oracle WebCenter Imaging is also available as a separate product. This document discusses the functionality of Imaging as part of WebCenter Content.

This chapter covers the following topics:

- [Section 3.1, "Imaging Overview"](#)
- [Section 3.2, "Oracle WebCenter Imaging and Content Server"](#)
- [Section 3.3, "Oracle WebCenter Imaging Integration with Oracle Technologies"](#)

Imaging is documented in the following manuals:

- *Oracle WebCenter Content Developer's Guide for Imaging*
- *Oracle WebCenter Content Administrator's Guide for Imaging*
- *Oracle WebCenter Content User's Guide for Imaging*

Also see the *Oracle WebCenter Content Installation Guide* and the *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle Enterprise Content Management Suite* for additional information.

3.1 Imaging Overview

Oracle WebCenter Imaging combines multiple Oracle technologies, providing a streamlined document imaging platform on which numerous business solutions can be built by leveraging image enablement, application extension, and long term archiving. Imaging adds a metadata-focused document management model, a powerful viewer tool, image annotation capabilities, high volume ingestion and storage of data, and advanced searching tools to these solutions.

Oracle Document Capture and Oracle Distributed Document Capture can be added to automate image collection and categorization. Imaging leverages the Content Server as the document repository which allows the use of the Records software to manage the life cycles and dispositions of Imaging content.

An easily configured integration with tools such as Oracle BPM or BPEL injects Imaging document content directly into automated core business processes to reduce manual steps and increase efficiency.

Organizations can quickly extend these solutions by integrating with Oracle enterprise applications such as Oracle E-Business Suite and PeopleSoft Enterprise. Customers thus benefit by having a single source for all transaction-based content.

Oracle WebCenter Imaging manages documents through the entire document life cycle, from image capture to archiving. A document is uploaded into Imaging either singly by individual users or in bulk via a background agent. After uploading, a document becomes part of an *application*, which is a type of container for documents that defines metadata, storage information, and BPEL process configuration for all documents within it.

Applications are defined by the system administrator based on a specific business need. For example, an Invoicing application may track invoice number, date sent, date due, status, and any other metadata required by an accounting department.

Depending on how your repository is configured, uploaded documents can be stored within an Oracle database, on a file system, or in storage-specific hardware for retrieval. Security is applied to an Imaging document based on its application, ensuring access only by authorized users. In addition, Oracle WebCenter Imaging can be configured to initiate a business process instance within Oracle's BPEL server.

Predefined searches are created to find documents based on document metadata and full-text indexes. With the proper permissions, users can:

- View documents in a standard web-browser
- Print, download, or e-mail the document to others
- Annotate documents
- Upload documents and initiate a BPEL process if one is defined in the application
- Delete, copy, or move documents

3.2 Oracle WebCenter Imaging and Content Server

Oracle WebCenter Imaging resides within WebLogic Server, connected to a database. Imaging events are routed through WebLogic Server using Java Messaging Service (JMS) to communicate with its background agents.

Custom applications can interact with Imaging through its set of application programming interfaces (APIs). Custom applications wishing to integrate with an Imaging system can communicate with Imaging through the Imaging public API. The API is available in two forms:

- through standard web services generated with the Java API for XML Web Services (JAX-WS)
- through Imaging Java APIs, a set of portable Java class files

Imaging provides architectural features designed to help business managers simplify the process of building imaging solutions. Features such as applications, searches, and inputs provide convenient constructs that can be used to organize data, apply security to user groups, and facilitate the movement of those constructs between systems such as a development and production instance.

Imaging agents operate in the background to perform tasks not associated with immediate requests from users. The Input Agent facilitates high volume ingestion of document content and the Workflow Agent handles any interaction with the BPEL server as required by document activity."

Standard Java Management J2EE Beans (or MBeans) are used to configure the operation of Imaging's business logic as well as its agents. The values of these MBean configuration objects can be manipulated through Oracle Enterprise Manager and WebLogic Scripting Tool, allowing you to choose the best system management tool for your needs.

3.3 Oracle WebCenter Imaging Integration with Oracle Technologies

Imaging integrates with several other key Oracle Technologies:

- It works with Oracle application adapters to allow document processing of workflow tasks and allows related images to be easily invoked, viewed and acted on. Two adapters are available for use with Imaging: the Oracle E-Business Suite Adapter, described in [Section 6.2, "Oracle E-Business Suite Adapter for Content Server and Imaging,"](#) and Oracle PeopleSoft Adapter, described in [Section 6.4, "Oracle PeopleSoft Adapter for Content Server and Imaging."](#)
- It integrates with **Oracle Document Capture** and **Oracle Distributed Document Capture** to allow you to convert physical documents into an electronic format to be uploaded to Oracle WebCenter Imaging.
- It leverages **Content Server** as a repository for document storage and retrieval. Content Server supports both out-of-the-box content management services and open, customizable integration options that can manage a broad range of enterprise content such as emails, documents, and images from different content sources. Content Server supports Oracle and SQL Server databases to allow indexing and storage of content in a variety of ways. Depending on the database and configuration, documents and metadata can be stored within the database, on a file system, or a combination of both. Flexible search options allow you to configure the repository to support either metadata searching or full-text searching as configured within the Imaging application to provide the most applicable search capabilities.
- It is designed to leverage many of the features of **Oracle WebLogic Server** including its standard J2EE architecture, integrations with Oracle security components, scalability including clustering, system management tools like Enterprise Manager, WebLogic Scripting Tools, and Fusion Middleware Control.
- A connection to a workflow server is used to initiate a workflow process when documents are uploaded to Oracle WebCenter Imaging, allowing for business process integration across the enterprise using key technologies such as Oracle BPEL Process Manager or Oracle Business Process Management (Oracle BPM).

Oracle WebCenter Content: Records

Oracle WebCenter Content: Records (the Records system) effectively manages content items on a retention schedule, which determines the life cycle of that content item.

The focus of *records management* tends to be the preservation of content for historical, legal, or archival purposes while also performing retention management functions. The focus of *retention management* tends to be the scheduled elimination of content in which the costs of retaining content outweighs the value of keeping it.

The Records system combines both record and retention management into one software system. You can use Oracle WebCenter Content: Records to track and to preserve content as needed, or to dispose of content when it is no longer required.

This section covers the following topics:

- [Section 4.1, "Records Overview"](#)
- [Section 4.2, "The Retention Process"](#)

For details about the use of an adapter to integrate with Content Server, see [Section 2.6, "Retention Management with Adapters."](#)

Oracle WebCenter Content: Records is documented in the following manuals:

- *Oracle WebCenter Content Administrator's Guide for Records*
- *Oracle WebCenter Content Setup Guide for Records*
- *Oracle WebCenter Content User's Guide for Records*

Also see the *Oracle WebCenter Content Installation Guide* for additional information.

4.1 Records Overview

You can choose which Records options are installed at your site. By choosing specific options, you determine which components will be enabled and ready for use. The following configurations can be used:

- **Minimal:** enables the minimal amount of functionality and excludes some disposition actions and most of the product features.
- **Typical:** enables all disposition actions and all features except for DoD Configuration, Classified Topics, FOIA/PA tracking (Freedom of Information Act/Privacy Act), and Email. This option does enable Physical Content Manager (PCM).
- **DoD Baseline:** enables the features from a Typical installation with the addition of DoD Configuration and Email.
- **DoD Classified:** enables all features except for FOIA/PA.

- **Custom:** enables the ability to choose a variety of features. Note that some disposition actions are dependent on other actions. If you select an action, dependent actions are also automatically selected.

Depending on the retention needs at your site, you will choose a particular type of configuration.

Different reasons may exist for why organizations need to retain content. Many organizations are subject to regulations that require the retention of information for a specified period, such as compliance with Sarbanes-Oxley regulations, government regulations such as DoD 5015.2. An organization may have a litigation-related need for effective and efficient retention management. Or an organization may wish to provide a uniform infrastructure for retrieving and sharing content across an organization. Oracle WebCenter Content: Records can be configured and customized to fit any of these business needs.

In addition to internal content (electronic items stored within Content Server), the Records system can manage external content. An *external* retained content item can be in a variety of formats, both physical or electronic. If the source file is not specifically stored in Content Server, then it is considered external. The software can manage the disposition schedule, search metadata associated with the external file, and manage an electronic rendition of an external file. An electronic rendition can either be checked in as a primary file of an external item, or be filed as a separate file, and then linked to the external file metadata.

The Records system can be used to manage classified content which requires protection against unauthorized disclosure (for example, because it contains information sensitive to the national security of the United States or because it is essential for a corporation's operation). Options can be chosen during configuration to insure that the system complies with the DoD 5015.2 standard (including Chapter 4). The software has been certified by the Joint Interoperability Test Command (JITC) to comply with that standard.

4.2 The Retention Process

The following steps outline the basic workflow of retained content:

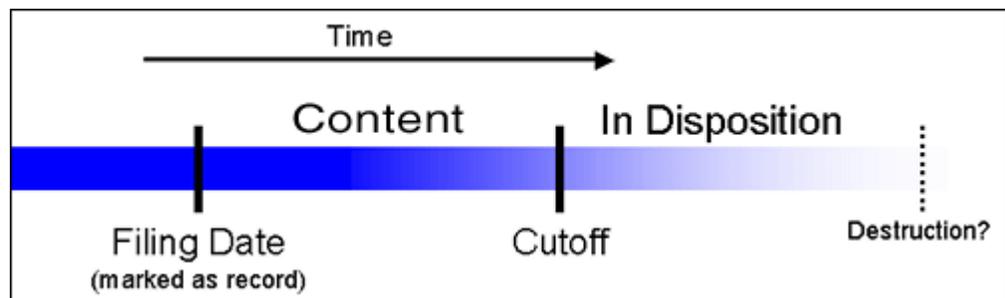
1. The retention schedule and any required components, such as triggers, periods, classifications, and custom security or metadata fields are created.
2. Items are filed into the retention schedule by users. The filed items assume the disposition schedules of their assigned category.
3. Disposition rules are processed in accordance with the defined disposition schedules, which usually have a retention period. The processing is activated by either a system-derived trigger or custom trigger. The trigger could affect one or more items simultaneously.
4. Whenever a disposition event is due for action (as activated by a trigger), an e-mail notification is sent to the person responsible for processing the events. The same is true for review. The pending events and reviews are displayed in the pages accessed from the Retention Assignments links within the user interface.
5. The Records Administrator or privileged user performs the review process. This is a manual process.
6. The Records Administrator processes the disposition actions in the pending events pages. This is a manual process.

Many disposition schedules are **time-based** according to a predictable schedule. For example, content is often filed then destroyed after a certain number of years. The system tracks when the affected content is due for action. Notification e-mail is sent, and the content is routed to the Retention Assignments area.

The person responsible for the pending events and reviews then processes the content accordingly. Available menu actions are context-sensitive according to the state of the item. For example, a retention folder due for its final disposition step of destruction would have the Destroy commands available, but not the Archive commands.

In contrast, **time-event** and **event-based** dispositions must be triggered with a non-system-derived trigger (a trigger that was defined for a particular scenario). For example, when a pending legal case starts litigation, the Records Administrator must enable the custom trigger and set its activation date because the start date information is external. Custom triggers enable you to define event and time-event based disposition actions based on the occurrence of a particular event.

The following illustration shows a typical life cycle of a record that is retained then processed (disposed).



Oracle Information Rights Management

Oracle Information Rights Management (Oracle IRM) provides an information security solution that uses encryption to "seal" documents and emails. Access to the decryption keys are controlled so only authorized end users can access and use sealed documents and emails, regardless of where they are stored or used.

This chapter discusses the following topics:

- [Section 5.1, "IRM Overview"](#)
- [Section 5.2, "Rights and Synchronization"](#)

IRM is documented in the following manuals:

- *Oracle Fusion Middleware Developer's Guide for Oracle IRM Server*
- *Oracle Fusion Middleware Administrator's Guide for Oracle IRM Server*
- *Oracle Fusion Middleware User's Guide for Oracle IRM Desktop*

5.1 IRM Overview

Oracle IRM uses encryption to seal selected documents and emails. Authorized users create and use sealed content transparently within existing desktop applications, such as Microsoft Office, Adobe Reader and Lotus Notes, without requiring any understanding or management of encryption keys or passwords.

To create and use sealed documents and emails within existing desktop applications, users must install the Oracle IRM Desktop client software. The Desktop software authenticates users, transparently requesting rights from the Oracle IRM server. It supports current and previous versions of all standard desktop document and email applications, and continues to protect and track sealed documents and emails while they are in use within those applications.

Documents or emails can be automatically or manually sealed at any stage in their lifecycle with tools that are integrated into the Windows desktop, authoring applications, email clients, and content management and collaborative repositories. Sealed documents are also protected and tracked when stored on desktops beyond the originating organization's firewall. Users sent a sealed document can open the document, initiating a connection to the license server. Login details may be required, after which the sealed document can be used to the extent that rights allow.

5.2 Rights and Synchronization

Rights control what can and cannot be done with sealed documents. The ability to work with a particular sealed document depends on the rights defined in the contexts

to which the document is sealed. A context is a type or grouping of sealed content. For example, different contexts may be defined for confidential sales matters, for proprietary research matters, or for confidential partner communications, and so on. Different users have different rights in different contexts.

Rights are defined and assigned centrally by administrators, who group combinations of rights and end user identities into one or more contexts. Authors control access to their documents by selecting the most appropriate predefined context at the time they seal it. The result is that authors do not make complex rights management decisions when they seal a new document.

Some rights effectively include others and some rights require others. Rights are stored on a server separately from sealed documents and emails, enabling them to be assigned, updated or unassigned at any time. Access to and use of a particular sealed document can change throughout its life. When the originator of a sealed document or email decides that the content is no longer valid, or when the originator decides to change who can use a sealed document or email, the rights can be revoked and the recipient may find that they can no longer read it.

User rights and audit records are automatically synchronized between Oracle IRM Desktop and the Oracle IRM Server. The local cache of rights is updated by synchronizing to connected license servers. This allows users to keep working with sealed documents even when disconnected from the network and unable to contact the license server. Cached rights typically allow users to keep using documents for several days before being required to contact the license server.

Oracle WebCenter Content Application Adapters

Oracle's Application Extension Framework (AXF) is a command-driven, web services integration between a business application such as Oracle E-Business Suite or Oracle PeopleSoft and a content management application such as Oracle WebCenter Content: Imaging or Content Server.

This chapter provides a summary of the application adapters provided with Oracle WebCenter Content. It has the following sections:

- [Section 6.1, "Application Extension Framework \(AXF\)"](#)
- [Section 6.2, "Oracle E-Business Suite Adapter for Content Server and Imaging"](#)
- [Section 6.3, "Oracle Siebel Adapter for Content Server"](#)
- [Section 6.4, "Oracle PeopleSoft Adapter for Content Server and Imaging"](#)

6.1 Application Extension Framework (AXF)

The open Java-based architecture of AXF allows integrators to configure and modify multiple business process solutions separately from the systems themselves, and to upgrade systems without affecting implemented solutions.

The following adapters can be configured:

- [Section 6.2, "Oracle E-Business Suite Adapter for Content Server and Imaging"](#)
- [Section 6.3, "Oracle Siebel Adapter for Content Server"](#)
- [Section 6.4, "Oracle PeopleSoft Adapter for Content Server and Imaging"](#)

6.2 Oracle E-Business Suite Adapter for Content Server and Imaging

The Oracle E-Business Suite Adapter for Oracle WebCenter Content provides integrations between Oracle E-Business Suite and the following WebCenter Content features:

- *Imaging*, allowing document processing workflow tasks and related images associated with Oracle E-Business Suite business processes to be easily invoked, viewed and acted on.
- *Content Server*, allowing documents related to the current Oracle E-Business Suite context (Forms or OAF page) to be easily accessed and attached via the Managed Attachments user interface.

See the *Oracle WebCenter Administrator's Guide for Application Adapters* for details.

6.3 Oracle Siebel Adapter for Content Server

The Siebel Adapter for Content Server provides integration between Siebel and Content Server, allowing documents related to the current Siebel context to be easily accessed and attached from within the Siebel user interface.

See the *Oracle WebCenter Administrator's Guide for Oracle's Siebel Adapter* and the *Oracle WebCenter User's Guide for Oracle's Siebel Adapter* for details.

6.4 Oracle PeopleSoft Adapter for Content Server and Imaging

The Oracle PeopleSoft Adapter for Oracle WebCenter Content provides integrations between PeopleSoft and the following WebCenter Content features:

- *Imaging*, allowing document processing workflow tasks and related images associated with PeopleSoft business processes to be easily invoked, viewed and acted on.
- *Content Server*, allowing documents related to the current PeopleSoft context to be easily accessed and attached via the Managed Attachments user interface.

See the *Oracle WebCenter Administrator's Guide for Application Adapters* and the *Oracle WebCenter User's Guide for Application Adapters* for details.

Index

A

adapter
 retention functions, 2-15
 role with Records, 2-15
 with Oracle WebCenter Content: Records, 2-14

adapters
 Oracle E-Business Suite Adapter, 6-1
 Oracle PeopleSoft Adapter, 6-2
 Oracle Seibel Adapter, 6-2

administrative changes, 2-2

application adapters, 2-8

B

Business logic, 3-2

C

Content Basket, 2-8

Content Categorizer, 2-6

Content Portlet Suite, 2-13

Content Portlet Suite documentation, 2-14

Content Server, 2-5
 Content Categorizer, 2-6
 Content Tracker, 2-7
 Dynamic Converter, 2-6
 PDF Watermark, 2-7

Content Server Adapter, 2-14

Content Server and retention, 2-14

Content Server documentation, 2-5

Content Tracker, 2-7

Conversion Server documentation, 2-9

D

DAM, 2-11

Desktop, 2-6

Desktop documentation, 2-6

digital asset management, 2-8

Digital Asset Manager, 2-11

disposition
 event-based, 4-3
 time-based, 4-3
 time-event, 4-3

Document Management, 2-4

documentation

Content Portlet Suite, 2-14

Content Server, 2-5

Conversion Server, 2-9

Desktop, 2-6

Dynamic Converter, 2-6

Imaging, 3-1

Oracle E-Business Suite Adapter, 6-1

Oracle PeopleSoft Adapter, 6-2

Oracle Seibel adapter, 6-2

PDF Watermark, 2-8

Records, 4-1

RIDC, 2-4

Site Studio, 2-12

WebCenter Content, 2-1

E

event dispositions, 4-3

I

Image Manager, 2-11

Imaging, 3-2
 web services, 3-2

Imaging Application, 3-2

Imaging documentation, 3-1

Inbound Refinery, 2-9

installation information, 2-2

Integration
 COM API, 2-3
 IdcCommand Utility, 2-3
 RIDC, 2-4

Integration options, 2-3

O

Oracle Conversion Server, 2-9

Oracle Information Rights Management
 documentation, 5-1

Oracle WebCenter Content
 adapters, 2-8
 digital asset management, 2-8
 document management, 2-4
 documentation, 2-1

Oracle WebCenter Content: Desktop, 2-6

Oracle WebCenter Content: Imaging

- documentation, 3-1
- Oracle WebCenter Content: Records
 - documentation, 4-1
- Oracle WebCenter Content:Desktop
 - documentation, 2-6
- overview
 - Information Rights Management, 5-1
 - Oracle WebCenter Content: Records, 4-1
 - WebLogic Server, 2-1

P

- PDF Converter, 2-10
- PDF Watermark, 2-7
- PDF Watermark documentation, 2-8

R

- Records
 - configurations, 4-1
 - overview, 4-1
- Records documentation, 4-1
- Remote Intradoc Client, 2-4
- Retention Management and WebCenter
 - Content, 2-14
- retention process, 4-2
- RIDC documentation, 2-4

S

- Site Studio, 2-12
- Site Studio documentation, 2-12
- Site Studio for External Applications, 2-13

T

- TIFF Converter, 2-10
- time dispositions, 4-3
- time-event dispositions, 4-3

V

- Video Manager, 2-11

W

- Web content management, 2-12
 - Site Studio, 2-12
- WebCenter Content documentation, 2-1
- WebLogic Server
 - administrative, 2-2
 - installation, 2-2
 - other changes, 2-2
 - overview, 2-1

X

- XML Converter, 2-10