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Preface

This guide provides concept and task information for administering applications for Content Server.

Audience

This guide is intended for people who are responsible for administering applications for Content Server. Administrators set up, maintain, and manage the content server users, content, and system configurations. Common tasks for an administrator include configuring the system to manage and index files, archiving and replicating information, working with content server security, adjusting system properties, reviewing log files, etc.

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Related Documents

Documentation for administrators and sub-administrators of the Content Server software includes the following:

- *Oracle Content Server Getting Started (PDF and HTML)*

This document provides an overview of the Oracle Content Server suite of products and general guidelines for their setup and implementation.
- *Oracle Content Server Administration Guide (PDF and HTML)*

This document discusses security tasks related to user administration, such as planning and implementing a security model, adding and deleting users, and implementing accounts. It discusses tasks that impact system configuration on an ongoing basis, such as managing revisions and indexing, configuring providers, and working with system properties.
- *Oracle Content Server Administration Tutorials (PDF and HTML)*

This document contains administration tutorials for people who need to administer (part of) a Oracle-based content management solution.
- *Getting Started with the Software Developer's Kit (SDK)*
- *Oracle Content Server Troubleshooting Guide (PDF and HTML)*

This document contains general information about troubleshooting a Content Server environment and how to diagnose issues, also provides more in-depth information about troubleshooting in specific areas.
- *Oracle Content Server Release Notes (hardcopy and PDF)*

The Content Server software is shipped with release notes, which list new and enhanced features of each new software release, and also provide special, up-to-the-minute considerations for installing and using the software. The release notes are important documents. Always make sure you read them before installing or updating Oracle software.

Note: The optional add-ons to Content Server generally have their own administration documentation, which is included as PDF files on the add-on distribution media, typically in a /documentation directory.

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
Forward slashes (/)	Forward slashes are used to separate the directory levels in a path to a UNIX server, directory, or file. Forward slashes are also used to separate parts of an Internet address. A forward slash will always be included at the end of a UNIX directory name and might or might not be included at the end of an Internet address.
Backward slashes (\)	Backward slashes are used to separate the levels in a path to a Windows server, directory, or file. A backward slash will always be included at the end of a Windows server, directory, or file path.
<i>DomainHome</i>	The variable used to refer to the user-specified directory where an Oracle UCM server is deployed to run on an Oracle WebLogic Server. DomainHome is a term used in Oracle WebLogic Server deployment, and it is provided here only because IntradocDir refers to it.
<i>IntradocDir</i>	<p>The variable used to refer to the root directory for actual configuration and data files specific to a Content Server instance deployed on the Oracle UCM domain on Oracle WebLogic Server. The files include startup files (intradoc.cfg and executables). This variable is configured for one type of instance: Content Server, Inbound Refinery or Universal Records Management.</p> <p>The specified directory must be an absolute path to the instance directory, and it must be unique to a specific server or node. For install that will be in a cluster, the instance directory must be in a network share accessible to all nodes in the cluster.</p> <p>The default location for the instance directory is specified as <i>DomainHome/ucm/short-product-id</i> where <i>short-product-id</i> can be:</p> <ul style="list-style-type: none"> ■ cs (Content Server) ■ ibr (Inbound Refinery) ■ urm (Universal Records management)

Introduction

This section provides an introduction to the information in this guide. It covers the following topics:

- ["About This Guide"](#) on page 1-1
- ["Understanding the Content Server System"](#) on page 1-2
- ["Administration Applications"](#) on page 1-3

1.1 About This Guide

This guide provides information about administration concepts and tasks for the following Content Server applications:

- **HTML Preview:** provides content contributors with instant feedback on how their content will display on the published web site. This enables the contributors to modify the original content (if they do not like the published results) before the content is actually checked in.
- **Repository Manager:** specifies how content is displayed or handled, such as creating customized content types, working with subscriptions, and managing revisions.
- **Metadata:** specifies how metadata is used in working with schemas, rules, and content profiles.
- **Workflows:** specifies how content is routed for review, approval, and release to the system.
- **PDF Watermark:** enables watermarks to be applied to PDF files generated by the component PDFConverter (static) and returned to the content server.
- **Folders and WebDAV:** provides a hierarchical folder interface to content in Content Server in the form of "virtual folders" (also called "hierarchical folders"). Virtual folders enable you to create a multi-level folder structure.
- **Content Folios:** 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.

1.2 What's New

This section provides a brief overview of changes to the functionality discussed in this book for this release of the Content Server.

- This guide combines information that was previously contained in the following Content Server version 10g documents:
 - *Managing Repository Content*
 - *Content Server Workflow Implementation Guide*
 - *Content Categorizer System Administration Guide*
 - *Content Tracker Administration Guide*
 - *PDF Watermark*
 - *Folders/WebDAV Administration Guide*
 - *Folios Administration Guide*
- Administration Applets: All Administration Applets in the user interface have been converted to Java Swing and are now accessible.
- Content Tracker: New preferences have been set to provide maximum efficiency in high volume production environments. In addition, event log file locking within and between Java Virtual Machines is now managed using object synchronization and parallel log files.
- Content Categorizer: Several enhancements have been made. Export conversion parameters are now available for user customization Dynamic metadata field length checks are now used so a server restart is not necessary. The Batch Categorizer executable is no longer on the Start menu but has been relocated to the `contentcategorizer` subdirectory in the Content Server instance.
- PDF Watermark: The installation now includes five variants of the Albany font set. In addition the iText Common Library is now distributed with Content Server in the iText Component.
- See the *Oracle Fusion Middleware System Administrator's Guide for Content Server* for a detailed description of changes to Content Server security for this release and for information about other changes to the product.

1.3 Understanding the Content Server System

This section covers these topics:

- ["Purpose of Content Server"](#) on page 1-2
- ["Users Types"](#) on page 1-2

1.3.1 Purpose of Content Server

Use Content Server for sharing, managing, and distributing business information using a web site as a low-cost access point.

Designed for the web, this software is considered the unrivaled solution for medium to large companies for building secure business libraries with check in/check out, revision control, and automated publishing in web-ready formats. Current information is available to authorized users anytime, anywhere. You can link almost any type of file such as letters, reports, engineering drawings, spreadsheets, manuals, sales literature, and more under one powerful system of knowledge distribution.

1.3.2 Users Types

Content Server is designed for two types of users and two types of administrators:

- **Consumers:** Users who just need to find, view, and print files.
- **Contributors:** Users who need to create and revise files.
- **Administrators:** Administrators who oversee an entire instance.
- **Subadministrators:** Administrators who oversee a subset of an instance.

In a typical system, the majority of the users are consumers. These users do not need a user name and password to access the content server system unless security is placed on the files. To safeguard the integrity of the files, the contributors need a user name and password to check files in and out of the system.

Typically, the majority of administrators are subadministrators. They administer portions of the software that correspond to the rights that the system administrator assigns to them.

1.4 Administration Applications

The system provides administration applications to configure and maintain the Content Server user access.

Note: Oracle recommends using Sun's JDK version 1.6 Java plug-in when opening any Java applets (such as a Content Server administration applet or the multiple-file upload applet) from a browser.

The Administration page provides access to administration applets and configuration tools page. To access this page, log in as an administrator or subadministrator, and click the **Administration** tray in the portal navigation bar. Then, click **Admin Applets**.

Figure 1–1 Admin Applets Menu



Many applications can be started as a stand-alone application at the server, as applets through a browser, or from the Apps menu in each of the tools.

1.4.1 Running Administration Applications as Applets

You can run several of the Content Server administration applications as applets from any browser with access to the content server. Applets are convenient for remote administration.

The Batch Loader, Component Wizard, System Properties, and Content Server Analyzer utilities cannot be run as applets; for security reasons, they must be run in stand-alone mode from the computer where the content server is installed. See ["Running Administration Applications in Stand-alone Mode"](#) on page 1-4.

Some functions that are available in the stand-alone version of an application are not available from the applet version. See the documentation for each application for more information.

To run an administration application as a Java applet within a Java-enabled browser:

1. Open a browser window.
2. Log in to the content server as an administrator.
3. Click the **Administration** tray link in the portal navigation bar.
4. Click the **Admin Applets** link.

1.4.2 Running Administration Applications in Stand-alone Mode

You can run all Content Server administration applications in stand-alone mode from the computer where the content server is installed. The method required to start these programs differs slightly between Windows and UNIX installations.

Running the stand-alone version of an application offers greater security than browser applets, and enables you to send passwords without having them captured or copied from the web or a network.

1.4.2.1 On Windows Systems

To run a stand-alone administration application on a Windows operating system:

1. Select the application from the Windows Start menu:
 - To run one of the configuration applications, select **Start, Programs, Content Server, instance, application**.
 - To run one of the administration Utilities, select **Start, Programs, Content Server, instance, Utilities, utility**.

For all applications except for Component Wizard and System Properties, a login screen is displayed. For Component Wizard and System Properties, the main screen of the application is displayed.

Tip: It may take several seconds for the login screen or the application screen to appear, and the screen may be hidden by other windows.

2. Enter the administrator login name and password.
3. Click **OK**.

The main screen of the application is displayed.

1.4.2.2 On UNIX Systems

To run a stand-alone administration application on a UNIX operating system:

1. Navigate to the *DomainHome*/ucm/cs/bin/ directory.
2. Executable applications are listed. Enter `./application_name`, where *application_name* is the name of one of the executable files. If an application is not listed, it can be entered as a parameter to the IntradocApp application, as in this example:

```
% ./IntradocApp Workflow
```

3. Press **Enter**.

For all applications except for Component Wizard and System Properties, a login screen is displayed. For Component Wizard and System Properties, the main screen of the application is displayed.

4. Enter the administrator login name and password.
5. Click **OK**.

The main screen of the application is displayed.

Managing Repository Content

This chapter covers the following topics about managing repository content:

- ["Creating Content Types"](#) on page 2-1
- ["Native Content Conversion"](#) on page 2-3
- ["Managing Content Fields"](#) on page 2-5
- ["Managing Content Revisions"](#) on page 2-10
- ["Subscribing Content to Users"](#) on page 2-18
- ["Managing Linked Content with Link Manager"](#) on page 2-22

2.1 Creating Content Types

This section covers these topics:

- ["About Content Types"](#) on page 2-1
- ["Creating a New Content Type"](#) on page 2-2
- ["Editing a Content Type"](#) on page 2-2
- ["Deleting a Content Type"](#) on page 2-2

2.1.1 About Content Types

Files are grouped in the content server in directories designated by *content types*.

- Content types become the names of the subdirectories in which documents are stored in the weblayout and vault directories.
- Content types can correspond to departments (such as ENG, MKTG, and HR), document types (such as MEMO, FORM, and SPREADSHEET), or any other model you wish to use.
- Several content types are defined in Content Server by default (Document, Binary, Digital Media, and so on), but these can be edited or deleted.
- Each content type is assigned an image, which helps users identify the content type on search result pages. Several images are provided with Content Server, or you can create and assign your own images.
- You should create a manageable number of content types, typically no more than 50. Too many content types increases the amount of effort required to maintain the system, and makes it difficult for contributors to assign the correct content types to their files.

- When configuring content types, consider using the same prefix in a content type when grouping similar information. For example, the prefix MEMO is used in the following content types: MEMO_INT, MEMO_EXT, MEMO_EXEC.

2.1.2 Working with Content Types

The following are typical tasks used when working with Content Types:

- [Creating a New Content Type](#)
- [Editing a Content Type](#)
- [Deleting a Content Type](#)

2.1.2.1 Creating a New Content Type

To create a new content type:

1. Select **Content Types** from the Options menu on the [Configuration Manager Application Page](#).
The [Content Types Screen](#) is displayed.
2. Click **Add**.
The [Add New/Edit Content Type Screen](#) is displayed.
3. Enter a **Name** and **Description**.
4. Select an image from the **GIF** list.
5. Click **OK**.

Note: Adding a new Content Type may require you to update your schema to see the metadata field or option list value. See "[About DCLs and Metadata Schemas](#)" on page 3-1 for details about schemas.

2.1.2.2 Editing a Content Type

To edit a content type:

1. Select **Content Types** from the Options menu on the [Configuration Manager Application Page](#).
The [Content Types Screen](#) is displayed.
2. Click **Edit**.
The [Add New/Edit Content Type Screen](#) is displayed.
3. Make changes, and click **OK**.

2.1.2.3 Deleting a Content Type

To delete a content type:

1. Make sure that no content items are assigned the content type you want to delete. (You cannot delete a content type if content still exists with that type.)
2. In the [Content Types Screen](#), select the content type to delete.
3. Click **Delete**.
A confirmation screen is displayed.
4. Click **Yes**.

2.2 Native Content Conversion

Note: If Content Server is not configured to work with an Inbound Refinery instance, you do not need to specify how to convert native files. They will all be passed through to the web site in their native format.

This section covers these topics:

- ["About Native File Conversion"](#) on page 2-3
- ["Identifying MIME Types"](#) on page 2-3
- ["Native Applications and Content Conversions"](#) on page 2-4
- ["Associating File Types with Conversion Programs"](#) on page 2-4

2.2.1 About Native File Conversion

When Content Server is configured as a provider for an Inbound Refinery instance, Content Server must be told what file formats to pass to the refinery for conversion, based on the file extension. This can be done in two ways:

- using the File Format Wizard, accessed from the Refinery Administration folder in the Administration tray
- using the File Formats option of the Configuration Manager applet to map file extensions (.doc, .txt, and so on) to file formats then mapping file formats to the conversion option on the refinery.

The second option provides more flexibility in mapping different file extensions to different conversion options.

After the job is passed from Content Server to Inbound Refinery, the refinery configuration determines how the native file is converted and returned to Content Server.

File formats are automatically configured during installation; however, you can add or change them as necessary.

See the *Oracle Fusion Middleware Administrator's Guide for Conversion* for more details about conversions.

In addition to using the Configuration Manager to handle file conversions, you can use the File Formats Wizard. To access that functionality, click **Administration** then **Refinery Administration** from the Main menu.

2.2.2 Identifying MIME Types

It is recommended that you name new file formats by the MIME (Multipurpose Internet Mail Extensions) type corresponding to the file extension (for example, the format mapped to the doc file extension would be application/msword).

When a content item is checked in to Content Server, the content item's format is assigned according to the format mapped to the file extension of the native file. If the native file is not converted, Content Server includes this format when delivering the content item to clients. Using the MIME type for the format assists the client in determining what type of data the file is, what helper applications should be used, and so on.

You can identify the MIME type by checking the list of registered MIME types at <http://www.iana.org/assignments/media-types/index.html>.

2.2.3 Native Applications and Content Conversions

To ensure that conversion programs operate correctly, perform the following setup steps for the native applications you are using to convert content:

Native Application	Requirements
MS Word	Verify that the native application is installed if needed by Inbound Refinery for the conversion.
MS Project	
Lotus Freelance	Associate the file type to a conversion process on the File Formats tab.
MS Excel	For Word and PowerPoint applications, use the Native Options tab on the Local Inbound Refinery Configuration screen to specify whether to process links.
Lotus 123	
Corel WordPerfect	
MS PowerPoint	
Lotus WordPro	
MS Visio	
iGrafx Designer	
MS Publisher	Verify that the native application is installed.
FrameMaker*	Configure the file path in Inbound Refinery.
PhotoShop	Associate the file type to a conversion process on the File Formats tab.
PageMaker	
Other	Verify that the native application is installed (if required). Install the custom conversion program in Inbound Refinery. Configure the file path in Inbound Refinery. Associate the file type to a conversion process on the File Formats tab.

To check in FrameMaker books, use the Upload Multiple Files option, which you must enable in System Properties.

2.2.4 Associating File Types with Conversion Programs

To associate file types with conversion programs:

1. In the File Formats pane of the [File Formats Screen](#), click **Add**.
The [Add New/Edit File Format Screen](#) is displayed.
2. Enter information to associate a format name with a conversion program. Note the following conversion selections:
 - **Passthru:** Documents with extensions mapped to PASSTHRU are not converted, but are displayed on the web site in their native file format (requires native application on client machine).
 - **Legacy Custom:** Mapping an extension to CUSTOM executes a conversion program not included in the set of standard conversions. This option is not supported in this release.
3. Click **OK**.

4. In the File Extensions pane of the [File Formats Screen](#) screen, click **Add**.
The [Add/Edit File Extension Screen](#) is displayed.
5. Enter a new extension, and map it to a format name. Note the following field descriptions:
 - **Extension:** A file with this extension is converted with the conversion program specified by the Map to Format field.
 - **Map to Format:** This list displays the available formats that have specified conversions (defined in the Document Formats pane). Selecting a format directly relates all files with that extension to a specific conversion program.
6. Click OK.

2.3 Managing Content Fields

You can create two types of custom fields: metadata fields, which are indexed and searchable and Application Fields, which are used to customize Content Server forms.

This section covers these topics:

- ["About Custom Fields"](#) on page 2-5
- ["About Application Fields"](#) on page 2-5
- ["About Metadata Fields"](#) on page 2-6
- ["Adding a Metadata Field"](#) on page 2-8
- ["Editing a Metadata Field"](#) on page 2-8
- ["Adding or Editing an Application Field"](#) on page 2-9
- ["Defining an Option List"](#) on page 2-9
- ["Updating the Database"](#) on page 2-9
- ["Rebuilding the Search Index"](#) on page 2-9

2.3.1 About Custom Fields

You can create two types of custom fields for your content server environment:

- Application fields, which are not indexed nor searchable but used to customize Content Server forms and screens. See ["About Application Fields"](#) on page 2-5
- Metadata fields, which are indexed and searchable. See ["About Metadata Fields"](#) on page 2-6

2.3.1.1 About Application Fields

Application fields are custom fields which you can create to use in custom components, HCSP files and HCSF files. Application fields allow you to use Content Server features, such as dependent choice lists, on forms. By default, these fields do not appear on the standard check in and search forms, but are used by custom templates.

Application fields have no stored value and are not indexed. They can be used as placeholders and in conjunction with schema views in order to enable dependent choice lists without creating an associated metadata field. See ["Using Schemas to Customize Metadata"](#) on page 3-1 for details about schemas.

Note: Application fields can be displayed on the standard check in and search forms if set to do so in a content profile using the [Add Rule Field Screen](#).

2.3.1.2 About Metadata Fields

For each content item, the system maintains a set of information about the content, or *metadata*. Metadata is similar to a card in a library's card catalog, while the actual files are similar to library books. As with the card catalog, metadata consists of information about a file (title, reference number, author, subject, publishing date, book location, and so forth).

When you perform a metadata search, only the metadata is searched, compared to a *full-text search*, which scans the entire content of the files.

Several standard metadata fields are predefined in the content server, and cannot be changed or deleted. In addition to these predefined fields, you can create new fields to increase functionality and to accommodate a site's design requirements. It is important to create only the required amount of additional metadata fields that are necessary to help locate a file.

As a general rule, set up metadata with the Configuration Manager application, and work with metadata for a specific revision with the Repository Manager application. See "[Managing Content Revisions](#)" on page 2-10 for information about:

- [Viewing Content Metadata](#)
- [Updating Content Metadata](#)

2.3.1.2.1 Predefined Metadata Fields The following are predefined standard fields that cannot be edited or deleted:

Field Caption	Entry Method	Required?	Definition
Content ID	Text Entry or Automatic Generation	Y	<p>The unique identifier for each content item.</p> <ul style="list-style-type: none"> ■ Duplicate names are not allowed. ■ Maximum field length is 30 characters. ■ The following cannot be used: spaces, tabs, linefeeds, carriage returns, and ; ^ ? : @ & + " # % < * ~ [] / \. Note that complications can occur when using non-ASCII characters. ■ The Content ID can be automatically generated by the content server. See the General Options tab of the System Properties Utility. <p>Note: If you are using an Oracle or DB2 database, all Content IDs are converted to uppercase letters automatically.</p>
Type	Option List	Y	<p>An identifier used to group content.</p> <ul style="list-style-type: none"> ■ Types become subdirectories in the <i>weblayout</i> directory. See "Creating Content Types" on page 2-1. ■ Maximum field length is 30 characters. ■ The following cannot be used: spaces, tabs, linefeeds, carriage returns, and ; ^ ? : @ & + " # % < * ~ . Note that complications can occur when using non-ASCII characters.

Field Caption	Entry Method	Required?	Definition
Title	Text Entry	Y	A descriptive title for the content item. <ul style="list-style-type: none"> Maximum field length is 80 characters.
Author	Option List or Text Entry	Y	The user who checked in the content item.
Security Group	Option List	Y	The security group for which users must have permission to access the content item. <ul style="list-style-type: none"> Duplicate names are not allowed. Maximum field length is 30 characters. The following cannot be used: spaces, tabs, linefeeds, carriage returns, and ; ^ ? : @ & + " # % < * ~ [] / \. Note that complications can occur when using non-ASCII characters.
Account	Option List or Text Entry	N	The account for which users must have permission to access the content item. This field is available only if accounts are enabled.
Primary File	Text Entry or Browse to File	Y	The complete path to the native file being checked in. Maximum file name length is 80 characters, including the directory path and file extension. Maximum file extension length is eight characters. Note: Folders modifies this maximum file name length on installation to 255 characters.
Alternate File	Text Entry or Browse to File	N	The pathname to another web-viewable file format of the native document, or one that can be converted to a web-viewable format. For example, if you are checking in a FrameMaker or Quark document that has several files that make up that document, you would check in a zipped file as the native format (or Primary File) and a Postscript, PDF, or viewable file as its Alternate File. You cannot view the zipped file on the web, but the Inbound Refinery will convert the Postscript file to its web-viewable format, PDF. Maximum file name length is 80 characters and the file name extension cannot exceed eight characters.
Revision	Automatic Generation or Text Entry	Y	A label (such as 1, 2, 3,... or A, B, C,...) that represents the number of times the content item has gone through its life cycle (the number of revisions). The Revision label can be customized to meet your revision scheme.
Comments (optional)	User Text Entry	N	A field for additional information about the file. Maximum field length is 255. This field is considered a custom field, so it can be deleted.
Release Date	Automatic Generation or Text Entry	Y	The date the file is to be released to Content Server so that it is available for searching and viewing. The Release Date defaults to the date and time the file is checked in.
Expiration Date	Text Entry	N	The date the file will no longer be available for searching or viewing in Content Server. All revisions of the content item will expire when the current revision expires. Upon expiration, revisions are not deleted, but they can be accessed only from the Repository Manager by an administrator, unless <i>Notification of Expiration</i> is in use.

2.3.2 Managing Custom Fields

The tasks involved in managing custom metadata fields and application fields are similar. This section describes the following tasks:

Keep in mind that changes to custom metadata fields may affect the database (where information about metadata fields is stored) or the search index (where the metadata values are stored). Changes to application fields do not affect the database or the index.

- [Adding a Metadata Field](#)
- [Editing a Metadata Field](#)
- [Adding or Editing an Application Field](#)
- [Defining an Option List](#)
- [Updating the Database](#)
- [Rebuilding the Search Index](#)

Note: When you add a custom metadata field, the system automatically prefixes the name with an 'x' to ensure that it is unique and does not conflict with any reserved names. Similarly, when you define a custom user information (metadata) field, the system automatically prefixes the name with a 'u' to ensure that it is also unique and does not conflict with any reserved names. For more information about adding custom user information fields, see the *Oracle Fusion Middleware System Administrator's Guide for Content Server*.

2.3.2.1 Adding a Metadata Field

To add a new metadata field:

1. On the Information Fields tab of the Configuration Manager, click **Add**.
The [Add Metadata Field Name Screen](#) is displayed.
2. Enter a new field name. Duplicate names are not allowed. Maximum field length is 29 characters. The following are not acceptable: spaces, tabs, linefeeds, carriage returns and ; ^ ? : @ & + " # % < * ~ |
3. Click **OK**.
The [Add/Edit Metadata Field Screen](#) is displayed.
4. Configure the properties for the field, and click **OK**.
5. Click **OK**.
6. Update the database design and rebuild the search index if necessary.

2.3.2.2 Editing a Metadata Field

To edit a metadata field:

1. Double-click the field name, or select the field and click **Edit**.
The [Add/Edit Metadata Field Screen](#) is displayed.
2. Edit the field and any accompanying option lists or views.
3. Click **OK**.

2.3.2.3 Adding or Editing an Application Field

To add a new or edit an existing application field, perform these steps:

1. To add a new field, click **Add** on the Application Fields tab of the Configuration Manager. To edit an existing field, select it in the Field Info area and click **Edit**. The [Add/Edit Application Field Screen](#) is displayed.
2. Enter a new field name or select a previously entered field to edit. When entering a new name, duplicate names are not allowed. Maximum field length is 29 characters. The following are not acceptable: spaces, tabs, linefeeds, carriage returns and ; ^ ? : @ & + " # % < * ~ |
3. Click **OK**. The [Add/Edit Metadata Field Screen](#) is displayed.
4. Configure the properties for the field, and click **OK**.
5. Click **OK**.

2.3.2.4 Defining an Option List

To define an option list:

1. From the [Add/Edit Metadata Field Screen](#) or the [Add/Edit Application Field Screen](#), click the Enable Option List check box, then click **Configure**. The [Add/Edit Custom Info Field: Configure Option List](#) is displayed.
2. Choose the type of option list to use from the menu.
3. Choose how to access the values for the option list. You can create new values for the list, use values from a view, or use values in a tree hierarchy.
4. Determine the dependencies for the option list.
5. Click **OK** when done.

2.3.2.5 Updating the Database

If you have made changes that need to be saved to the database, the **Update Database Design** button becomes active.

To update the database:

1. On the [Add/Edit Metadata Field Screen](#), click **Update Database Design**. The [Update Database Design Screen](#) is displayed:
2. If deleting fields, select the ones to delete, then click **OK**. Added and edited fields are displayed and cannot be selected/deselected.
3. Click **OK**.

2.3.2.6 Rebuilding the Search Index

If you have made changes that require rebuilding of the search index, the **Rebuild Search Index** button becomes active.

To rebuild the search index:

1. Click **Rebuild Search Index**.
2. If a message asks you to update the database design before rebuilding the search index, click **Update Database Design** to save changes to the database before proceeding.
3. When the message *Rebuild initiated* is displayed, click **OK**.

Caution: Depending on the size of your search index and available system resources, the search index rebuild process can take several days. If rebuilding is necessary, rebuild at times of non-peak system usage.

2.4 Managing Content Revisions

This section discusses these topics:

- ["About Repository Manager"](#) on page 2-10
- ["Managing Content"](#) on page 2-12
- ["Managing Workflow Revisions"](#) on page 2-17
- ["Displaying Revisions with the Filter"](#) on page 2-11
- ["Changing the Default Sort Order of the Opening Query"](#) on page 2-11
- ["Adding a New Content Item"](#) on page 2-13
- ["Viewing Content Metadata"](#) on page 2-13
- ["Updating Content Metadata"](#) on page 2-13
- ["Reviewing Expired Content from Repository Manager"](#) on page 2-13
- ["Adding a New Revision"](#) on page 2-16
- ["Checking Out a Revision"](#) on page 2-16
- ["Undoing a Revision Checkout"](#) on page 2-16
- ["Resubmitting a Revision for Conversion"](#) on page 2-17
- ["Deleting a Revision"](#) on page 2-17
- ["Deleting All Revisions of a Content Item"](#) on page 2-17
- ["Approving a Revision in a Workflow"](#) on page 2-18
- ["Rejecting a Revision in a Workflow"](#) on page 2-18

2.4.1 About Repository Manager

The Repository Manager is an administration application used to manage content item revisions, subscriptions, and the Indexer. To access the Repository Manager as an applet, click the **Administration** tray link in the portal navigation bar. Click the **Admin Applets** link. Select **Repository Manager** from the applets displayed.

You can also run Repository Manager in standalone mode. See ["Running Administration Applications in Stand-alone Mode"](#) on page 1-4 for details.

You can use the Functions menu of the Repository Manager to perform a variety of administrative functions on specific revisions. For example, you can check in, check out, view and update metadata, approve and reject revisions in a workflow, and delete revisions.

Right-clicking a revision on the [Displaying Revisions with the Filter](#) displays a shortcut menu, which includes all of the options on the Functions menu.

2.4.2 Managing Revisions

This section covers these topics:

- ["About Displaying Revisions"](#) on page 2-11
- ["Displaying Revisions with the Filter"](#) on page 2-11
- ["Changing the Default Sort Order of the Opening Query"](#) on page 2-11

2.4.2.1 About Displaying Revisions

Administrators and subadministrators with RepMan rights can display a list of content item revisions in the Repository Manager. Administrators can display all content items; subadministrators with RepMan rights can display only content items for which they have Admin permission to the security group and account (if applicable). The revision list can be searched by specifying metadata fields and revision status as filter criteria.

Note: Similar content item display screens are used in several of the content server administration tools. For more specific information, refer to the documentation for the application you are using.

2.4.2.2 Displaying Revisions with the Filter

Follow these steps to filter the Content list by revision:

1. On the Content tab of the Repository Manager application, select the **Use Filter** check box, then click **Define Filter**.

The [Define Filter Screen](#) is displayed.

2. Select the check boxes for the filter criteria you want to use.
3. Specify values for all selected fields.
4. Click **OK**.

To filter revisions by Release Date:

1. On the Content tab of the Repository Manager application, select the **Release Date Since** check box.
2. Select one of the predefined date ranges.
3. Click **OK**.

To change the columns displayed on the Content tab:

1. On the Content tab of the Repository Manager application, click **Show Columns**.
The [Show Columns Screen](#) is displayed.
2. Select the columns you want displayed. (Any user-defined fields are displayed at the bottom of this list.)
3. Click **OK**.

2.4.2.3 Changing the Default Sort Order of the Opening Query

When the Repository Manager application is started, it runs a default query against the database that returns all content released the previous day. By default, the query sorts the results by the ContentID of the content items.

Ordering by ContentID is advantageous because the order is predictable when the Repository Manager has a long list of content items. However, if there are numerous documents, sorting by ContentID can cause the query to take a long time to return the

results. Therefore, you might prefer to have faster query results without the predictable order.

If sorting by ContentID is too time consuming, the ordering can be changed by disabling the DoDocNameOrder configuration setting. When the value is set to true, the default value, content items are sorted by ContentID. When it is set to false, content items are not sorted. Additionally, when you change the sort order to optimize the query, it is helpful to enable the JDBC Query Trace. This will log trace information to the console log where you can view the database queries.

To disable the DoDocNameOrder configuration setting:

1. In a text editor, open the **config.cfg** file:
IntradocDir/config/config.cfg
2. Add the following configuration setting:
DoDocNameOrder=false
3. Save and close the config.cfg file.
4. Restart Content Server.

To enable Query Tracing:

1. In Content Server, click the **System Audit Information** link in the Administration tray.
The System Audit Information page is displayed.
2. Scroll to the bottom of the **Edit Active Console Output Tracing** part.
3. Select **systemdatabase** from the Active Sections list.
The `systemdatabase` is added to the list of active sections.
4. Click **Update**.
5. Restart Content Server.

See the *Oracle Fusion Middleware System Administrator's Guide for Content Server* for more details about tracing reports and restarting the Content Server.

2.4.3 Managing Content

You can use the Functions menu of the Repository Manager to perform a variety of administrative functions on specific content revisions. For example, you can check in, check out, view and update metadata, approve and reject revisions in a workflow, and delete revisions.

Right-clicking a revision on the [Repository Manager: Content Tab Screen](#) displays a shortcut menu, which includes all of the options on the Functions menu.

These are typical tasks for managing content:

- [Adding a New Content Item](#)
- [Viewing Content Metadata](#)
- [Updating Content Metadata](#)
- [Reviewing Expired Content from Repository Manager](#)
- [Automating Notification of Expiration](#)

2.4.3.1 Adding a New Content Item

To add a new content item using the Repository Manager:

Note: You cannot add a new content item using the Repository Manager launched as a Java applet from a browser. You must use the stand-alone application.

1. Display the [Repository Manager: Content Tab Screen](#) in stand-alone mode.
2. Click **Add New**.
The [Add New Content Item Screen](#) is displayed.
3. Enter the required and optional information for the content item.
4. Click **OK**.
The specified file is checked into the content server as a new content item.

2.4.3.2 Viewing Content Metadata

To view the metadata for a revision using the Repository Manager:

1. Display the [Repository Manager: Content Tab Screen](#).
2. Select the revision you want to view the metadata for.
3. Select **Functions, Info**, or right-click and select **Info**.
The [Approve Revision Screen](#) is displayed.
4. Click **OK** to close the screen.

2.4.3.3 Updating Content Metadata

To update the metadata for a revision using the Repository Manager:

1. Display the [Repository Manager: Content Tab Screen](#).
2. Select the revision you want to update the metadata for.
3. Select **Functions, Update**, or right-click and select **Update**.
The [Update Content Info Screen](#) is displayed.
4. Enter new metadata as necessary.
5. Click **OK**.
The metadata is updated without checking in a new revision.

2.4.3.4 Reviewing Expired Content from Repository Manager

To review expired content from Repository Manager:

1. Display the [Repository Manager Main Screen](#).
2. From the Content tab, select Define Filter.
The [Define Filter Screen](#) is displayed.
3. Enable Revision Status, and select Expired.
A list of expired content is displayed.

2.4.3.5 Automating Notification of Expiration

Expired content is available for review by users. You can create an automatic notification by email to the author of content and the administrator when the content will be expired in a short period of time.

Follow this procedure to automate e-mail messages:

1. Edit `IntradocDir/config/config.cfg` in a text editor and enter the following:


```
EnableExpirationNotifier=1
```
2. Adjust optional configuration entries as described in the following sections. By default, an e-mail message is sent to the administrator at midnight, seven days before a piece of content is set to expire. And, an *Expired Content* link is added for the author and system administrator on their respective Content Management trays.
3. Restart content server.

2.4.3.5.1 NotificationQuery The **NotificationQuery** setting defines the criteria for the automatic query that searches for expired content:

`NotificationQuery=<query>`

- The `<query>` value can be Idoc script, URL encoded, or plain text:
 - An **Idoc Script query** is built from Idoc script. For example, if you use database indexing, the following query will give you e-mail notifications for all documents that expire in seven days:

```
NotificationQuery=dOutDate < '<$dateCurrent(7)$>'
```

Or, if you use database indexing, the following query will give you e-mail notifications for all documents that have already expired:

```
NotificationQuery=dOutDate<<$formatDateDatabase(toInteger(dateCurrent()))$>
```

Note: Depending on the search engine, you may not receive e-mail notifications of already expired content. You may only receive e-mail notifications for content that will expire shortly.

- A **URL encoded query** uses the URL that is displayed in the web browser address bar when you perform a search in Content Server. You can run a query and then copy and paste the query text, starting from 'QueryText=', to define the Notification query. For example, the following query returns all content expired after August 1, 2006:

```
NotificationQuery=QueryText=dOutDate+%3C+%608%2F1%2F06%60&SearchProviders=[...]
```

- A **plain text query** uses plain text to define the search variables. For example, the following query returns all content expired on August 1, 2006:

```
NotificationQuery=dOutDate=8/1/06
```

- If the `NotificationQuery` setting is not defined, the default value is all content that will expire in the next 7 days:

```
NotificationQuery=dOutDate < '<$dateCurrent(7)$>'
```


2.4.3.5.2 NotifyExtras The **NotifyExtras** setting defines users who will receive a list of expired content (in addition to the authors of each content item):

```
NotifyExtras=<user1>,<user2>
```

If the **NotifyExtras** setting is not in the *config.cfg* file, the default value is *sysadmin*:

```
NotifyExtras=sysadmin
```

If the **NotifyExtras** setting is in the *config.cfg* file but the value is left blank, no extra notification will be sent.

2.4.3.5.3 NotificationIntervalInDays The **NotificationIntervalInDays** setting defines how often the notification query is run:

```
NotificationIntervalInDays=<number of days>
```

If the **NotificationIntervalInDays** setting is not defined, the default value is 1 day:

```
NotificationIntervalInDays=1
```

2.4.3.5.4 NotifyTime The **NotifyTime** setting defines the time of day that the notification query is run and is specified in 24-hour notation:

```
NotifyTime=<hh:mm>
```

For example, if the desired time is 11:30 AM, the setting would be:

```
NotifyTime=11:30
```

However, if the desired time is 1:30 PM, the setting would be:

```
NotifyTime=13:30
```

If the **NotifyTime** setting is not defined, the default value is midnight:

```
NotifyTime=00:01
```

2.4.3.5.5 NotificationMaximum The **NotificationMaximum** setting defines the maximum number of content items that will be returned by the notification query:

```
NotificationMaximum=<maximum # of documents returned>
```

If the **NotificationMaximum** setting is not defined, the default value is 1,000:

```
NotificationMaximum=1000
```

Content items are sorted by release date. The most recently released items will be returned.

2.4.4 Managing Revisions

A revision is a new or revised version of a content item. By default, revisions are numbered sequentially starting with Revision 1, and every time the content item is checked out and checked in again, the revision number is incremented by one. Each time that you check out a file and check it back in, Content Server creates a new revision of that file. The new revision has the same content ID as the previous revision, but the native file and the metadata can be the same or different. The system stores the previous versions of a file, so you can review them as necessary.

These are typical tasks for managing revisions:

- [Adding a New Revision](#)

- [Checking Out a Revision](#)
- [Undoing a Revision Checkout](#)
- [Resubmitting a Revision for Conversion](#)
- [Deleting a Revision](#)
- [Deleting All Revisions of a Content Item](#)

2.4.4.1 Adding a New Revision

To add a new revision of an existing content item using the Repository Manager:

Note: You cannot add a new revision using the Repository Manager launched as a Java applet from a browser. You must use the stand-alone application.

1. Display the [Repository Manager: Content Tab Screen](#) in stand-alone mode.
2. Select the revision to which you want to add a new revision.
3. Click **Add Revision**, select **Functions, Add Revision**, or right-click and select **Add Revision**.

The [Add New Revision Screen](#) is displayed.

4. Enter the required and optional information for the revision.
5. Click **OK**.

The specified file is checked into the content server as a new revision.

2.4.4.2 Checking Out a Revision

To check out a revision using the Repository Manager:

1. Display the [Repository Manager: Content Tab Screen](#) in stand-alone mode.
2. Select one or more revisions you want to check out.
3. Select **Functions, Check Out**, or right-click and select **Check Out**.

The [Check Out Item Screen](#) is displayed.

4. To exclude a revision from the list, clear the check box next to the revision.
5. Click **OK**.

The selected revisions are checked out.

2.4.4.3 Undoing a Revision Checkout

To undo a content item checkout using the Repository Manager:

1. Display the [Repository Manager: Content Tab Screen](#).
2. Select one or more revisions for which you want to undo the checkout.
3. Select **Functions, Undo Check Out**, or right-click and select **Undo Check Out**.

The [Undo Check Out Screen](#) is displayed.

4. To exclude a revision from the list, clear the check box next to the revision.
5. Click **OK**.

The checkout is undone for the selected revisions.

2.4.4.4 Resubmitting a Revision for Conversion

To resubmit a revision to the Inbound Refinery for conversion using the Repository Manager:

1. Display the [Repository Manager: Content Tab Screen](#).
2. Select one or more revisions you want to resubmit for conversion.
3. Select **Functions, Resubmit**, or right-click and select **Resubmit**.

The [Resubmit Revision Screen](#) is displayed.

4. To exclude a revision from the list, clear the check box next to the revision.
5. Click **OK**.

The selected revisions are resubmitted to the Inbound Refinery for conversion.

2.4.4.5 Deleting a Revision

To delete a particular revision using the Repository Manager:

1. Display the [Repository Manager: Content Tab Screen](#).
2. Select one or more revisions you want to delete.
3. Click **Delete Revision**, select **Functions, Delete Revision**, or right-click and select **Delete Revision**.

The [Delete Revision Screen](#) is displayed.

4. To exclude a revision from the list, clear the check box next to the revision.
5. Click **OK**.

The selected revisions are deleted.

2.4.4.6 Deleting All Revisions of a Content Item

To delete all revisions of a content item using the Repository Manager:

1. Display the [Repository Manager: Content Tab Screen](#).
2. Select one or more revisions of content items you want to delete.
3. Click **Delete All Revisions**, select **Functions, Delete All Revisions**, or right-click and select **Delete All Revisions**.

The [Delete All Revisions Screen](#) is displayed.

4. To exclude a revision from the list, clear the check box next to the revision.
5. Click **OK**.

All revisions of selected content items are deleted.

2.4.5 Managing Workflow Revisions

A workflow specifies how content is routed for review and approval before it is released to the system. Users are notified by e-mail when they have a file to review.

From a workflow participant's point of view, there are two types of workflows:

- A **basic** workflow defines the review process for specific content items, and must be initiated manually.

- In a **criteria** workflow, a file enters the workflow automatically upon check-in when its metadata matches predefined criteria.

These are typical tasks for managing workflow revisions

- [Approving a Revision in a Workflow](#)
- [Rejecting a Revision in a Workflow](#)

2.4.5.1 Approving a Revision in a Workflow

To approve a revision in a workflow using the Repository Manager:

1. Display the [Repository Manager: Content Tab Screen](#).
2. Select one or more revisions you want to approve.
3. Select **Functions, Approve**, or right-click and select **Approve**.
The [Approve Revision Screen](#) is displayed.
4. To exclude a revision from the list, clear the check box next to the revision.
5. Click **OK**.

The selected revisions are approved.

2.4.5.2 Rejecting a Revision in a Workflow

To reject a revision in a workflow using the Repository Manager:

1. Display the [Repository Manager: Content Tab Screen](#).
2. Select one or more revisions you want to reject.
3. Select **Functions, Reject**, or right-click and select **Reject**.
The [Reject Revision Screen](#) is displayed.
4. To exclude a revision from the list, clear the check box next to the revision.
5. Enter a message to explain the reason for the rejection.
6. Click **OK**.

The revision returns to the last reviewer/contributor step, and a rejection notification e-mail is sent to the reviewers for that step.

2.5 Subscribing Content to Users

This section covers these topics:

- ["About Subscriptions"](#) on page 2-18
- ["Managing Subscriptions"](#) on page 2-19

2.5.1 About Subscriptions

A subscription is a content server function that notifies users by e-mail when a particular content item has been revised.

Tip: To change the subscription notification message, you can use Component Architecture to customize the following:

- `subscription_mail_subject` include (in `std_page.htm` file)
 - `wwSubscriptionMailSubject` string (in `ww_strings.htm` file)
 - `subscription_mail.htm` template
-
-

Tip: The content server has an e-mail message buffer of 20000 bytes. If a large number of subscription e-mail notices are triggered in a short period of time (for example, 40 content items with 40 subscribers each), the buffer can become overloaded and the e-mail messages will not be sent. The following content server error message indicates that the buffer was overloaded: Work queue error: Error while collating work queue (Message to append to queue 'CollatedWorkQueue' was too large.).

This section covers the following topics:

- ["Subscription Methods"](#) on page 2-19
- ["Subscription Assignment"](#) on page 2-19

2.5.1.1 Subscription Methods

There are two ways subscriptions can be created:

- **Basic subscription:** Users manually subscribe to individual content items. This type of subscription is predefined in the content server.
- **Criteria subscription:** Users can subscribe to a group of content items based on metadata criteria. Administrators can set up a Criteria subscription in two ways: with users or with aliases. If a subscription is set up with users, users can unsubscribe if they wish. If aliases are used, users cannot unsubscribe.

2.5.1.2 Subscription Assignment

There are two ways that users can subscribe to content items:

- **Open subscription:** Users manually subscribe to a content item through a Basic or Criteria subscription.
- **Forced subscription:** An administrator assigns users and/or aliases to a particular subscription. If individual users are assigned, each user can unsubscribe if they wish. If an alias is assigned, the users in that alias cannot unsubscribe.

2.5.2 Managing Subscriptions

These are common tasks in managing subscriptions.

- [Adding a Criteria Subscription](#)
- [Specifying Subscription Criteria](#)
- [Adding Users to a Subscription](#)
- [Unsubscribing Users from a Content Revision](#)
- [Editing a Criteria Subscription](#)

- [Viewing Subscription Information](#)
- [Deleting a Criteria Subscription](#)

2.5.2.1 Adding a Criteria Subscription

To add a Criteria subscription:

1. Specify the subscription criteria. See "[Specifying Subscription Criteria](#)" on page 2-20.
2. Add users. See "[Adding Users to a Subscription](#)" on page 2-20.

Tip: If any of the users added to subscription do not have a correct e-mail address, notification fails. The system quits after it encounters five errors in the work queue log and does not notify the rest of the subscribers.

2.5.2.2 Specifying Subscription Criteria

To specify subscription criteria:

1. Display the [Repository Manager: Subscriptions Tab](#).
2. Click **Add**.
The [Add New/Edit Subscription Type Screen](#) is displayed.
3. Enter a name and description for the subscription.
4. Click **Fields**.
The [Fields Screen](#) is displayed.
5. Specify which fields you require for this subscription. (You set the values for these fields later, when you add users.)
6. Click **OK**.
7. Specify whether to enable or disable the subscription.
8. Click **OK**.

2.5.2.3 Adding Users to a Subscription

To add users to a Criteria subscription:

1. Display the [Repository Manager: Subscriptions Tab](#) and select the subscription to which users will be added.
2. Click **Subscribers**.
The [Users Subscribed Screen](#) is displayed.
3. Click **Add**.
The [Add Subscription Screen](#) is displayed.
4. Select **User** or **Alias**.
5. Click **Select**.
The [Select User Screen](#) or [Select Alias Screen](#) is displayed.
6. Select the users or aliases to be subscribed.
7. Click **OK**.

8. Set the values for the criteria fields that you specified earlier.
9. Click **OK**.

2.5.2.4 Unsubscribing Users from a Content Revision

To unsubscribe a user or alias from a content item using the Repository Manager:

1. Display the [Repository Manager: Subscriptions Tab](#).
2. Select the revision you want to unsubscribe the user or alias from.
3. Select **Functions, Subscribers**, or right-click and select **Subscribers**.
The [Subscribers Screen](#) is displayed.
4. Select the user alias to unsubscribe.
5. Click **Unsubscribe**.
A confirmation screen is displayed.
6. Click **OK**.
The user or alias is removed from the Subscriptions list.

2.5.2.5 Editing a Criteria Subscription

To edit a Criteria subscription:

1. Display the [Repository Manager: Subscriptions Tab](#).
2. Select a subscription.
3. Click **Edit**.
The [Add New/Edit Subscription Type Screen](#) is displayed.
4. Change any necessary settings, and click **OK**.

Important: If you change any criteria fields, you delete all current subscriptions. Use care when working with this feature.

5. Click **Subscribers**.
The [Users Subscribed Screen](#) is displayed.
6. Change any necessary settings, and click **OK**.

2.5.2.6 Viewing Subscription Information

To view subscription information for a revision using the Repository Manager:

1. Display the [Repository Manager: Subscriptions Tab](#).
2. Select the revision you want to view the subscription information for.
3. Select **Functions, Subscribers**, or right-click and select **Subscribers**.
The [Subscribers Screen](#) is displayed.
4. To narrow the Subscriptions list:
 - a. Select the **Use Filter** check box.
 - b. Click **Define Filter**.
The [Subscription Detail Screen](#) is displayed.

- c. Enter the filter criteria.
- d. Click **OK**.
5. To view all subscription details for a particular user or alias, select the user or alias and click **View Details**.

The [Subscription Detail Screen](#) is displayed.

2.5.2.7 Deleting a Criteria Subscription

To delete a Criteria subscription:

1. Display the [Repository Manager: Subscriptions Tab](#).
2. Select a subscription.
3. Click **Delete**.

A confirmation screen is displayed.

4. Click **Yes**.

2.6 Managing Linked Content with Link Manager

Link Manager is an optional component bundled with and automatically installed with Content Server. If enabled, it evaluates, filters, and parses the URL links of indexed content items before extracting them for storage in a database table (ManagedLinks). After the ManagedLinks table is populated with the extracted URL links, the Link Manager component references this table to generate link search results, lists of link references for the Content Information page, and the resource information for the Link Info page. The Link Manager component enables you to:

- View lists of links using specific search criteria
- View detailed information about a specific link
- Recompute and refresh links to reevaluate and validate them
- View the links to other content in a specific content item
- View the links back to a specific content item.

The search results, link references lists, and Link Info pages are useful to determine what content items are affected by content additions, changes, or revision deletions. For example, before deleting a content item, you can verify that any URL references contained in it are insignificant. Another use might be to monitor how content items are being used.

Note: Because the Link Manager component extracts the URL links during the Content Server indexing cycle, only the URL links of released content items are extracted. For content items with multiple revisions, only the most current released revision will have entries in the database table. If you install the Link Manager component after content items are already checked in, you will need to perform a rebuild to ensure that all links are included in the ManagedLinks table.

Note: Because Link Manager does all of its work during the indexing cycle, it will increase the amount of time required to index content items and to rebuild collections. For information about disabling Link Manager during the rebuild cycle, refer to the sections on `LkDisableOnRebuild` and `LkReExtractOnRebuild` in the *Oracle Fusion Middleware Idoc Script Reference Guide*.

However, the time taken may not be noticeable since most of the time is spent indexing the content item into the collection. Although, the amount of time required does depend on the type and size of the content items involved. That is, if the file needs to be converted, this requires more time than text-based (HTML) files.

For more information about file formats, conversion, and link extraction, see "[Link Extraction Process](#)" on page 2-23 and "[File Formats and Conversion](#)" on page 2-24.

This section covers the following topics:

- "[About Managed Links](#)" on page 2-23
- "[Configuring Link Manager](#)" on page 2-25
- "[Managing Links](#)" on page 2-29
- "[Link Manager Database Tables](#)" on page 2-31
- "[Link Manager Filters](#)" on page 2-32
- "[Site Studio Integration](#)" on page 2-33

2.6.1 About Managed Links

This section covers the following topics:

- "[Link Extraction Process](#)" on page 2-23
- "[File Formats and Conversion](#)" on page 2-24
- "[Link Status](#)" on page 2-25

2.6.1.1 Link Extraction Process

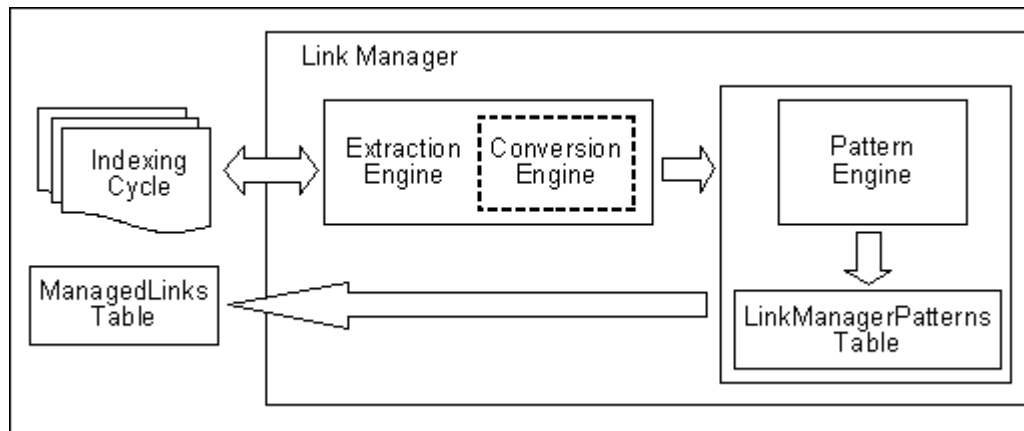
The Link Manager consists of an extraction engine and a pattern engine. The extraction engine includes a conversion engine (`HtmlExport`). The conversion engine is used to convert files that the extraction engine cannot natively parse to a text-based file format (HTML).

Link Manager does not use `HtmlExport` to convert files that contain any of the following strings in the file format: `hcs`, `htm`, `image`, `text`, `xml`, `jsp`, and `asp`. These text-based files are handled by Link Manager without need for conversion.

During the indexing cycle, the Link Manager component searches the checked-in content items to find URL Links. This occurs as follows:

1. The extraction engine converts the file using the conversion engine (if necessary).
2. The extraction engine then uses the pattern engine to access the link evaluation rules defined in the `LinkManagerPatterns` table.
3. The evaluation rules tell the extraction engine how to sort, filter, evaluate, and parse the accepted URL links in the content items.

4. The accepted URL links are inserted or updated in the ManagedLinks table.



Caution: With this release, the Link Manager component uses HtmlExport 8 (shipped with the current version of Content Server) for file conversion. A link extractor template file is included with the Link Manager component. HtmlExport 8 requires this template. Do not edit this file.

Important: To execute successfully, HtmlExport requires either a virtual or physical video interface adaptor (VIA). For example, most Windows environments have graphics capabilities that provide HtmlExport access to a frame buffer. UNIX systems, however, may not have graphics cards and do not have a running X-Windows Server for use by HtmlExport. For systems without graphics cards, a virtual frame buffer (VFB) can be installed and used.

2.6.1.2 File Formats and Conversion

There are various file formats (such as Word) that need to be converted by the conversion engine (HtmlExport) before links can be extracted. However, links in text-based files (HTML) can be extracted by Link Manager without requiring conversion by HtmlExport. Therefore, Link Manager does not use HtmlExport to convert files that contain any of the following strings in the file format: hcs, htm, image, text, xml, jsp, and asp.

Furthermore, Link Manager handles all the variations of these file formats. For example, the hcs string matches the dynamic server page strings: hcst, hcsp, and hcstf. Also, the image string matches all comparable variants such as image/gif, image/jpeg, image/rgb, image/tiff, etc. In addition to these, there may be other file types that you do not want to be converted. In this case, you can use a configuration variable to prevent their conversion. For more information, see the sections on `LkDisallowConversionFormats` in the *Oracle Fusion Middleware Idoc Script Reference Guide*.

Link Manager recognizes links in the following file formats:

- Text-based formats (txt, html, xml, jsp, asp, csv, hcst, hcstf, and hcsp)
- Email (msg and eml)
- Microsoft Word

- Microsoft Excel
- OpenOffice Writer
- OpenOffice Calc

2.6.1.3 Link Status

All new and existing links are managed during the indexing cycle. When content items are checked in, the accepted links in these content items are added to or updated in the ManagedLinks table. Additionally, existing links are evaluated for changes resulting from content items being checked in or deleted. As links are added or monitored, they are marked as either valid or invalid.

When one content item in the system references another content item in the system, the resulting link is marked as valid. When an existing link references a content item that has been deleted, the link is reevaluated and the status changes from valid to invalid. Statuses are recorded as a Y (valid) or N (invalid) in the *dLkState* column of the [ManagedLinks Table](#) and displayed for the user in the *State* column of the Link Info page as *Valid* or *Invalid*. For more information on the Link Info page, see the *Oracle Fusion Middleware User's Guide for Content Server*.

2.6.2 Configuring Link Manager

The following Link Manager configuration variables can be specified in the `IntradocDir/config/config.cfg` file:

- `"AllowForceDelete"` on page 2-25
- `"HasSiteStudio"` on page 2-25
- `"LkRefreshBatchSize"` on page 2-26
- `"LkRefreshErrorsAllowed"` on page 2-26
- `"LkRefreshErrorPercent"` on page 2-27
- `"LkRefreshErrorThreshold"` on page 2-27
- `"LkDisableOnRebuild"` on page 2-27
- `"LkDisallowConversionFormats"` on page 2-28
- `"LkReExtractOnRebuild"` on page 2-28
- `"LkIsSecureSearch"` on page 2-29

2.6.2.1 AllowForceDelete

Use `AllowForceDelete` to allow Content Server to delete content items that are referenced (or used) by other content items.

`AllowForceDelete=true` configures Content Server to be allowed to delete a content item that is referenced as a link. Deleting a content item that is referenced by other content items invalidates the links. If the value is not set to true, a request to delete a referenced content item will fail.

`AllowForceDelete=false` configures Content Server to refuse a request to delete a content item that is referenced as a link. This is the default setting.

2.6.2.2 HasSiteStudio

If Site Studio is installed, use `HasSiteStudio` to enable the Site Studio-specific link patterns for parsing friendly URLs for the pattern engine. For more detailed

information about the current integration of Site Studio with Link Manager, refer to "[Site Studio Integration](#)" on page 2-33.

`HasSiteStudio=true` enables the Site Studio-specific link patterns.

`HasSiteStudio=false` disables the Site Studio-specific link patterns. This is the default setting.

2.6.2.3 LkRefreshBatchSize

Use `LkRefreshBatchSize` to control the number of links submitted to Site Studio during a refresh process. By default, the batch size value is set to 100.

Depending on the value, the `LkRefreshBatchSize` configuration variable can make the refresh processes more (or less) receptive to an abort request. For example, the lower the value, the more responsive the [Aborting the Refresh Activity](#) is regarding the current refresh process.

Also, the calculation for `LkRefreshErrorsAllowed` is completed after rather than during each batch process. Therefore, the lower the value for `LkRefreshBatchSize`, the more likely it is that the refresh activity will promptly terminate because the number of allowed errors is more quickly exceeded.

`LkRefreshBatchSize=<number>`

For more information about the refresh processes available with Link Manager, refer to "[Managed Links Administration Page](#)" on page 2-35.

Note: If you are using Site Studio, `LkRefreshBatchSize` enables you to have better control over the refresh abort option than using the combined `LkRefreshErrorPercent` and `LkRefreshErrorThreshold` settings. For example, if you set the percent value to 5 and the threshold value to 20, you would expect the refresh activity to abort after the first error. However, Link Manager might actually process more than one error before aborting.

The reason for this is that during refresh activities, all the links recognized as Site Studio links (or those requiring Site Studio processing) are grouped and sent to Site Studio as a batch. Consequently, refreshes are more efficient, but abort requests are unresponsive during this time because Site Studio is unaware of aborts and total error counts.

However, Site Studio is aware of the number of errors it has encountered in the current batch. For this reason, the Link Manager's abort calculation can not take place in all situations and the error configuration values (percent and threshold) are simply suggestions to Link Manager for when an abort should occur. Using `LkRefreshBatchSize`, however, enables you to more accurately control the abort receptivity during refresh activities that involve Site Studio link batches.

2.6.2.4 LkRefreshErrorsAllowed

Use `LkRefreshErrorsAllowed` to set an absolute error count for refresh processes. Once the set number of errors is encountered, the refresh activity will abort. By default, this configuration setting is not used.

`LkRefreshErrorsAllowed=<number>`

For more information about the refresh processes available with Link Manager, refer to "[Managed Links Administration Page](#)" on page 2-35.

If you choose to set a value for the [LkRefreshErrorsAllowed](#) configuration setting, it could override the combination of values for threshold ([LkRefreshErrorThreshold](#)) and percent ([LkRefreshErrorPercent](#)). For example, if the [LkRefreshErrorsAllowed](#) value is less than the calculated threshold/percent value for links/errors, then the refresh activity could abort even if the number of links processed does not exceed the threshold limit. Therefore, it is recommended that you use either the [LkRefreshErrorsAllowed](#) configuration setting or the combination of the [LkRefreshErrorThreshold](#) and [LkRefreshErrorPercent](#) configuration settings.

2.6.2.5 LkRefreshErrorPercent

This value is used with [LkRefreshErrorThreshold](#) to compute whether the refresh activity should be aborted. When the refresh activity processes more links than the threshold value, Link Manager calculates the proportion of errors. If the number of errors exceeds the percent value, the refresh activity is aborted. For example, if the threshold value is 300 and the percent value is 20, the refresh activity will abort if 60 errors are encountered after processing more than 300 links. By default, the percent value is set to 10.

```
LkRefreshErrorPercent=<number>
```

For more information about the refresh processes available with Link Manager, refer to "[Managed Links Administration Page](#)" on page 2-35.

If you choose to set a value for the [LkRefreshErrorsAllowed](#) configuration setting, it could override the combination of values for threshold ([LkRefreshErrorThreshold](#)) and percent ([LkRefreshErrorPercent](#)). For example, if the [LkRefreshErrorsAllowed](#) value is less than the calculated threshold/percent value for links/errors, then the refresh activity could abort even if the number of links processed does not exceed the threshold limit. Therefore, it is recommended that you use either the [LkRefreshErrorsAllowed](#) configuration setting or the combination of the [LkRefreshErrorThreshold](#) and [LkRefreshErrorPercent](#) configuration settings.

2.6.2.6 LkRefreshErrorThreshold

This value is used with [LkRefreshErrorPercent](#) to compute whether the refresh activity should be aborted. The [LkRefreshErrorThreshold](#) value indicates how many links need to be processed before the percentage of errors is calculated. Depending on the proportion of errors that are detected, the refresh activity may need to be aborted. For example, if the threshold value is 300 and the percent value is 20, the refresh activity will abort if 60 errors are encountered after processing more than 300 links. By default, the percent value is set to 10. By default, the threshold value is set to 100.

```
LkRefreshErrorThreshold=<number>
```

For more information about the refresh processes available with Link Manager, refer to "[Managed Links Administration Page](#)" on page 2-35

If you choose to set a value for the [LkRefreshErrorsAllowed](#) configuration setting, it could override the combination of values for threshold ([LkRefreshErrorThreshold](#)) and percent ([LkRefreshErrorPercent](#)). For example, if the [LkRefreshErrorsAllowed](#) value is less than the calculated threshold/percent value for links/errors, then the refresh activity could abort even if the number of links processed does not exceed the threshold limit. Therefore, it is recommended that you use either the [LkRefreshErrorsAllowed](#) configuration setting or the combination of the [LkRefreshErrorThreshold](#) and [LkRefreshErrorPercent](#) configuration settings.

2.6.2.7 LkDisableOnRebuild

Use [LkDisableOnRebuild](#) to control link extraction during the indexing rebuild cycle.

`LkDisableOnRebuild=true` prevents Link Manager from extracting links during the indexing rebuild cycle.

`LkDisableOnRebuild=false` configures Link Manager to extract links during the indexing rebuild cycle. This is the default setting.

Because Link Manager does all of its work during the indexing cycle, it will increase the amount of time required to index documents and to rebuild collections. However, the time taken may not be noticeable since most of the time is spent indexing the document into the collection. Although, the amount of time required does depend on the type and size of the documents involved. That is, if the file needs to be converted, this requires more time than text-based (HTML) files.

For more information about file formats, conversion, and link extraction, refer to "[Link Extraction Process](#)" on page 2-23 and "[File Formats and Conversion](#)" on page 2-24.

2.6.2.8 LkDisallowConversionFormats

Use `LkDisallowConversionFormats` to provide a list of file formats that will not be converted (using `HtmlExport`) before being processed for link extraction. There are various file formats (such as Word) that need to be converted by `HtmlExport` before links can be extracted. However, links in text-based file formats (HTML) can be extracted by Link Manager without requiring conversion by `HtmlExport`.

For example, you may have PHP files (or files in some other custom format) that are actually text-based. For such files, conversion by `HtmlExport` may not be necessary before Link Manager processes them for link extraction. Such formats can be listed in this configuration variable.

```
LkDisallowConversionFormats=<format>, . . . , <format>
```

Where `<format>` is the MIME type.

Example 1

```
LkDisallowConversionFormats=application/msword, audio/wav, video/avi
```

In this example, specifying the full MIME type format limits the variations of the listed types that are excluded. For example, listing `application/msword` will not exclude `application/vnd.msword` or other variations. In this case, you must include each specific MIME type variation in the list that you want to exclude.

Example 2

```
LkDisallowConversionFormats=msword, wav, avi
```

In this example, all variations of each MIME type in the list are excluded. Using the shortened format of the MIME type is more advantageous in that it allows greater flexibility.

Link Manager does not use `HtmlExport` to convert files that contain any of the following strings in the file format: `hcs`, `htm`, `image`, `text`, `xml`, `jsp`, and `asp`. These files are handled by Link Manager without need for conversion. To check the current file formats and extension mappings of your system, use the File Formats window in the Configuration Manager.

2.6.2.9 LkReExtractOnRebuild

Use `LkReExtractOnRebuild` to control link extraction from previously indexed documents during a rebuild.

`LkReExtractOnRebuild=true` configures Link Manager to extract links from documents as they are indexed into the system during a rebuild. This is the default setting.

`LkReExtractOnRebuild=false` prevents Link Manager from extracting links from documents as they are indexed into the system during a rebuild

Note: Because Link Manager does all of its work during the indexing cycle, it will increase the amount of time required to index documents and to rebuild collections. See also "[LkDisableOnRebuild](#)" on page 2-27. However, the time taken may not be noticeable since most of the time is spent indexing the document into the collection. Although, the amount of time required does depend on the type and size of the documents involved. That is, if the file needs to be converted, this requires more time than text-based (HTML) files.

For more information about file formats, conversion, and link extraction, refer to "[Link Extraction Process](#)" on page 2-23 and "[File Formats and Conversion](#)" on page 2-24.

2.6.2.10 LkIsSecureSearch

Use `LkIsSecureSearch` to manage security restriction checks for non-admin users during a link search. To implement the security check, Link Manager performs an inner join between the Revisions table and the ManagedLinks table, and applies standard Content Server security using security groups and accounts.

Note: The security check using the `LkIsSecureSearch` configuration variable is limited and can be bypassed if a user uses the Site Studio-specific fields for searching.

`LkIsSecureSearch=true` configures Link Manager to perform a security check on non-admin users while implementing a managed link search. This is the default setting.

`LkIsSecureSearch=false` prevents Link Manager from performing a security check on non-admin users while implementing a managed link search.

Example

If a document with the link is Secure and the linked document is public, a user without permissions to Secure will not be able to find the document containing the link in the Search Links results.

If a document with the link is Public and the linked document is Secure, the document containing the link will be found in the Search Links results, but the same user will not be able to use the link (that is, if it is a link to the web-viewable or the document information for the secure document).

2.6.3 Managing Links

The Link Manager component uses an extraction engine that references the link patterns defined in the resource table (`LinkManagerPatterns`). These link patterns are rules that tell the extraction engine how to sort the different links, which links to filter out, which links to accept, and how to parse the links for more information.

Note: The LinkManagerPatterns table is an hda table that is easily accessible by other components. The LinkManagerPatterns table is located in the following file:

UCM_ORACLE_
HOME/ucm/idc/components/LinkManager8/resources/linkmanager_resource.htm

This section covers the following topics:

- ["LinkManagerPatterns Table"](#) on page 2-30
- ["Examples of Link Patterns and Customization"](#) on page 2-31

2.6.3.1 LinkManagerPatterns Table

The LinkManagerPatterns table includes the following columns:

Column Name	Description
lkpName	Provides the name of the pattern and is considered to be the primary key of the table. It is used mainly in error handling and to allow other components to directly target the override of a specified rule.
lkpDescription	Provides an explanation of the purpose of the pattern.
lkpType	<p>The type specifies the initial screening of the URL. Supported types include:</p> <p>prefix-examines the path (or address) of the URL for the specified parameters. If the path begins with one of the specified parameters, then the condition is met.</p> <p>contains-examines the path (or address) of the URL for the specified parameters. If the path contains one of the specified parameters, then the condition is met.</p> <p>service-examines the query string of the URL. If the URL contains a value for IdcService and if this value matches one of the parameters, the condition is met.</p> <p>Note: The extraction engine is actually a two-step engine and the three types above fall into two distinct groups. The 'prefix' and 'contains' types are used on the path part of the URL, while the 'service' type is used on the query string part of the URL.</p>
lkpParameters	<p>A comma-separated list of patterns or parameters used by the type. The parameters are Idoc Script capable and are initially evaluated for Idoc Script. The engine uses the following rules for extracting the patterns from the parameters:</p> <ul style="list-style-type: none"> ■ The parameter string is evaluated for Idoc Script. ■ The parameters are parsed using the comma separator. The result is a list of patterns. ■ Each pattern is XML decoded. <p>Consequently, one rule looks for a URL that begins with the resolved value for <\$HttpRelativeWebRoot\$> by setting lkpParameters to <\$HttpRelativeWebRoot\$>. A subsequent rule may look for a URL that literally begins with <\$HttpRelativeWebRoot\$> by setting the parameter to &lt;\$HttpRelativeWebRoot\$&gt;</p>

Column Name	Description
lkpAccept	<p>If a pattern is matched, this value determines if the URL is accepted. The possible values include:</p> <p>accept-if a pattern is matched, then the URL is accepted.</p> <p>filter-if a pattern is matched, the URL is rejected. This value is usually combined with lkpContinue set to false to stop the processing.</p> <p>pass-if a pattern is matched for the specified type, no determination is made. The 'action' is used to determine how this URL is processed.</p>
lkpContinue	<p>The value determines whether the pattern processing engine will continue to parse the URL.</p> <p>true-the processing continues.</p> <p>false-the processing stops.</p>
lkpLinkType	Specifies the URL type determined for this link.
lkpAction	<p>This is a function defined in the LinkHandler class. It refers to a method in the LinkImplementor class that is used to further parse and evaluate the URL.</p> <p>Note: LinkImplementor can be class aliased or extended.</p>
lkpOrder	The order in which the patterns are to be evaluated.
lkpEnabled	This value is Idoc Script capable and determines whether this rule should be evaluated. It is calculated and evaluated during start up when the patterns are loaded.

2.6.3.2 Examples of Link Patterns and Customization

A components resource table (LinkManagerPatterns) is included with the Link Manager component. Refer to this table for examples of link evaluation rules. This table is located in the UCM_ORACLE_HOME/ucm/idc/components/LinkManager8/resources/linkmanager_resource.htm file. The table can be customized by adding new rules or editing the existing default rules. You can customize the LinkManagerPatterns table using standard component architecture.

2.6.4 Link Manager Database Tables

This section covers the following topics:

- "ManagedLinks Table" on page 2-31
- "LinkReferenceCount Table" on page 2-32

2.6.4.1 ManagedLinks Table

dlkGUID	dlkC	dDocName	dlkType	dlkOriginalUrl	dlk	dlkResource	dlkF	dlkRf	dlkH	dlkState	dlkCreateTs	dlkUpdateTs
68F-387C-48D1-4	20	SCSTEMP_001005	cs_service	http://dburketest/s		SCSTEMP_001008	doc	N	N		8/4/2005 1:04:57 F	8/5/2005 10:27
19AA-FE23-E940-F	10	SCSTEMP_001006	external	http://dburketest/s				N	Y		8/4/2005 10:03:52	8/4/2005 2:51:
18E9-BA8D-86E3-4	4	SCSTEMP_001005	external	http://dburketest/s				N	Y		8/3/2005 2:45:37 F	8/4/2005 2:51:
1CF9-138C-4EF3-F	5	SCSTEMP_001005	cs_service	http://dburketest/s		SCSTEMP_001002	doc	N	Y		8/3/2005 2:45:37 F	8/4/2005 2:51:
2355-645E-0AA8-6	21	SCSTEMP_001005	cs_service	http://dburketest/s		SCSTEMP_001008	doc	N	N		8/4/2005 1:04:57 F	8/5/2005 10:27
43F9-D09D-413C-C	3	SCSTEMP_001005	cs_service	http://dburketest/s		SCST_0027_EN	doc	N	Y		8/3/2005 2:45:37 F	8/4/2005 2:51:
8C09-850D-5B01-8	9	SCSTEMP_001005	cs_service	http://dburketest/s		DCTEMP_PPOINT	doc	N	Y		8/3/2005 2:45:37 F	8/4/2005 2:51:

Important: To improve query execution performance, standard indices were added to the dDocName and dLkResource columns in the ManagedLinks table. System administrators are responsible for adjusting these indices to accommodate specific database tuning requirements in various system environments.

A link is stored in the ManagedLinks table if the pattern engine successfully processes it and determines that the link is acceptable. Each link in the table is assigned a unique class id (dLkClassId) and each row in the table has a unique GUID (dLkGUID). A single link may consist of multiple rows in the table if multiple resources define the link and each resource can independently break the link.

This is especially true for Site Studio links where a single link may be defined by both a node and a content item. If the node is missing, the link breaks. If the content item is missing, the link breaks. In this case, there are two resources that do not depend on each other and each can break the link. Consequently, each resource is managed separately in the ManagedLinks table. For additional information about Site Studio links, see "[Site Studio Integration](#)" on page 2-33.

Note: When a content item is checked in and a link references it, the link is marked as valid. When a link references a deleted content item, the link is marked as invalid. Notice that the dLkState column indicates the link's status as Y (valid) or N (invalid).

2.6.4.2 LinkReferenceCount Table

dDocName	dLkRefCount
SCSTEMP_PPOINT	2
SCST_0005_EN	2
SCST_0027_EN	2
SCSTEMP_001002	2
SCSTEMP_001005	2
SCSTEMP_001006	2
SCSTEMP_001008	2

The LinkReferenceCount table maps the content items to the number of times each is referenced in the ManagedLinks table. A content item in this table might not be a content item that is currently managed by Content Server. If there is an entry for a content item in this table, it only indicates that a link in the ManagedLinks table, as parsed by the pattern engine, has referenced the content item as a 'doc' resource.

2.6.5 Link Manager Filters

The Link Manager component provides filters for parts of the pattern engine that allow customization of some very specific behavior. In general, the rules of the pattern engine are the most likely to be modified. However, in certain circumstances, Link Manager explicitly creates and uses filters to augment its standard behavior.

This section covers the following topics:

- "[extractLinks Filter](#)" on page 2-33
- "[linkParseService Filter](#)" on page 2-33
- "[sortAndDecodeLinks Filter](#)" on page 2-33

2.6.5.1 extractLinks Filter

The extractLinks filter is used during the [Link Extraction Process](#) when the extraction engine parses the accepted URL links. As links are extracted, Link Manager looks for specific HTML tags. However, you may decide that other HTML tags might also contain relevant links. In this case, you can use this filter to extract these additional links.

The tag is passed to the filter as a cached object with the key HtmlTag. The value (or link) is passed back to the parse with the key HtmlValue. If the filter extracts extra information, you should be aware that the passed-in binder is flushed before being passed to the pattern engine. The service.setCachedObject and service.getCachedObject methods should pass and retrieve the extra information, respectively.

Note: By default, it looks for the following HTML tags: <a>, <link>, <iframe>, , <script>, and <frame>.

2.6.5.2 linkParseService Filter

The linkParseService filter is used during the [Link Extraction Process](#) when the pattern engine evaluates links. Specifically, the links that are identified to use the IdcService parameter. After evaluation, the link binder and service are provided for the linkParseService filter.

The service contains the binder for the parsed URL and information map. You may choose to customize the values in the parsed URL binder by adjusting certain parameters. Or, you may decide to customize the information map (which tells the parseService method what parameters to extract from the URL binder and how to map the data to resource types).

2.6.5.3 sortAndDecodeLinks Filter

The sortAndDecodeLinks filter is only available from the 'refresh' option. That is, it is only called when users are refreshing the links. For more information about Link Manager refresh options, refer to "[Managed Links Administration Page](#)" on page 2-35. The service contains the 'LinkSetMap' which includes a sorted list of links contained in the ManagedLinks table. The refresh validates the Site Studio links and the existence of all links referring to 'doc' resources. However, you may decide to create a component that augments the standard validation.

2.6.6 Site Studio Integration

When configured to work with Site Studio, Link Manager obtains links from Site Studio by directly requesting a parsing of the links that Site Studio has identified. In return, Site Studio provides information about the links pertaining to its health and components. In particular, Site Studio provides information about the node/section, if a content item is used, the state of the content item, the type of link (friendly, page, or node), and if the link is valid.

Important: When you are using Site Studio, you must set the *HasSiteStudio* configuration variable value to true. This variable enables the Site Studio-specific patterns for parsing 'friendly' URLs for the pattern engine. For more information on the *HasSiteStudio* variable, see the *Oracle Fusion Middleware Idoc Script Reference Guide*.

Note: Site Studio does not load its project information when the Standalone applications are launched. Therefore the Site Studio links will not be properly evaluated if a rebuild or index update cycle is started and completed by a standalone application.

When a user changes the links via the Site Studio designer, Link Manager listens to filter events. Consequently, if a node is deleted, Link Manager marks all links using the deleted node as invalid. This means that Link Manager successfully manages links that directly reference the node ID. Additionally, with information provided by Site Studio, Link Manager can accurately determine the state of the link.

However, friendly URLs (i.e., links that do not reference the node ID or dDocName) are more difficult to manage and ensure accuracy. When a node property changes, Link Manager marks all friendly links using this node as invalid and broken. This includes both absolute and relative links. Although this may not actually be the case, Link Manager can not retrace the parent chain to determine what part of the link was changed, how to fix it, or determine if it is actually broken.

2.6.6.1 Types of Site Studio Managed Links

Site Studio uses two types of managed links:

- Completely Managed Links:
 - Any links using the SS_GET_PAGE IdcService.
 - Links to nodes that include:
 - javascript:nodelink(Node,Site)
 - javascript:nodelink(Node)
 - ssNodeLink(Node,Site)
 - ssNodeLink(Node)
 - ssNODELINK/Site/Node
 - ssNODELINK/Node
 - Links to pages that include:
 - javascript:link(Doc,Node,Site)
 - javascript:link(Doc,Node)
 - javascript:link(Doc)
 - ssLink(Doc,Node,Site)
 - ssLink(Doc,Node)
 - ssLink(Doc)
 - ssLINK/Site/Node/Doc
 - ssLINK/Node/Doc
 - ssLINK/Doc
- Provisionally Managed Links: The following Site Studio links are managed up to Site Studio node changes. The state of the links can be determined by using the 'refresh' option from the [Managed Links Administration Page](#). If the majority of links are of this form and nodes have changed dramatically, it is recommended to refresh or recompute the links.

- Absolute (or full URLs): `http://site/node/doc.htm`
- Friendly links to nodes
 - `<!--$ssServerRelativeSiteRoot-->dir/dir/index.htm`
 - `[!--$ssServerRelativeSiteRoot--]dir/dir/index.htm`
 - `<%=ssServerRelativeSiteRoot%>dir/dir/index.htm`
- Friendly links to pages
 - `<!--$ssServerRelativeSiteRoot-->dir/dir/doc.htm`
 - `[!--$ssServerRelativeSiteRoot--]dir/dir/doc.htm`
 - `<%=ssServerRelativeSiteRoot%>dir/dir/doc.htm`

2.6.7 Link Administration

This section covers the following topics:

- ["Managed Links Administration Page"](#) on page 2-35
- ["Refresh Activity Status"](#) on page 2-36
- ["Alternative Refresh Methods"](#) on page 2-36
- ["Recomputing Links in the ManagedLinks Table"](#) on page 2-37
- ["Refreshing Links in the ManagedLinks Table"](#) on page 2-37
- ["Refreshing the References Counts"](#) on page 2-37
- ["Aborting the Refresh Activity"](#) on page 2-37

2.6.7.1 Managed Links Administration Page

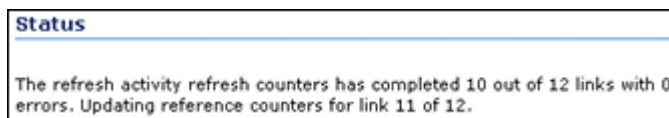
The Managed Links Administration page enables you to perform refresh activities to update the ManagedLinks and LinkReferenceCount tables. You can access the Managed Links Administration page by clicking the **Managed Links Administration** link in the Administration tray.

Managed Links Administration	
Status	
Ready	
Options	
Recompute links	Go
The managed links are recomputed using the pattern engine. Each link in the ManagedLinks table will be parsed and reevaluated according to the pattern rules. Links are not reextracted from the containing documents.	
Refresh links	Go
Refresh the managed links as they are in the ManagedLinks table. Links are determined to be good or broken, but they are not recomputed using the pattern engine.	
Refresh references counts	Go
This option counts the content references as they are in the managed links table. Each content item referenced in the table will be tallied and stored in the reference table.	
Abort refresh activity	Go
Aborts the current refresh activity at the earliest possible moment.	

Element	Description
Status	The status indicates whether the Content Server is performing a refresh activity. When idle, the status is 'Ready'. Otherwise, the status indicates what kind of refresh is being performed, how many links have been processed, and how many errors have been encountered. Refreshing the page (for example, by using F5), refreshes the status message. For an example of refresh status information, refer to " Refresh Activity Status " on page 2-36.
Recompute links option	This refresh activity takes each link in the ManagedLinks table and resubmits it to the patterns engine. The link is evaluated according to the pattern rules and updated in the table. A link may be reclassified as another type of link depending on which patterns have been enabled or disabled. Use this option if the pattern rules have changed.
Refresh links option	This refresh activity takes each link in the ManagedLinks table and attempts to determine if the link is valid. In the special case of Site Studio links, the links are sent to the Site Studio decode method. This determines what nodes and content items are used by the link. It also determines if the link is valid and is indeed a Site Studio link. Use this option when there have been a lot of changes to Site Studio node/section properties. LinkManager can not completely track the changes to 'friendly' Site Studio links. By refreshing or forcing a validation on the links, Link Manager can more accurately determine which links are broken and which are valid.
Refresh references counts option	This refresh activity flushes the LinkReferenceCount table and queries the ManagedLinks table for the content item references. Both the 'recompute' and 'refresh' table activities try to maintain the LinkReferenceCount table. However, on occasion, this table may get out-of-sync and this option, when used on a quiet system, rebuilds this table.
Abort refresh activity option	This option aborts the current refresh activity. Only one refresh activity can be active at any one time.

2.6.7.2 Refresh Activity Status

The following screen provides an example of the status message generated during a refresh activity.



2.6.7.3 Alternative Refresh Methods

In addition to the refresh activities available on the [Managed Links Administration Page](#), there are also alternative methods you can use to update the ManagedLinks and LinkReferenceCount tables:

- Using the Repository Manager, perform a collection rebuild. This process rebuilds the entire search index, and the old index collection is replaced with a new index collection when the rebuild is successfully completed.

If you open the Repository Manager as a standalone application, you can only use this alternate refresh method when the `HasSiteStudio` configuration variable is not enabled. When information is requested from Site Studio and the Repository Manager is in standalone mode, Site Studio is not initialized completely and does not return accurate information. This is not an issue if you open the Repository Manager applet.

- If custom fields have been added while content is in the system, you can use the Configuration Manager to perform the updates because the Rebuild Search Index button is enabled. This rebuilds the entire search index.

2.6.7.4 Recomputing Links in the ManagedLinks Table

To reevaluate the links in the ManagedLinks table:

1. Click the **Managed Links Administration** link in the Administration tray. The Managed Links Administration page is displayed.
2. Click **Go** located next to the Recompute links option. The Status area indicates how many links have been processed and how many errors have been encountered.

Note: Only one refresh activity can be active at any one time. You must wait until the refresh activity completes and the 'Ready' status is displayed before attempting another refresh activity.

2.6.7.5 Refreshing Links in the ManagedLinks Table

To update the links in the ManagedLinks table:

1. Click the **Managed Links Administration** link in the Administration tray. The Managed Links Administration page is displayed.
2. Click **Go** located next to the Refresh links option. The Status area indicates how many links have been processed and how many errors have been encountered.

Note: Only one refresh activity can be active at any one time. You must wait until the refresh activity completes and the 'Ready' status is displayed before attempting another refresh activity.

2.6.7.6 Refreshing the References Counts

To update the links in the LinkReferenceCount table:

1. Click the **Managed Links Administration** link in the Administration tray. The Managed Links Administration page is displayed.
2. Click **Go** located next to the Refresh references counts option. The Status area indicates how many links have been processed and how many errors have been encountered.

Note: Only one refresh activity can be active at any one time. You must wait until the refresh activity completes and the 'Ready' status is displayed before attempting another refresh activity.

2.6.7.7 Aborting the Refresh Activity

To abort the selected refresh activity:

1. Click the **Managed Links Administration** link in the Administration tray. The Managed Links Administration page is displayed.
2. Click **Go** located next to the Abort refresh activity option. The refresh activity stops and the Status area reverts to a 'Ready' status.

Managing Metadata

This chapter discusses the following topics about managing repository metadata with schemas, rules, and profiles:

- ["Using Schemas to Customize Metadata"](#) on page 3-1
- ["Using Profiles to Customize Content Screens"](#) on page 3-12

3.1 Using Schemas to Customize Metadata

This section covers these topics:

- ["About DCLs and Metadata Schemas"](#) on page 3-1
- ["Schema Hierarchical Structure"](#) on page 3-2
- ["Tables"](#) on page 3-3
- ["Views"](#) on page 3-4
- ["Relationships"](#) on page 3-4
- ["Sample Schema-Based Option Lists"](#) on page 3-5
- ["Directory Structure for Schema"](#) on page 3-5
- ["Building a Basic Schema"](#) on page 3-6
- ["Modifying the Publishing Cycle Interval"](#) on page 3-8
- ["Schema Example: Dynamic Option Lists"](#) on page 3-9
- ["Schema Example: Recursive Table for Multiple Trees"](#) on page 3-11

3.1.1 About DCLs and Metadata Schemas

The Information Fields tab of the Configuration Manager enables you to create custom metadata fields with option lists. Additionally, you can structure an information field to make its associated option list dependent on another information field's option list. This organization is called a *dependent choice list* (DCL).

For example, assume there is an option list for a Country information field and another option list for a State information field. The available choices in the State option list would be dependent on which country was selected from the Country option list.

The metadata schema mapping feature is similar to the dependent choice list function in that a hierarchical structure can be created for information field option lists. However, the metadata schema mapping is more versatile. Option list views can be easily adjusted to accommodate localization requirements.

The Content Server metadata schema mapping feature involves the structure that is set up and used to manage information lists and corresponding option lists. A metadata schema defines the option lists (contained in database tables), the available choices (values in the table columns), and dependencies (relationships) between the choices and option lists.

Schemas can be complex to set up. If you have any questions prior to setting up a schema, contact Consulting Services to review your plans.

Note: Because Internet Explorer 5.0 does not support DHTML, any DCLs created using the Content Server schema mapping feature do not display the option list values. This is not an issue with Internet Explorer 6.0.

When using schemas with Content Publisher, wrapping a query page in a table causes an error in Internet Explorer. This is caused by the interaction of schema with the page.

This section covers the following topics:

- ["Schema Hierarchical Structure"](#) on page 3-2
- ["Schema Elements"](#) on page 3-3
- ["Sample Schema-Based Option Lists"](#) on page 3-5
- ["Directory Structure for Schema"](#) on page 3-5

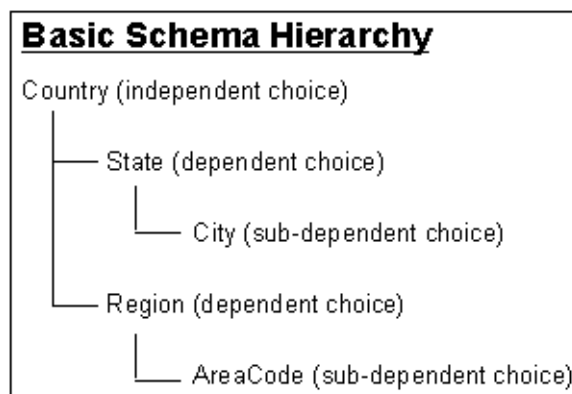
3.1.1.1 Schema Hierarchical Structure

A *schema* is a collection of related schema objects. The term schema also refers to a graphical depiction of the database hierarchy that is created to support the Content Server metadata schema mapping feature. The schema hierarchical structure consists of tables and their respective columns (or fields), views of the data, and the relationships between them.

The Country and State example can be continued to more fully describe a schema hierarchy. Additional information fields (City, Region, and Area Code) are included to illustrate a three-tiered dependency structure.

In [Figure 3-1](#), the sample basic schema hierarchy, one independent field has two dependent fields. Each dependent field also has a dependent field. These dependencies are also referred to as *Parent/Child relationships*.

Figure 3-1 Basic Schema Hierarchy Example



This three-level schema hierarchy produces five distinct metadata fields: **Country**, **State**, **City**, **Region**, and **Area Code**. Each field presents a specific option list to the user.

The contents of the option lists are contingent on whether the information field is dependent or not. Thus, the following option lists result from the sample basic Country/State/Zip schema hierarchy:

- The Country option list is independent and the choices remain constant.
- The choices available in the State option list are variable and depend on which country the user selects from the Country option list.
- The choices available in the City option list are variable and depend on which state the user selects from the State option list.
- The choices available in the Region option list are variable and depend on which country the user selects from the Country option list.
- The choices available in the Area Code option list are variable and depend on which region the user selects from the Region option list

3.1.1.2 Schema Elements

Schemas are comprised of:

- [Tables](#)
- [Views](#)
- [Relationships](#)

3.1.1.2.1 Tables Schema tables are database tables that store the choices displayed in information field (metadata) option lists.

Tables and their columns are created using the Tables tab (see "[Configuration Manager: Tables Tab](#)" on page A-46). Multiple columns can be created in each table but at least two are essential for producing dependent choice lists:

- The common column name used to create the dependency between one option list and a second option list that is dependent on the choice made from the first (for example, Country and State, respectively).
- The column that stores the choices for metadata option lists.

Figure 3–2 Schema Tables Example

Schema Tables				
Country	State	City	Region	AreaCode
countryID	stateID	cityID	regionID	areacodeID
countryName	countryID stateName	stateID cityName	countryID regionName	regionID areacode

Using the geographical example (Country, State, City, Region, Area Code) in the three-tiered schema hierarchy, a table must be created for each *branch* in the schema tree structure. Additionally, the dependent tables (child tables) must contain a column that corresponds to an identical column in the table to which it is subordinate (the

parent table). These corresponding columns are used to create the dependencies between the two tables and are ultimately used to generate the dependent choice lists.

For example, the tables in [Figure 3–3](#) illustrate how the Country and State table columns might be populated. The data in each **name** column provides the choices available on the option lists. The relationship that is created between the corresponding columns in the Country and State tables (countryID) determines what choices are displayed in the State metadata option list.

Figure 3–3 Populated Schema Tables

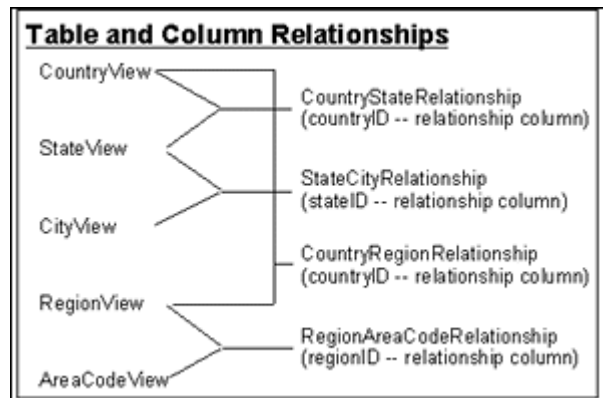
Country		State		
countryID	countryName	countryID	stateID	stateName
1	United States	1	1A	Minnesota
2	Canada	1	1B	Wisconsin
		2	2A	Manitoba
		2	2B	Ontario

3.1.1.2.2 Views A view is a tailored presentation of the corresponding table. Views do not contain data, but they derive data from their tables. Views are used to simplify a database for use and to present data in a different perspective.

A view consists of a list of properties and associated display rules. Each table in the schema must have an associated view. Views provide information about these items:

- Specific columns in the table included in the schema. The selected columns are used to establish the dependencies between tables and also to generate the dependent choice lists.
- Internal and external column names.
- User interface display characteristics.
- Editing and sort order criteria.

3.1.1.2.3 Relationships Relationships define the dependencies between tables and are essential in generating the appropriate dependent choice lists. Each defined relationship establishes the correspondence between parent and child tables. This correspondence is created by specifying the column in the child table that is dependent on the column in the parent table. Thus, the choices displayed using column data from the child table are contingent on the choice made from the corresponding column data from the parent table.

Figure 3–4 Table and Column Relationships

For example, in [Figure 3–4](#), the CountryView (Country table) and the StateView (State table) use the countryID column to create a relationship that generates a parent country list and a child state list. This means that the choices available in the State metadata option list are dependent on the choice made in the Country metadata option list.

3.1.1.3 Sample Schema-Based Option Lists

After the schema tables, views, and relationships are created and properly established, the option lists display the appropriate choices. For example, in [Figure 3–5](#), the Country option list now displays two choices: United States and Canada.

Figure 3–5 Option List Example

Country: [United States] (dropdown menu)

State: [United States, Canada] (dropdown menu)

Because the State metadata field is contingent on the Country field, the State option list contains items based on the choice made in the Country option list. In this case, if the United States choice is selected, the State option list displays Minnesota and Wisconsin as choices. If Canada had been selected, then the State option list would display Ontario and Quebec.

Figure 3–6 Dependent Option List Example

Country: [United States] (dropdown menu)

State: [Minnesota, Wisconsin] (dropdown menu)

3.1.1.4 Directory Structure for Schema

Three subdirectories are associated with the Schema function:

- schema
- schema.work

- schema.old

These are located in the /weblayout/resources directory.

The schema.work directory is usually not listed because it is a temporary directory. When the schema creation process completes, the directory is renamed. If this directory exists it indicates one of the following:

- A large schema rebuild is in progress
- The schema is created, but there is a problem with the schema structure.

Caution: If you are working inside the directory structure to review the Schema files and directories, be sure to close all open applications that are accessing these files. The directories are renamed on completion of processing. However, if external applications, such as text editors, are using these files the schema.work directory cannot be renamed.

3.1.2 Creating Schemas

The Tables, Views, and Relations tabs in the Configuration Manager are used to create the schema structure.

- The Table tab is used to select or create the database tables.
- The Views tab is used to manipulate the views used in the schema.
- The Relations tab is used to manipulate the dependencies.

The Information Fields tab is used to create the metadata fields that are used on Content Server pages. The metadata fields must be correlated to the tables and views to properly display the option lists.

New or modified schemas are automatically updated during each scheduled publishing cycle. Because the default interval between each publishing cycle is set to four hours, you will not see immediate results for new or modified schemas. You can, however, adjust the interval between each publishing cycle by changing the default value of a configuration variable. For more information, see ["Modifying the Publishing Cycle Interval"](#) on page 3-8.

This section covers the following topics:

- ["Building a Basic Schema"](#) on page 3-6
- ["Modifying the Publishing Cycle Interval"](#) on page 3-8

3.1.2.1 Building a Basic Schema

This section provides an overview of a simple sequence using the applicable Configuration Manager tabs to create a schema structure. See ["Schema Interface Screens"](#) on page A-45 for representations of the screens used to create a schema.

This section covers the following topics:

- ["Selecting Tables for the Schema"](#) on page 3-7
- ["Creating the Schema View"](#) on page 3-7
- ["Creating the Schema Relationships"](#) on page 3-7
- ["Adding Metadata Fields"](#) on page 3-8
- ["Enabling the Schema"](#) on page 3-8

3.1.2.1.1 Selecting Tables for the Schema To select tables for the schema:

1. Select the ["Configuration Manager: Tables Tab"](#) on page A-46).
2. To add tables to the schema, select **Add Tables** and choose the tables to add to the schema from the [Select Table Screen](#). If you are creating a new table, select **Create Table**.

Important: While you can use core Content Server system tables such as Revisions, Alias, Documents, and Users you cannot edit those tables (remove columns, alter column length, etc.)

3. After selecting the tables to use, the [Create/Edit Table 'name' Screen](#) is displayed with Table Column names filled in.
4. Select the column that will be used as a primary key to establish a dependency and select **Edit**. The [Add/Edit Column Screen](#) is displayed.
5. Check the box labeled Primary Key and click **OK**. Select **Add Recommended** to add recommended columns to the table.

Repeat these steps for all tables that will be used together in the schema. When finished, click **OK**.

3.1.2.1.2 Creating the Schema View To create the schema view:

1. Select the [Configuration Manager: Views Tab](#). The names of configured views are displayed.
2. To create a new view, click **Add** to open the [Add View Screen: Select Table](#) page.
3. Select the table to use in the view, and click **Next**. The [Add View Screen: Select Columns](#) page is displayed.
4. Choose the columns to include in the view, and click **Finish**. The [Add/Edit View Screens](#) is displayed.
5. Select a name for the view, and add information for the description. Choose the internal column (name in the database) to use in the view, and choose the visible column that is displayed to end users. You can also set a display expression, which determines how the name in the option list will be displayed. When done, click **OK**.
6. Repeat these steps for all tables to be included in the view.

3.1.2.1.3 Creating the Schema Relationships To create the schema relationships:

1. After the tables and associated views are completed, select the [Configuration Manager: Relations Tab](#) to establish the dependencies between tables and columns. A list of the currently existing schema relationships is displayed.
2. Click **Add** to set up a new schema relation. The [Add/Edit Relationship Screen](#) is displayed.
3. Enter the name of the relationship (for example, Country_State to indicate the relationship between the Country and the State tables). In the Parent Info box, select the table where the parent information resides (for example, the Country table) and the column that will be used to establish the dependencies (for example, the Country ID). Do the same for the Child Info field (for example, selecting State as the table name and countryID as the relationship).

4. Click **OK** when done. The new relationship is now displayed on the **Relations** list.

3.1.2.1.4 Adding Metadata Fields The final phase in schema creation is to set up the metadata fields to use the columns and to configure them to use the Views and Relations created previously. See "[Adding a Metadata Field](#)" on page 2-8 and "[Defining an Option List](#)" on page 2-9 for an overview of this procedure.

3.1.2.1.5 Enabling the Schema After the configuration of the schema, the views, and the relationships is completed, you must update your database design (a selection key on the Configuration Manager screen) and you should click **Options, Publish Schema** from the Configuration Manager menu.

Republishing (updating) of schema takes place automatically based on these things:

- Existence of the data/schema/publishlock/publish.dat file.
- The internal schedule of automatic publishing times. See "[Modifying the Publishing Cycle Interval](#)" on page 3-8 for details.
- How long it took to publish schema last time.

Do not select **Options, Publish Schema** unless you need to see the new Content Type quickly and do not mind the load on the system that may occur when large option lists are republished.

3.1.2.2 Modifying the Publishing Cycle Interval

New or modified schemas are automatically updated during the automatic schema publishing cycle. However, by default, the interval between publishing cycles is set to four hours. This means that new schemas or changes to existing schemas will not be seen in the corresponding menu lists until the completion of the next publishing cycle. However, you can adjust the publishing cycle interval by changing the value of the SchemaPublishInterval configuration variable.

To change the interval of schema publishing cycles:

1. In a text editor, open the IntradocDir/config/config.cfg file.
2. Add the following configuration variable and value:

```
SchemaPublishInterval=300
```

The value is specified in seconds. Therefore, in this configuration example, the option lists will be republished every 300 seconds (i.e., 5 minutes).

Note: Depending on the number of option lists in addition to the size and complexity of each list, automatically republishing (updating) your schemas frequently may have a significant impact on your system's performance.

3. Save and close the config.cfg file.
4. Restart Content Server to apply the changes.

Note: The queries for schema publishing are cached up to five minutes. Therefore, publishing more frequently will not retrieve new values until the current cache expires.

If a new value is added to a metadata field, that value will not be displayed on the content item's Content Information page until the next publishing cycle is complete.

If one content item is checked with a unique value in a dynamic option list and a second item is checked in with the same value but using a different case, the value is treated as one value in the option list. The case used is dependent on the database sorting scheme.

For more information about creating dynamic option lists, see ["Schema Example: Dynamic Option Lists"](#) on page 3-9.

3.1.3 Schema Example: Dynamic Option Lists

Creating a *dynamic* option list enables users to add values to metadata option lists. For example, if a value already exists in an option list, users can select the value from the list. However, if it's a new value, users can enter the value into a text field and it becomes available as an option following the next publishing cycle. For more information about automatic publishing cycles and their intervals, see ["Modifying the Publishing Cycle Interval"](#) on page 3-8.

To create a dynamic option list, first create a view into the table in the database. The option list values are pulled directly from the metadata columns where they are stored. As content items are checked in, revised, and removed, the option list values change or are updated accordingly.

The following is an example of creating a dynamic option list:

1. Click the **Admin Applets** link in the Administration Tray.
The Administration page is displayed.
2. Click the **Configuration Manager** icon.
The [Configuration Manager: Information Field Tab](#) is displayed.
3. Click **Add** on the Information Fields tab.
The [Add Metadata Field Name Screen](#) is displayed.
4. Enter the name of the metadata field that has the dynamic option list. For example, TestMetadata.
5. Click **OK**.
The [Add/Edit Metadata Field Screen](#) for TestMetadata is displayed.
6. Complete the fields as desired but do not select the Enable Option List check box.
7. Click **OK**.
The screen is closed and the metadata field is added to the Field Info list on the [Configuration Manager: Information Field Tab](#).
8. Click **Update Database Design**.
The [Update Database Design Screen](#) is displayed and informs you that the TestMetadata will be added.

9. Click **OK**.
10. Open the [Configuration Manager: Views Tab](#) and click **Add**.
The [Add View Screen: Select Table](#) screen is displayed.
11. Click **Add Table**.
The [Select Table Screen](#) is displayed.
12. Select the **DocMeta** table.
13. Click **OK**.
The Select Table screen is closed and the DocMeta table is added to the Tables list on the [Add View Screen: Select Table](#) screen.
14. Click **Next**.
The [Add View Screen: Select Columns](#) screen with column names is displayed.
15. Select the column you want to use to create the option list for TestMetadata.
16. Click **Finish**.
The [Add/Edit View Screens](#) page is displayed.
17. Enter a view name. For example, `TestMetadata_view`.
18. Click **OK**.
19. Open the **Information Fields** tab on the [Configuration Manager: Information Field Tab](#) and select TestMetadata.
20. Click **Edit**.
The [Add/Edit Metadata Field Screen](#) for TestMetadata is displayed.
21. Select the **Enable Option List** check box.
22. Click **Configure**.
The [Add/Edit Custom Info Field: Configure Option List](#) for TestMetadata is displayed.
23. Select **Edit and Select List** from the Option List Type option list.
24. Select the **Use View** radio button and select a view from the option list. For example, `TestMetadata_view`.
25. Click **OK**.
The [Add/Edit Custom Info Field: Configure Option List](#) is closed.
26. Click **OK**.
The [Add/Edit Metadata Field Screen](#) is closed.
27. Select **Publish schema** from the Options menu on the [Configuration Manager: Information Field Tab](#).

You can test this option list by checking in a document and entering a value into the new dynamic metadata field. Initially, the option list is empty because no documents have been checked in that contain data in the TestMetadata field. However, as documents are checked in with values entered in TestMetadata, the option list will include them.

3.1.4 Schema Example: Recursive Table for Multiple Trees

Creating a recursive table enables you to hold the data for multiple schema trees.

1. Click the **Admin Applets** link in the Administration Tray.
The Administration page is displayed.
2. Click the **Configuration Manager** icon.
The [Configuration Manager Application Page](#) is displayed.
3. Create a database table with two columns (`id`, `parent`):
 - a. Open the Tables tab and click **Create table**.
The [Create/Edit Table 'name' Screen](#) is displayed.
 - b. Enter the table name. For example, `TreeTest`.
 - c. In the Columns pane, click **Add**.
The [Add/Edit Column Screen](#) is displayed.
 - d. Enter the first column name (`id`) and its length. Click **OK**.
 - e. Enter the second column name (`parent`) and its length. Click **OK**.
 - f. Click **OK** to create the table.
4. Create a view on the table that includes both columns:
 - a. Open the Views tab and click **Add**.
The [Add View Screen: Select Table](#) is displayed.
 - b. In the Tables pane, select `TreeTest` and click **Next**.
 - c. In the Columns pane, select the `id` and `parent` check boxes and click **Finish**.
The [Add/Edit View Screens](#) is displayed.
 - d. Enter the view name. For example, `TreeTestView`.
Optional: add display, options, and security configurations as applicable. For more detailed information, refer to "[Add/Edit View Screens](#)" on page A-50.
 - e. Click **OK** to create the view.
5. Create a relationship on the view:
 - a. Open The Relations tab and click **Add**.
The [Add/Edit Relationship Screen](#) is displayed.
 - b. Enter the relationship name. For example, `TreeTestRecursive`.
 - c. From the Parent Info table list, select `TreeTest` and in the corresponding column list, select `id`.
 - d. From the Child Info table list, select `TreeTest` and in the corresponding column list, select `parent`.
 - e. Click **OK** to create the relationship.
6. Open the Information Fields tab and click **Add**.
The [Add Metadata Field Name Screen](#) is displayed.
7. Enter the custom metadata field's name and click **OK**.
The [Add/Edit Metadata Field Screen](#) is displayed.

8. Select the Enable Option List check box and click **Configure**.
The [Add/Edit Custom Info Field: Configure Option List](#) screen is displayed.
9. Select the Use Tree radio button and click **Edit Definition**.
The [Edit Tree Definition Screen](#) is displayed.
10. In the Building level pane: Select view for level1 list, select **TreeTestView**.
TreeTestView is entered as Level 1 in the Tree Definition pane.
11. In the Building level pane: Select relationship between the 1st and 2nd level list, select **TreeTestRecursive**.
TreeTestRecursive is added under TreeTestView in the Tree Definition pane.
12. In the Building level pane: Select view for level 2 list, select **TreeTestView (recursive to level 1)**.
TreeTestView (recursive to level 1) is entered as Level 2 in the Tree Definition pane and the Select root button is added.
13. Click the **Select root** button.
The Select Tree Root dialog is displayed.

3.2 Using Profiles to Customize Content Screens

This chapter covers these topics:

- ["About Content Profiles"](#) on page 3-13
- ["Content Profile Rules"](#) on page 3-14
- ["Content Profiles and Metadata Organization"](#) on page 3-20
- ["Content Profile Triggers"](#) on page 3-36
- ["Content Profile Examples"](#) on page 3-40
- ["Creating a New Rule"](#) on page 3-28
- ["Editing an Existing Rule"](#) on page 3-29
- ["Deleting an Existing Rule"](#) on page 3-29
- ["Creating a New Global Rule"](#) on page 3-29
- ["Editing an Existing Global Rule"](#) on page 3-29
- ["Deleting an Existing Global Rule"](#) on page 3-29
- ["Adding Metadata Fields to a Rule"](#) on page 3-30
- ["Grouping Metadata Fields"](#) on page 3-30
- ["Adding a Header to a Metadata Field Group"](#) on page 3-30
- ["Defining a New Activation Condition"](#) on page 3-31
- ["Editing an Existing Activation Condition"](#) on page 3-31
- ["Deleting an Existing Activation Condition"](#) on page 3-31
- ["Defining the Attributes of a Metadata Field"](#) on page 3-32
- ["Editing the Attributes of a Metadata Field"](#) on page 3-34
- ["Setting the Display of a Required Field"](#) on page 3-35

- ["Selecting a Profile Trigger Field"](#) on page 3-36
- ["Disabling a Profile Trigger Field"](#) on page 3-37
- ["Creating and Defining a New Profile"](#) on page 3-37
- ["Editing an Existing Profile"](#) on page 3-37
- ["Deleting an Existing Profile"](#) on page 3-38
- ["Managing the Rules in a Profile"](#) on page 3-38
- ["Previewing a Profile"](#) on page 3-38
- ["Troubleshooting a Previewed Profile"](#) on page 3-39
- ["Department-Based Content Profile"](#) on page 3-41
- ["Black-Hole Check In Profile for Resumes"](#) on page 3-45
- ["Global Rule to Restrict Content Check-In Based on User Role"](#) on page 3-52
- ["Global Rule to Restrict Content Type Metadata Changes"](#) on page 3-54

3.2.1 About Content Profiles

Administrators can use Content Profiles to configure Check In, Update, Content Information, and Search pages, so end users see only directly relevant metadata fields, thereby rendering basic pages simpler to use.

Content profiles do not create or modify any content server tables. They are simply used as a type of filter for what information will be displayed. All information for the Content Profile is stored on the file system in the *IntradocDir/data/profiles/document/* directory.

This section covers the following topics:

- ["Content Profile Elements"](#) on page 3-13
- ["Profile Links"](#) on page 3-14

3.2.1.1 Content Profile Elements

A profile is composed of rules and a trigger value, which are set up on the Profiles and Rules tabs of the Configuration Manager screen. Administrators can create multiple content profiles and all are available to the end user. For each profile, the end user has a distinct Check In page and Search page available. Although all profiles are visible to all users, each user can configure their user interface to hide or display links to specified profiles. See ["Profile Links"](#) on page 3-14.

Note: Documents cannot be associated with more than one profile in the system.

Content profiles consist of:

- [Rules](#)
- [Triggers](#)

3.2.1.1.1 Rules A rule consists of a set of metadata fields that determine whether fields are editable, required, hidden, excluded, or read-only based on their criteria when specific conditions are met. You can change a rule's behavior based on an input, or *activation condition*. A rule can be evaluated for every profile (*global*), or it can be

evaluated for specific profiles. For ease of use, you can use rules to group metadata fields under an optional header.

For example, a profile's rules can determine the user type and, depending on the document type being checked in, ensure that only specific metadata fields are displayed. All other fields can be hidden.

Note: Rules must be established before a profile is created. See "[Profile Rules](#)" on page 3-14 for details.

3.2.1.1.2 Triggers A *trigger field* is a metadata field that is defined on the [Configuration Manager: Profiles Tab](#). If a document matches a *trigger value* for a profile, then that profile is evaluated for the document. There can be an unlimited number of profiles, but only one trigger value per profile.

Note: Although you create rules before you create triggers and profiles, it is necessary to know what your trigger will be prior to creating rules.

3.2.1.2 Profile Links

When a profile is enabled on the Edit Content Profile Links page, the profile is available from the Search and New Check In menus on the toolbar. If no profiles are enabled for display, the Search and New Check In menus become direct links to the Advanced Search page and standard Content Check In Form, respectively.

After a profile has been created, it appears in the Search and New Check In menus on the toolbar when you refresh your browser session. By default, all profiles are listed as options under both menus. However, not every user will be authorized to use all of the listed profiles. On the Edit Content Profile Links page, users can decide which profiles to display by selecting or clearing applicable check boxes.

For example, a marketing employee may not have the necessary privileges to use an accounting profile. In this case, the user can clear the check boxes for the accounting profile and it does not display under Search and New Check In menus. For more information about the user interface in general and the content profile links in particular, see the *Oracle Fusion Middleware User's Guide for Content Server*.

3.2.2 Content Profile Rules

This section covers these topics:

- "[Profile Rules](#)" on page 3-14
- "[Global Rules](#)" on page 3-15
- "[Metadata Fields and Attributes in Rules](#)" on page 3-15
- "[Activation Conditions in Rules](#)" on page 3-16
- "[Restricted Lists to Modify Defined Option Lists](#)" on page 3-17

3.2.2.1 Profile Rules

A profile consists of one or more rules and a trigger value (see "[Content Profile Elements](#)" on page 3-13). The rules determine how metadata fields are displayed on the Check In, Update, Content Information, and Search pages and if a rule will be used (depending on how it is evaluated). Each rule consists of the following:

- A set of metadata fields. See "[Metadata Fields and Attributes in Rules](#)" on page 3-15.
- An optional activation condition. See "[Activation Conditions in Rules](#)" on page 3-16.
- An option that indicates if it is a global rule and has a specified priority.
- An option that indicates if the metadata fields in the rule can be relocated by grouping and if an optional header is used.

Note: Although you create rules before you create triggers and profiles, it is necessary to know what your trigger will be prior to creating rules.

3.2.2.2 Global Rules

Global rules are always 'on' (always evaluated). A global rule automatically affects the metadata fields displayed on the Check In, Update, Content Information, and Search pages even if it is not included in a profile or even if no profiles have been created. It is not necessary for a profile to exist in the system for any defined global rules to take effect and be applied to events, actions, or workflow states. However, you cannot preview the effects of a global rule unless it is associated with a profile.

Global rules are evaluated first and can be superseded by specific profile rules. You can set the priority for the global rule, though, and increase its precedence. It may then have a higher priority than specific rules and produce different profile results. You can view those results by previewing the profile and seeing the consequence of rule selection. See "[Preview Profile Screen](#)" on page A-65 for more details about previewing profiles and viewing how rules affect the profile.

A global rule obeys the following guidelines:

- It is always on, is independent of a profile, and is always evaluated.
- For documents and searches with profiles, the global rule is evaluated first. The specific profile rules are evaluated after the global rule. This means that global rules have a lower priority with respect to profile rules.
- Global rules have a priority number, see "[Add/Edit Rule Screens](#)" on page A-68. The priority determines the order in which the rule is evaluated. Lower priority rules are executed earlier and rules with higher priority can override changes made by rules with lower priority.

3.2.2.3 Metadata Fields and Attributes in Rules

Each metadata field in a rule has the following attributes:

- Field position (required):
This attribute offers three general placement choices: top, middle, and bottom. The selected option adjusts the general placement order of the metadata field. This attribute is assigned using the [Add Rule Field Screen](#).
- Display type (required):
The value of this attribute can be *edit*, *Info Only*, *hidden*, *excluded*, or *required*. The selected option determines how the metadata field is displayed on the Check In and Search pages. This attribute is assigned using the [Add/Edit Rule Field 'name' Screen](#).
- Required message (optional unless the display type is required):

If the metadata field is designated as required, a required message must be specified. This attribute is specified using the [Add/Edit Rule Field 'name' Screen](#).

- **Default value (optional):**

This attribute displays a default value for the metadata field. It is activated using the [Add/Edit Rule Field 'name' Screen](#) and defined using the Edit Default Value screen tabs (see information "[Edit Default Value: Conditions Tab](#)" on page A-82 through "[Edit Default Value: Custom Tab](#)" on page A-85).
- **Derived value (optional):**

This attribute enables the metadata field to be set to a specified value on update or check in. It is activated using the [Add/Edit Rule Field 'name' Screen](#) and defined using the Edit Derived Value screen tabs (see information "[Edit Derived Value: Conditions Tab](#)" on page A-85 through "[Edit Derived Value: Custom Tab](#)" on page A-86).
- **Restricted list (optional):**

On presentation, this attribute allows the option list metadata field to be restricted to either a specific list of values or to a filtered list of values. It is activated using the [Add/Edit Rule Field 'name' Screen](#) and defined using the [Edit Restricted List Screen](#). See "[Restricted Lists to Modify Defined Option Lists](#)" on page 3-17 for details.

3.2.2.4 Activation Conditions in Rules

An activation condition allows you to change the profile behavior based on various different inputs. For example, a rule may not be active for the search page. For a contributor, certain fields may be hidden or overridden on check in. Also, because profiles are activated during any check in process, distinctions are made between a browser check in and a batch load check in.

Profiles can be previewed to assess the validity of the activation conditions that may be included in the profile rules. The previewing screen allows you to check the existing profile as well as perform what-if scenarios by changing activation condition choices and evaluating the results. See "[Preview Profile Screen](#)" on page A-65 for details. The documentation for the Edit Activation Condition screen provides more detailed information about activation condition choices and how they are created and defined (see "[Edit Activation Condition Screen Tabs](#)" on page A-72).

An activation condition for a rule can be based on:

- **System event**

System event-based activation condition choices include on request events, on submit events, and on import events.
- **User action**

User action-based activation condition choices include check in new, check in selected, content information, content update, and search.
- **Workflow state**

State-based activation conditions are contingent on whether the content item is in workflow or not.
- **Document type**

Activation condition clauses can use components based on document metadata fields.

- User type

Activation condition clauses can use components based on user metadata fields.

Caution: Be very careful when using activation conditions that include one or more combinations of condition choices. Not all combinations of activation condition choices are valid and some may be mutually exclusive. For example, if an activation condition requires the event to be an import and the action to be a document information page request, the activation will never be true and the rule will never be active.

3.2.2.5 Restricted Lists to Modify Defined Option Lists

The restricted list is an optional attribute that can be defined for a metadata field in a rule. Two methods can be used to modify the user interface list for metadata fields defined as option lists.

- Specifying a fixed list:

Using a restricted list allows you to specify an explicit set of values that override the actual master list for the metadata field that was defined as an option list. Only those items already in the master option list are displayed in the user interface list.

- Using regular expression evaluation:

You can also choose to use regular expressions to evaluate the option list. The list can include wild cards and other special characters for string pattern matching and evaluation processes. The items displayed in the user interface list are those values that satisfy the regular expression.

Note: This section provides only a brief overview of using regular expression evaluation to generate modified user interface drop-downs for option list metadata fields. Regular expressions are currently supported with restricted lists. Because of the complexity of regular expressions, system administrators should be familiar with regular expressions, building patterns, and implementing regular expression methods. If not, use Oracle consulting services to assist you in defining restricted lists.

This section covers the following topics:

- ["Regular Expressions"](#) on page 3-17
- ["Commonly Used Elements of Java Regular Expressions"](#) on page 3-18
- ["Examples of Defining Restricted Lists"](#) on page 3-18

3.2.2.5.1 Regular Expressions Regular expressions are ideal for text manipulation and describe the format of strings. In its simplest form, a regular expression is the text to match.

For example, the regular expression 'ABC' matches the string ABC but not the string DEF. Wild card characters, such as the asterisk (*), can be used to match more strings. For example, the regular expression 'A*B' will match the strings B, AB, AAB, AAAB, etc. The asterisk (*) is a quantifier on the preceding character.

3.2.2.5.2 Commonly Used Elements of Java Regular Expressions The following table lists the most commonly used modifiers, metacharacters, and special characters used in building patterns for regular expression evaluation.

Modifiers:

Element	Definition
g	Global pattern matching.
i	Case-insensitive pattern matching.
m	Allows the special characters ^ and \$ to match multiple times within a string.
s	Allows the special character . to match newlines.
x	Ignores whitespace within a pattern.

Metacharacters:

Element	Definition
\s	Matches whitespace (including tabs and newlines).
\S	Matches anything that is not whitespace.
\b	Matches only a word boundary.
\B	Matches only nonword boundaries.
\d	Matches digits 0 through 9.
\D	Matches only nonnumeric characters.
\w	Matches only letters, numbers, or underscores.
\W	Matches only characters that are not letters, numbers, or underscores.
\A	Matches the beginning of a string only.
\Z	Matches the end of a string only.

Special Characters:

Element	Definition
*	Matches zero or more occurrences of the preceding character.
+	Matches one or more occurrences of the preceding character.
?	Matches zero or one occurrence of any character.
.	Matches any one character, except newlines.
^	Matches the beginning of a string, like the \A metacharacter.
\$	Matches the end of a string, like the \Z metacharacter.
	Imposes either, or.

3.2.2.5.3 Examples of Defining Restricted Lists The examples included in this section illustrate the results displayed in the user interface lists depending on how the [Edit Restricted List Screen](#) is completed. The restricted lists being defined use a metadata field defined to be an option list. Its master list values are the U.S. states in alphabetical order. The two dependencies include:

- The items or expression entered into the text pane.

- The Allow Java Regular Expressions check box (selected or unselected).

Example 1:

In this example, text values are entered into the text pane and the Allow Java Regular Expressions check box is not selected. In this case, the options 'NoState' and 'Carolina' are not included in the resulting list because they are not full names of states. Also notice that the order is maintained as typed into the text area.

If the following values are entered into the text pane:

- Alabama
- Minnesota
- NoState
- Utah
- Carolina

The results displayed in the user interface list are:

- Alabama
- Minnesota
- Utah

Example 2:

In this example, the same text values are entered into the text pane as in Example 1. However, the Allow Java Regular Expressions check box is selected.

If the following values are entered into the text pane:

- Alabama
- Minnesota
- NoState
- Utah
- Carolina

The results displayed in the user interface list are:

- Alabama
- Minnesota
- Utah
- North Carolina
- South Carolina

In this case, both 'North Carolina' and 'South Carolina' are included in the resulting list because they match the regular expression 'Carolina'.

Example 3:

In this example, the Allow Java Regular Expressions check box is selected and instead of entering similar text values (as in the previous examples) the ^ special character is used with alphabet characters.

In this case, there are two regular expressions. The first expression specifies choosing everything in the master list beginning with C and the second expression specifies

choosing everything beginning with AI. Notice that the results order is dictated by how the list was entered in the text pane.

If the following values are entered into the text pane:

- ^C
- ^AI

Then the results displayed in the user interface list are:

- California
- Colorado
- Connecticut
- Alabama
- Alaska

Example 4:

In this example, the same values are entered into the text pane as in Example 3. However, both values are entered on the same line and separated with the pipe (|) special character which is evaluated as 'or'. In this case, the expression retains the values in order because the list is filtered exactly once for values that begin with either AI or C.

If the following values are entered into the text pane:

- ^C | ^AI

The following results are displayed in the user interface list:

- Alabama
- Alaska
- California
- Colorado
- Connecticut

3.2.3 Content Profiles and Metadata Organization

This section covers these topics:

- ["Using Rules to Group Metadata Fields"](#) on page 3-20
- ["Display Results of Reordered Metadata Fields"](#) on page 3-23

3.2.3.1 Using Rules to Group Metadata Fields

Metadata fields that display on the Check In, Update, Content Information, and Search pages can be added to a rule as a group and, optionally, the group can be labeled with an appropriate header. Editing the rule also lets you rearrange individual metadata fields within the group. The fields are displayed on the Check In, Update, Content Information, and Search pages according to how they are arranged in the group.

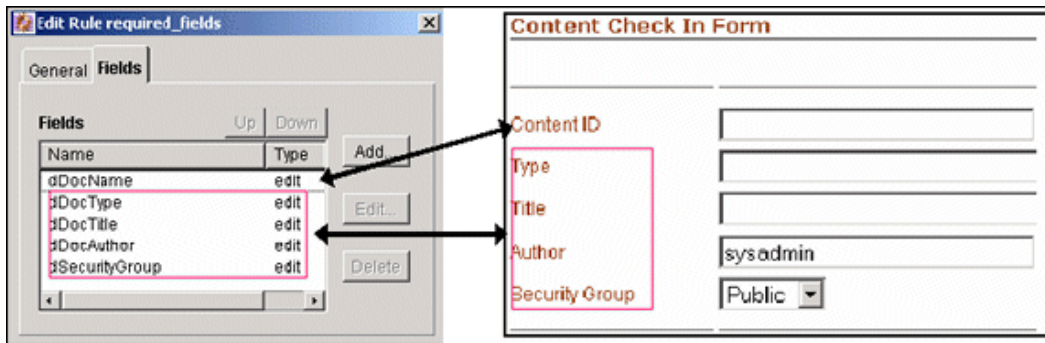
You establish metadata groups by selecting the Is group check box on the [Add/Edit Rule Screens](#). Individual metadata fields are added to the group using the Fields Tab. Use the Up and Down buttons on this screen to rearrange the fields.

This section covers the following topics:

- "Reorganizing Metadata Fields" on page 3-21
- "Metadata Field Conflicts Between Groups" on page 3-21
- "Resolution Rules" on page 3-22

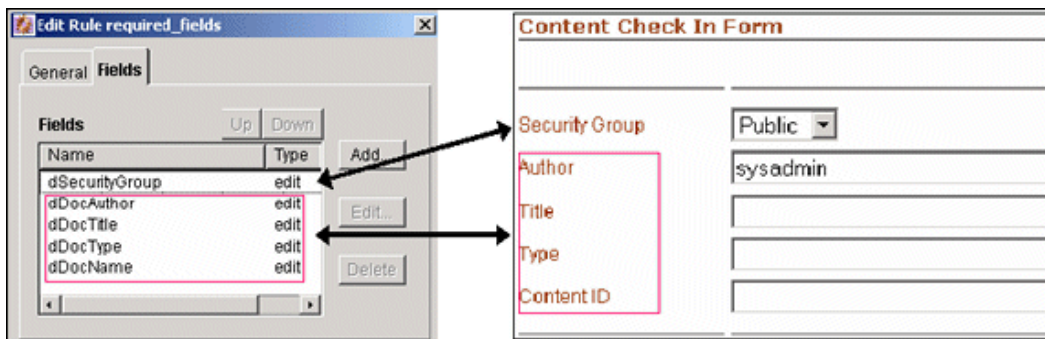
3.2.3.1.1 Reorganizing Metadata Fields You can create a rule that groups specific metadata fields and determines how they are listed on the Check In, Update, Content Information, and Search pages. For example, [Figure 3-7](#) shows a rule on the left that results in the metadata field list on the Check In page on the right. In this example, Content ID is the group leader because it is the first element in the group list. The metadata fields included after Content ID are the group associates.

Figure 3-7 Metadata Fields Generated from Rule



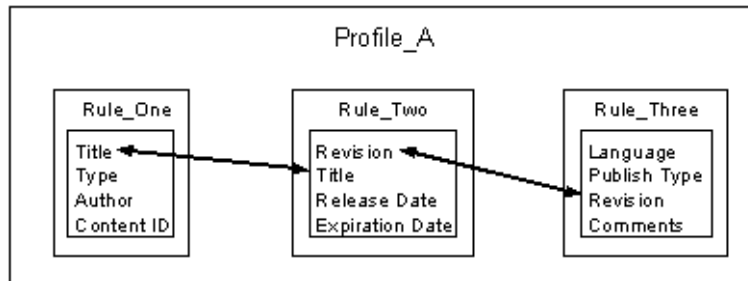
[Figure 3-8](#) shows the same rule but the metadata fields in the group have been rearranged using the Up and Down buttons. This reorganization results in a different listing of the same metadata fields on the Check In page. In this case, Security Group becomes the group leader and the other fields are now the group associates.

Figure 3-8 Reorganized Metadata Fields



3.2.3.1.2 Metadata Field Conflicts Between Groups It is possible that one or more metadata fields in a group could belong to groups in other rules that use grouped metadata fields. This could create conflicts about how the metadata fields are displayed on the Check In, Update, Content Information, and Search pages.

In [Figure 3-9](#), a single profile contains three rules that have grouped metadata fields. Each group has one field that belongs to another group. In this situation, the system uses resolution rules to reconcile any conflicts. See "Resolution Rules" on page 3-22 for details.

Figure 3–9 Profile with Rules Grouping Metadata Fields

Caution: System evaluation and implementation of additional profile and global rules that contain one or more of these metadata fields can cause grouping conflicts. Depending on the priorities or precedences of the rules within a profile, some rules executed later may override earlier rules. This, in turn, can affect how grouped metadata fields are resolved. For more information about how rules are evaluated, refer to "Profile Rules" on page 3-14 and "Global Rules" on page 3-15.

3.2.3.1.3 Resolution Rules The following rules are used sequentially to resolve metadata grouping conflicts:

1. The first element in the list is the group leader.
2. All elements following the first element are the group associates.
3. If the group leader is not a group leader in another group listing, then assign any group associates to the group, below the group leader.
4. If a group leader is a group associate in a prior group listing, then the new group listing is merged with the prior group listing as follows:
 - a. Find the main group leader (the group leader in the prior group).
 - b. Insert the new group associates after the group leader in the main group leader's group associates list.
5. Make sure that no group associate has more than one group leader. If so, remove the associate from the prior group leader's list.
6. If a grouping has a group associate that is a group leader in another later grouping, then this rule is invalid, an error is reported, and the rule is not evaluated. (If this were to be allowed, the result would be a non-group leader (a group associate) being promoted to a group leader.)

Example 1:

1. **IF:** A,B,C is a metadata group
WHERE: A is the group leader and B and C are group associates to A
2. **AND:** B,D,E is another metadata group
WHERE: B is the group leader and D and E are group associates to B
3. **RESULT:** A,B,D,E,C

Example 2:

1. **IF:** A,B,C is a metadata group
WHERE: A is the group leader and B and C are group associates to A
 2. **AND:** A,D,E is another metadata group
WHERE: A is the group leader and D and E are group associates to A
 3. **RESULT:** A,D,E,B,C
- Example 3:

Example 3:

1. **IF:** A,B,C is a metadata group
WHERE: A is the group leader and B and C are group associates to A
2. **AND:** C,B,D is another metadata group
WHERE: C is the group leader and B and D are group associates to C
3. **RESULT:** A,C,B,D

Example 4:

1. **IF:** A,B is a metadata group
WHERE: A is the group leader and B is a group associate to A
2. **AND:** B,A,C is another metadata group
WHERE: B is the group leader and A and C are group associates to B
3. **RESULT:** Theoretically, this situation can be resolved to B,A,C but this makes the A,B grouping irrelevant. Therefore, to avoid confusion for other groupings, this is treated as an error case.

Example 5:

1. **IF:** A,B,C is a metadata group
WHERE: A is the group leader and B and C are group associates to A
2. **AND:** D,A,E is another metadata group
WHERE: D is the group leader and A and E are group associates to D
3. **RESULT:** Error-it is impossible to resolve this grouping conflict.

3.2.3.2 Display Results of Reordered Metadata Fields

Content profiles can be used to reorder metadata fields on the Check In, Update, Content Information, and Search pages. Custom metadata fields as well as system-specific information fields can be reordered to suit your particular needs. This section provides more explicit information about the display results of reordered custom and system information fields on the Check In, Update, Content Information, and Search pages.

You can position metadata fields, as described in the following sections:

- ["General Sequence of Grouped Metadata Fields on Content Server Pages"](#) on page 3-24
- ["Positioning Metadata Fields Within a Group"](#) on page 3-24

- ["Display Results of Grouped Metadata Fields on the Check In, Update, and Check In Selected Pages"](#) on page 3-26
- ["Display Results of Grouped Metadata Fields on the Search Page"](#) on page 3-26
- ["Display Results of Grouped Metadata Fields on the Content Information Page"](#) on page 3-27
- ["Display Results of Grouped Metadata Fields on the Folder Information Page"](#) on page 3-27

You can move metadata fields, as described in the following sections:

- ["Moving System Metadata Fields to a Position Below the Primary File Field"](#) on page 3-27
- ["Moving Custom Metadata Fields to a Position Above the Primary File Field"](#) on page 3-27

3.2.3.2.1 General Sequence of Grouped Metadata Fields on Content Server Pages

The positioning of grouped system and custom metadata fields on Content Server pages is determined by the priority of the first metadata field in the group. When you add a custom metadata field to the system, you establish its positioning sequence (field order).

You add custom metadata fields using the [Configuration Manager: Information Field Tab](#) and assign the sequence number in the Order field on the [Add/Edit Metadata Field Screen](#).

When a custom metadata field is the first field in a group, that group is positioned on the page according to the field order assigned to the custom metadata field. When a system metadata field is the first field in a group, that group is positioned according to their established precedence.

Depending on the specific Content Server page, additional system metadata fields may be included in the general display order. Or, some system metadata fields are not included. For example, the Search page displays the Release Date and Expiration Date system metadata fields but excludes Revision.

By default, the general order for system metadata fields is as follows:

- Content ID (dDocName)
- Type (dDocType)
- Title (dDocTitle)
- Author (dDocAuthor)
- Security Group (dSecurityGroup)
- Account (dDocAccount)
- Revision (dRevLabel)

Note: Generally, a group with a system metadata field as the first field are displayed in their default order. For example, if Author is the first field in a group of custom metadata fields, that group is displayed below any group that contains Content ID, Type, or Title as its first field.

3.2.3.2.2 Positioning Metadata Fields Within a Group

The section [Using Rules to Group Metadata Fields](#), describes how you can define rules to conveniently group custom and system metadata fields on the Check In, Update, Content Information, and Search pages. In addition to grouping your metadata fields, you can order them to suit your application.

There are two options available to order metadata fields:

■ **Option 1: Field Position**

You can use the Field Position list that provides three positioning options: top, middle, and bottom. This option is available when you are adding metadata fields to rules using the [Add Rule Field Screen](#). This option works in a relative manner. For example, you might add the following metadata fields:

- xRegion (Top position)
- xSubDept (Bottom position)

If you add xDept with a field position of Middle, it is added as follows:

- xRegion (Top position)
- xDept (Middle position)
- xSubDept (Bottom position)

If you then add xContinent with a field position of Top, it is added as follows:

- xRegion (Top position)
- xContinent (Top position)
- xDept (Middle position)
- xSubDept (Bottom position)

Similarly, if you add xManager with a field position of Middle, it is added as follows:

- xRegion (Top position)
- xContinent (Top position)
- xDept (Middle position)
- xManager (Middle position)
- xSubDept (Bottom position)

For more information about the Field Position option, refer to the Field Position list feature on the "[Add Rule Field Screen](#)" on page A-78.

Note: This ordering option produces these display results on the Check In, Update, Content Information, and Search pages if you have grouped the fields. That is, when you add the fields to a rule, you must select the Is Group check box on the [Add/Edit Rule Screens](#).

■ **Option 2: Up and Down buttons**

You can use the Up and Down buttons to reorder fields. This option is available when you are adding metadata fields to rules using the Fields Tab. This method is useful to reorder fields that have already been added, or to reorder fields that have been added with the same field position.

For example, if you added three fields with a field position of Top, they are positioned in the order they were added to the rule. However, if one of the three field needs to be moved to the absolute top, you can use the Up button to achieve this. Similarly, if any field is not positioned properly when it was added, you can use the Up and Down buttons to more precisely re-position them.

3.2.3.2.3 Display Results of Grouped Metadata Fields on the Check In, Update, and Check In Selected Pages

The following rules specify how metadata groups are displayed on the Check in, Update, and Check in Selected pages.

- If the first field in a group is a system field (such as Content ID, Type, Title, etc.), the group is always displayed above the Primary File field.
- If automatic Content ID generation is disabled, then the Content ID field is always listed as the first field on the page followed by the remaining fields in the group. Also, if a separate group includes other system fields like Title and Type, that group is listed after the Content ID group but above the Primary File field.
- If automatic Content ID generation is enabled, then the Content ID field functions like a custom metadata field with 1 as its field order. In this case, if Content ID is the first field in a group, then the group is displayed immediately below the Primary File and Alternate File fields. Also, the Revision system metadata field is displayed after the last field in the Content ID group. (Note that, by default, Revision is displayed below the Alternate File field.)
- If the first field of a group is a custom metadata field, then the group is displayed in the order that is determined by the field order number of the lead metadata field in relation to the field order numbers of lead metadata fields in other groups. This is valid even if system metadata fields are grouped with custom metadata fields.
- The Release Date and Expiration Date fields are always listed last on the page unless they are grouped with a custom metadata field that has a higher (i.e., smaller number) field order value. Or, if Release Date and Expiration Date are grouped with a system metadata field, then they are listed above the Primary File field.

3.2.3.2.4 Display Results of Grouped Metadata Fields on the Search Page

The following rules specify how metadata groups are displayed on the Search page.

- The Content ID field is always positioned first unless it is part of a group and it is not the first field. However, if Content ID is the first field of a group, then that group is listed first.
- If a system metadata field (other than Content ID) is the first field in a group, that group is listed after the Content ID field or Content ID group.
- All other groups with custom metadata fields as the first fields are displayed after groups with system metadata fields as the lead fields. When groups have a custom metadata field as the first field, the ordering of these groups is determined by the field order numbers of the lead metadata fields of groups in relation to each other.

Note: In order for a metadata field to be displayed on a search page, the Enable for Search Index must be set on the [Add/Edit Metadata Field Screen](#).

3.2.3.2.5 Display Results of Grouped Metadata Fields on the Content Information Page

The following rules specify how metadata groups are displayed on the Content Information page.

- The Content ID field is always positioned first unless it is part of a group and it is not the first field.
- The Checked Out By, Status, and Formats fields are always listed at the bottom.
- The Security Group field, or any group with Security Group as the first field, is listed above the Checked Out By, Status, and Formats fields. This is valid unless:
 - The account is disabled. If the account is enabled, then Security Group is displayed above the Checked Out By field. Security Group is displayed above the Account field.
 - The Security Group field is part of a group where it is not the first field, and the lead metadata field has a field order number that positions it above other custom metadata fields. In this case, the Security Group field is displayed in the order that is determined by the field order number of the group's lead metadata field.
- The Release Date and Expiration Date fields are listed as part of the Revision History table at the bottom of the page.
- All other groups with custom metadata fields as the first fields are displayed in the order that is determined by the field order numbers of the lead metadata fields of groups in relation to each other.

3.2.3.2.6 Display Results of Grouped Metadata Fields on the Folder Information Page

The following rules specify how metadata groups are displayed on the Folder Information page.

- The Content ID field is not displayed unless it is part of a group. Currently, any group with Content ID as the first field is not displayed. You can counteract this by defining another system or custom metadata field in the group as the lead field.
- All the groups are listed that have system metadata fields as their lead field (provided their assigned display attribute is Edit, Label, or Required). If any system or custom metadata field is assigned a Hidden or Excluded display attribute, it will not be displayed. For more information about the display attributes assigned to metadata fields, refer to the [Type list feature on the "Add/Edit Rule Field 'name' Screen"](#) on page A-79.
- All other groups with custom metadata fields as the first fields are displayed in the order that is determined by the field order numbers of the lead metadata fields of groups in relation to each other.

3.2.3.2.7 Moving Custom Metadata Fields to a Position Above the Primary File Field

To force any custom metadata field to display above the Primary File field:

1. Add the custom metadata field to a group that includes system metadata fields.
2. Make the first field in the group a system metadata field. Group position is based on which system metadata field is the lead field.

3.2.3.2.8 Moving System Metadata Fields to a Position Below the Primary File Field

To force any system metadata field to display below the Primary File field:

1. Add the desired system metadata field to a group that includes custom metadata fields.
2. Ensure that the first field in the group is a custom metadata field.
This ensures that the group is displayed below the Primary File field. The group is positioned based on the field order number of the lead field.

3.2.4 Managing Rules

The following tasks are included in rule management:

- [Creating a New Rule](#)
- [Editing an Existing Rule](#)
- [Deleting an Existing Rule](#)
- [Creating a New Global Rule](#)
- [Editing an Existing Global Rule](#)
- [Deleting an Existing Global Rule](#)
- [Adding Metadata Fields to a Rule](#)
- [Grouping Metadata Fields](#)
- [Adding a Header to a Metadata Field Group](#)
- [Defining a New Activation Condition](#)
- [Editing an Existing Activation Condition](#)
- [Deleting an Existing Activation Condition](#)
- [Defining the Attributes of a Metadata Field](#)
- [Editing the Attributes of a Metadata Field](#)
- [Setting the Display of a Required Field](#)

3.2.4.1 Creating a New Rule

To create a new rule:

1. On the Rules tab of the [Configuration Manager Application Page](#), click **Add**.
The [Add/Edit Rule Screens](#) is displayed.
2. Enter the name and description information about the new rule.
3. Click **OK**.

The following list provides references to sections describing how to configure the new rule:

- To create a global rule, see "[Creating a New Global Rule](#)" on page 3-29.
- To group metadata fields belonging to a rule, see "[Adding Metadata Fields to a Rule](#)" on page 3-30.
- To include activation conditions to the rule, see "[Editing an Existing Activation Condition](#)" on page 3-31.
- To add metadata fields and define related attributes to the rule, see "[Grouping Metadata Fields](#)" on page 3-30 and "[Defining the Attributes of a Metadata Field](#)" on page 3-32, respectively.

3.2.4.2 Editing an Existing Rule

To edit an existing rule:

1. On the Rules tab of the [Configuration Manager Application Page](#), select the rule to edit from the Rules list pane, and click **Edit**.

The [Add/Edit Rule Screens](#) is displayed and the fields are populated with the previously set values for the selected rule.

2. Edit the field values.
3. Click **OK**.

3.2.4.3 Deleting an Existing Rule

To delete an existing rule:

1. On the Rules tab of the [Configuration Manager Application Page](#), select the rule to delete from the Rules list pane, and click **Delete**.

You are asked to verify your decision to delete the rule.

2. Click **OK**.

The selected rule is removed.

3.2.4.4 Creating a New Global Rule

To create a global rule:

1. Open the [Add/Edit Profile Screen](#) by adding a new rule or selecting an existing rule to edit. See "[Creating a New Rule](#)" on page 3-28 or "[Editing an Existing Rule](#)" on page 3-29.
2. On the General tab, select the Is global rule with priority check box.
3. Optionally, change the default priority number. By default, 10 is the priority number listed. For more information about how rules are evaluated and resolved, see "[Profile Rules](#)" on page 3-14.
4. Click **OK**.

3.2.4.5 Editing an Existing Global Rule

To edit an existing global rule:

1. On the Rules tab of the [Configuration Manager Application Page](#), select the global rule to edit from the Rules list pane, and click **Edit**.

The [Add/Edit Rule Screens](#) is displayed and the fields are populated with the previously set values for the selected global rule.

2. Edit the field values.
3. Click **OK**.

3.2.4.6 Deleting an Existing Global Rule

To delete an existing global rule:

1. On the Rules tab of the [Configuration Manager Application Page](#), select the global rule to delete from the Rules list pane, and click **Delete**.

You are asked to verify your decision to delete the rule.

2. Click **OK**.

The selected rule is removed.

3.2.4.7 Adding Metadata Fields to a Rule

To add metadata fields to a rule:

1. Open the [Add/Edit Rule Screens](#) by adding a new rule/global rule or selecting an existing rule/global rule to edit.

Note: For more detailed information, see "[Creating a New Rule](#)" on page 3-28, "[Creating a New Global Rule](#)" on page 3-29, "[Editing an Existing Rule](#)" on page 3-29, or "[Editing an Existing Global Rule](#)" on page 3-29.

2. Open the Fields tab, and click **Add**.
The [Add Rule Field Screen](#) is displayed.
3. Select a metadata field from the Field Name option list.
4. Select a general placement choice for the metadata field from the Field Position option list.
5. Click **OK**.
The [Add/Edit Rule Field 'name' Screen](#) is displayed.
6. Enter the information about the metadata field.
7. Click **OK**.
8. For each metadata field to be added to the rule, repeat steps 2 through 7 above.

The following list provides references to sections describing how to configure the metadata rule:

- For more detailed information about default values, derived values and restricted lists, see "[Add/Edit Rule Field 'name' Screen](#)" on page A-79.
- For general instructions on adding these attributes to the metadata fields, see "[Setting a Metadata Field Default Value](#)" on page 3-32, "[Setting a Metadata Field Derived Value](#)" on page 3-33, and "[Setting a Metadata Field Restricted List Condition](#)" on page 3-34.

3.2.4.8 Grouping Metadata Fields

To group metadata fields:

1. Open the [Add/Edit Rule Screens](#). See step 1 in the "[Adding Metadata Fields to a Rule](#)" on page 3-30 procedure.
2. On the General tab, select the Is group check box.
3. Click **OK**.

The Edit Rule '*name*' screen closes.

3.2.4.9 Adding a Header to a Metadata Field Group

To include a label (header) to a metadata group:

1. Open the [Add/Edit Rule Screens](#). See step 1 in the "[Adding Metadata Fields to a Rule](#)" on page 3-30 procedure.

2. On the General tab, select the Has group header check box.
3. Click the corresponding **Edit** button.
The [Edit Group Header Screen](#) is displayed.
4. Enter the text of the header and click **OK**.
The header is displayed above the grouped metadata fields.

3.2.4.10 Defining a New Activation Condition

To add an activation condition to a rule:

1. Open the [Add/Edit Rule Screens](#). See step 1 in the "[Adding Metadata Fields to a Rule](#)" on page 3-30 procedure.
2. On the General tab, select the Use rule activation condition check box.
3. Click the corresponding **Edit** button. The [Edit Activation Condition Screen Tabs](#) is displayed.
4. Click **Add**. The [Edit Activation Condition: Add Condition Screen](#) is displayed.
5. Enter the name of the activation condition in the Name field, and click **OK**. The General Tab is displayed.
6. Enter the information using the General tab and Clauses tab to define the activation condition. Optionally, you can write custom Idoc Script using the Custom tab.
7. Click **OK**.

3.2.4.11 Editing an Existing Activation Condition

To edit an existing activation condition:

1. Open the [Add/Edit Rule Screens](#). See step 1 in the "[Adding Metadata Fields to a Rule](#)" on page 3-30 procedure.
2. Click the **Edit** button that corresponds to the activation condition check box.
The [Edit Activation Condition Screen Tabs](#) is displayed.
3. On the Conditions tab, select the activation condition that you want to edit from the Conditions list.
4. Edit the field values.
5. Click **OK**.

3.2.4.12 Deleting an Existing Activation Condition

To delete an existing activation condition:

1. Open the [Add/Edit Rule Screens](#). See step 1 in the "[Adding Metadata Fields to a Rule](#)" on page 3-30 procedure.
2. Click the **Edit** button that corresponds to the activation condition check box.
The [Edit Activation Condition Screen Tabs](#) is displayed.
3. On the Conditions tab, select the activation condition to delete from the Conditions list.
4. Click **Delete**.
The activation condition is removed.

3.2.4.13 Defining the Attributes of a Metadata Field

You must assign the required attributes (field position and type) to each metadata field belonging to a rule. You can also define optional attributes that include a required message, a default value, derived value or a restricted list. For more detailed information about the attributes of metadata fields in rules, see "[Metadata Fields and Attributes in Rules](#)" on page 3-15.

To define the attributes of a metadata field:

1. Open the [Add/Edit Rule Screens](#). See step 1 in the "[Adding Metadata Fields to a Rule](#)" on page 3-30 procedure.
2. Open the Fields tab, and click **Add**.
The [Add Rule Field Screen](#) is displayed.
3. Select a metadata field from the Field Name option list.
4. Select a general placement choice for the metadata field from the Field Position option list.
5. Click **OK**.
The [Add/Edit Rule Field 'name' Screen](#) is displayed.
6. Select a display type from the Type option list.
7. If desired, enter a required message.
8. Define the additional attributes by setting default values, derived values or a restricted list. For more detailed information, see:
 - "[Setting a Metadata Field Default Value](#)" on page 3-32
 - "[Setting a Metadata Field Derived Value](#)" on page 3-33
 - "[Setting a Metadata Field Restricted List Condition](#)" on page 3-34.
9. Click **OK**.

Setting a Metadata Field Default Value

To set a default value field attribute:

1. On the [Add/Edit Rule Field 'name' Screen](#), select the Use default value check box.
2. Click the corresponding **Edit** button.
The [Edit Default Value: Conditions Tab](#) is displayed.
3. On the Conditions tab, click **Add**.
The [Edit Default Value: Add Condition Screen](#) is displayed.
4. Enter the name for this default value attribute and click **OK**.
The Add Condition screen closes and the default attribute name is added to the Conditions list.
5. Select a Field value and Operator from the option lists. Depending on the selected value from the Field list, the Value field provides:
 - An editable field to enter the data.
 - A choice list of appropriate options.
 - An editable field with a corresponding Select button.
6. Enter or select a value for the upper Value field, as applicable:

- a. Click **Select if**:
 - The Field value is Content ID, the [Edit Default Value: Select Field Screen](#) is displayed.
 - The Field value is Author, the [User View Screen](#) is displayed.
- b. Use the filters as desired to select content.
- c. Click **OK**.
 - The [Content Item View Screen](#) or [User View Screen](#) closes and the selected content value is added to the upper Value field on the default value Conditions tab.
7. Click **Add**.
 - The statement is added to the expression pane.
8. Click **Compute**.
 - The [Edit Default Value: Select Field Screen](#) is displayed.
9. If the field is linked to a schema view, you can select a column. Otherwise, click **OK**.
 - The Select Field screen closes and the computed value is added to the lower Value field on the default value Conditions tab.
10. Click **OK**.
 - The Edit Default Value screen closes and the Idoc Script statement is displayed in the default value text pane on the Add Rule Field <name> screen.
11. If you are finished adding metadata field attributes, click **OK**. Otherwise, continue to include additional attributes. See "[Setting a Metadata Field Derived Value](#)" on page 3-33 and "[Setting a Metadata Field Restricted List Condition](#)" on page 3-34.

Setting a Metadata Field Derived Value

To set a derived value field attribute:

1. On the [Add/Edit Rule Field 'name' Screen](#), select the Is derived field check box.
2. Click the corresponding **Edit** button.
 - The [Edit Derived Value: Conditions Tab](#) is displayed.
3. On the Conditions tab, click **Add**.
 - The [Edit Derived Value: Add Condition Screen](#) is displayed.
4. Enter the name for this derived value attribute and click **OK**.
 - The Add Condition screen closes and the derived attribute name is added to the Conditions list.
5. Select a Field value and Operator from the option lists. Depending on the selected value from the Field list, the Value field provides:
 - An editable field to enter the data.
 - A choice list of appropriate options.
 - An editable field with a corresponding Select button.
6. Enter or select a value for the upper Value field, as applicable:
 - a. Click **Select if**:

The Field value is Content ID, the [Edit Derived Value: Select Field Screen](#) is displayed.

The Field value is Author, the [User View Screen](#) is displayed.

- b. Use the filters as desired to select content.
- c. Click **OK**.

The [Content Item View Screen](#) or [User View Screen](#) closes and the selected content value is added to the upper Value field on the default value Conditions tab.

7. Click **Add**.

The statement is added to the expression pane.

8. Click **Compute**.

The [Edit Derived Value: Select Field Screen](#) is displayed.

9. If the field is linked to a schema view, you can select a column. Otherwise, click **OK**.

The Select Field screen closes and the computed value is added to the lower Value field on the derived value Conditions tab.

10. Click **OK**.

The Edit Derived Value screen closes and the Idoc Script statement is displayed in the default value text pane on the Add Rule Field *<name>* screen.

11. If you are finished adding metadata field attributes, click **OK**. Otherwise, continue to include additional attributes. See "[Setting a Metadata Field Default Value](#)" on page 3-32 and "[Setting a Metadata Field Restricted List Condition](#)" on page 3-34.

Setting a Metadata Field Restricted List Condition

To use a restricted list for the metadata field:

1. On the [Add/Edit Rule Field 'name' Screen](#), select the Has restricted list check box.
2. Click the corresponding **Edit** button.

The [Edit Restricted List Screen](#) is displayed.

3. To use a list of values that are directly associated with rules, select the Is filtered list option.

Otherwise, if you want to use a list of specific values, select the Is strict list option and enter the specific items in the Restricted value text pane.

4. Click **OK**.

The Edit Restricted List screen closes and if you used the strict list option, the items are displayed in the restricted list text pane on the Add Rule Field *<name>* screen.

3.2.4.14 Editing the Attributes of a Metadata Field

To edit the attributes of a metadata field:

1. Open the [Add/Edit Rule Screens](#). See step 1 in the "[Adding Metadata Fields to a Rule](#)" on page 3-30 procedure.
2. Open the Fields tab, and select the metadata field whose attributes you want to edit.
3. Click **Edit**.

The [Add/Edit Rule Field 'name' Screen](#) is displayed.

4. Click the corresponding **Edit** button of the attribute you want to edit.
 - If you are editing the default value attribute, the [Edit Default Value: Conditions Tab](#) is displayed.
 - If you are editing the derived value attribute, the [Edit Derived Value: Conditions Tab](#) is displayed.
 - If you are editing the restricted list attribute, the [Edit Restricted List Screen](#) is displayed.
5. For either the default value or derived value, select the value to edit in the Conditions text pane.
 - a. Select the desired new Field and/or Operator field values.
 - b. To edit the upper Value field value without deleting and redefining the clause:
 - Highlight the clause in the Clause pane.
 - Edit the value in the upper Value field.
 - Click **Update**.

The new value is updated and displayed in the Clause pane.
 - c. Click **Compute**.
 - d. Click **OK**.

The Edit Default/Derived Value screen closes and the revised values are displayed in the default/derived value text pane on the Edit Rule Field *<name>* screen.

6. For the restricted list attribute,
 - a. On the Edit Restricted List screen, select the desired list option and edit the text pane as necessary.
 - b. Click **OK**.

The Edit Restricted List screen closes and the revised restricted list information is displayed in the restricted list text pane on the Edit Rule Field *<name>* screen.

7. Click **OK**.

The Edit Rule Field *<name>* screen closes.

3.2.4.15 Setting the Display of a Required Field

Two configuration variables control how required metadata fields appear on the Check In page. These variables must be manually set in the `IntradocDir/config/config.cfg` file. For more information, see the *Oracle Fusion Middleware Idoc Script Reference Guide*.

- To use red lettering for a required field, use the following configuration variable and value:

```
StyleForRequiredFields=requiredField
```

- To mark the required field with any symbol, use the following configuration variable and value:

```
NotationForRequiredFields=*
```

Note: In this example, an asterisk is used to mark the required fields.

3.2.5 Content Profile Triggers

This section covers the following topic:

- ["About Triggers"](#) on page 3-36
- ["Selecting a Profile Trigger Field"](#) on page 3-36
- ["Disabling a Profile Trigger Field"](#) on page 3-37

3.2.5.1 About Triggers

A *trigger field* is a metadata field that is defined on the [Configuration Manager: Profiles Tab](#). If a document matches a *trigger value* for a profile, then that profile is evaluated for the document. There can be an unlimited number of profiles, but only one trigger value per profile.

For example, if the trigger field is `dDocType`, Profile1 can use the trigger value of `ADACCT` and Profile2 can use the trigger value of `ADSALES`. See ["Add Profile Screen"](#) on page A-60 for details.

The selected trigger field must satisfy the following criteria:

- It must be an option list metadata field. The metadata fields that are defined as option lists are included in the list for selecting the trigger field. Refer to the ["Add Profile Screen"](#) on page A-60.
- After the trigger field has been defined, it cannot be deleted from the system.
- It is possible to undefine or disable the trigger field. The administrator can set the trigger field back to none specified. This disables all profiles. See ["Disabling a Profile Trigger Field"](#) on page 3-37.
- The trigger field may be changed. See ["Disabling a Profile Trigger Field"](#) on page 3-37. When it is changed, profiles may become invalid and it is the administrator's responsibility to resolve the situation. However, user interface hints are provided concerning which profiles are invalid.

Note: Although you create rules before you create triggers and profiles, it is necessary to know what your trigger will be prior to creating rules.

3.2.5.2 Selecting a Profile Trigger Field

Only one trigger field can be selected for each content server instance.

To select or change the current profile trigger field:

1. On the Profiles tab of the Configuration Manager, click **Select**.
The [Edit Trigger Field Screen](#) is displayed.
2. Select a new trigger field from the option list in the Field Name field.
3. Click **OK**.

Note: If you change the trigger field after one or more profiles have already been created, the new trigger field could cause the existing profiles to become invalid.

3.2.5.3 Disabling a Profile Trigger Field

To completely disable the trigger field and essentially disable all profiles as well:

1. On the Profiles tab of the [Configuration Manager Application Page](#), click **Select**.
The [Edit Trigger Field Screen](#) is displayed.
2. Select **none specified** from the option list in the Field Name field.
3. Click **OK**.

3.2.6 Managing Content Profiles

This section covers these topics:

- ["Creating and Defining a New Profile"](#) on page 3-37
- ["Editing an Existing Profile"](#) on page 3-37
- ["Deleting an Existing Profile"](#) on page 3-38
- ["Managing the Rules in a Profile"](#) on page 3-38
- ["Previewing a Profile"](#) on page 3-38
- ["Troubleshooting a Previewed Profile"](#) on page 3-39

3.2.6.1 Creating and Defining a New Profile

To create a new profile:

1. On the Profiles tab of the [Configuration Manager Application Page](#), click **Add**.
The [Add Profile Screen](#) is displayed.
2. Enter the name of the new profile in the Profile Name field.
3. Click **OK**.
The [Add/Edit Profile Screen](#) is displayed.
4. Enter the information about the new profile on the Add Profile '*name*' screen.
5. Click **Add** to include rules in the new profile.
The [Add Rule Screen](#) is displayed.

Note: Rules cannot be added to the profile until you have created and defined them using the [Configuration Manager: Rules Tab](#).

6. Select rules from the option list and assign them a general placement priority value.
7. Click **OK**.
The new profile is included in the Profiles list on the Profiles tab.

3.2.6.2 Editing an Existing Profile

To edit an existing profile:

1. On the Profiles tab of the [Configuration Manager Application Page](#), select the profile you want to edit from the Profiles list pane, and click **Edit**.
The [Add/Edit Profile Screen](#) is displayed and the fields are populated with the previously set values for the selected profile.

2. Edit the field values.
3. Click **OK**.

3.2.6.3 Deleting an Existing Profile

To delete an existing profile:

1. On the Profiles tab of the [Configuration Manager Application Page](#), select the profile to delete, and click **Delete**.

You are asked to verify your decision to delete the profile.

2. Click **OK**.

The selected profile is removed.

3.2.6.4 Managing the Rules in a Profile

Managing the rules that belong to a profile means that, if necessary, you can add, strategically prioritize, or delete the profile's rules as follows:

- [Adding Rules to an Existing Profile](#)
- [Prioritizing Rules in an Existing Profile](#)
- [Deleting Rules from an Existing Profile](#)

3.2.6.4.1 Adding Rules to an Existing Profile

To add rules to an existing profile:

1. On the Profiles tab of the [Configuration Manager Application Page](#), select the appropriate profile from the Profiles list, and click **Edit**.

The [Add/Edit Profile Screen](#) is displayed.

2. Click **Add**.

The [Add Rule Screen](#) is displayed.

3. Select a rule from the Name option list.
4. Select a general placement choice for the rule from the Rule Priority option list.
5. Click **OK**.

The selected rule is added to the Rules list.

3.2.6.4.2 Prioritizing Rules in an Existing Profile

To prioritize rules in an existing profile:

1. On the [Add/Edit Profile Screen](#), select the rule to reposition.
2. Click **Up** to move the rule to increase the rule's priority or click **Down** to decrease the rule's priority.

The rule's placement is shifted and its priority will be appropriately adjusted in the evaluation process.

3.2.6.4.3 Deleting Rules from an Existing Profile

To delete rules from an existing profile:

1. On the [Add/Edit Profile Screen](#), select the rule to delete.
2. Click **Delete**.

The selected rule is removed from the profile.

3.2.6.5 Previewing a Profile

To preview a profile for verification or review:

1. On the Profiles tab of the [Configuration Manager Application Page](#), select the profile to be previewed from the Profiles list, and click **Preview**.

The [Preview Profile Screen](#) is displayed.

2. To review the compiled results of the current profile, do not change any field values on the Preview Profile screen. Click **Compute results**.

The [Preview Results Screen](#) is displayed.

3. Review the computed results, and click **OK**.

3.2.6.6 Troubleshooting a Previewed Profile

In addition to previewing the compiled results of your profile, the [Preview Profile Screen](#) is also used to troubleshoot invalid profiles and perform analysis on any profile.

Troubleshooting using what-if scenarios is an iterative process, composed of trying combinations of inputs to evaluate the profile's rules. In addition to using different input values, you can include filtered selections of documents.

Changing the different criteria (with or without filters) and computing the results allows you see how various input combinations affect the evaluation of rules. When the system evaluates the profile's rules, the computed results are displayed either as script string statements (SQL or Idoc Script) in a standard dialog text pane or as simulated Check In or Search pages (if you select the On Request option as the Event field value). Using the flexibility of the what-if analysis process helps you debug and optimize your profiles.

3.2.6.6.1 Using Inputs and Filters to Perform What-If Analysis To perform what-if scenarios using diverse combinations of inputs and filters:

1. On the Profiles tab of the [Configuration Manager Application Page](#), select the profile to be reviewed and tested from the Profiles list, and click **Preview**.

The [Preview Profile Screen](#) is displayed.

2. Select field values, as applicable, from the Event, Action, and Is workflow option lists.
3. To include filtered choices for the Content ID field, click the corresponding **Select** button.

The [Content Item View Screen](#) is displayed.

4. Select content item filter options, as applicable, and click **OK**. You are returned to the Preview Profile screen.
5. To include filtered choices for the User Name field, click the corresponding **Select** button.

The [User View Screen](#) is displayed.

6. Select user filter options, as applicable, and click **OK**. You are returned to the Preview Profile screen.

Note: To evaluate the rules using the new inputs and review the results as script string statements in a dialog, see ["Evaluating the Results as Script Strings in a Dialog"](#) on page 3-40.

To evaluate the rules using the new inputs and review the metadata results as a simulated Check In or Search page in a dialog, see ["Evaluating Results as a Simulated Page in a Browser Window"](#) on page 3-40.

3.2.6.6.2 Evaluating the Results as Script Strings in a Dialog To view the evaluated rules as coded statements:

1. Perform a what-if analysis. See ["Using Inputs and Filters to Perform What-If Analysis"](#) on page 3-39.
2. Click **Compute results**.
The [Preview Results Screen](#) is displayed and the coded statements from the evaluated rules are shown in the dialog text pane.
3. Review the computed results, and click **OK** to return to the Preview Profile screen and continue testing additional what-if profile scenarios.

3.2.6.6.3 Evaluating Results as a Simulated Page in a Browser Window To view the evaluated rules and resulting metadata fields as they would display on Check In or Search pages for end users:

1. On the Profiles tab of the [Configuration Manager Application Page](#), select the profile to be reviewed and tested from the Profiles list, and click **Preview**.
The [Preview Profile Screen](#) is displayed.

Note: If you have selected the On Request option in the Event field on the Preview Profile screen, then the Show button opens a browser window to display a reconstructed image of the page showing the processed metadata field results. Also, previews performed in the browser window do not use a User Name field value.

2. In the Event field, select the **On Request** option.
3. Select field values, as applicable, from the Action and Is workflow option lists.
4. To include filtered choices for the Content ID field, see steps 3 and 4 in the section ["Using Inputs and Filters to Perform What-If Analysis"](#) on page 3-39.
5. Click **Show** on the [Preview Profile Screen](#).

The system launches a browser window that displays the resulting metadata fields in a simulated Check In or Search page. This window provides a graphic view of what the end user will see.

6. Review the computed results and to continue testing additional what-if scenarios, close the browser window to return to the Preview Profile screen.

3.2.7 Content Profile Examples

These profile examples are included to help you develop useful profiles:

- [Department-Based Content Profile](#)

- [Black-Hole Check In Profile for Resumes](#)
- [Global Rule to Restrict Content Check-In Based on User Role](#)
- [Global Rule to Restrict Content Type Metadata Changes](#)

3.2.7.1 Department-Based Content Profile

This example shows how to plan and create a department-based profile that includes one global rule and one regular profile rule.

The goal is to control how the metadata fields governed by the rules are displayed on the Check In, Update, Content Information, and Search pages. Ideally, only department-specific fields are displayed. This minimizes the number of metadata fields that users see.

This example creates the applicable rules first and then the profile because the rules are added to the profile during the process of creating the actual profile.

This example is divided into the following main steps:

- Create a global rule with the characteristics:
 - Ensure that all new and updated content items that are checked in have comments associated with them. The optional comments metadata field is revised to be a required field.
 - Allow the content item title metadata field to be editable.

See "[Create the Profile Rule](#)" on page 3-43.
- Create a profile rule with the following characteristics:
 - Provide a default value for the comments metadata field but also allow it to be editable. The default message is triggered by marketing-specific documents.
 - Provide default values that are read-only text for the publish type and revision label metadata fields.

See "[Create the Profile Rule](#)" on page 3-43.
- Create a department-based profile with the characteristics:
 - Organize the metadata fields that are hidden or displayed on the Check In, Update, Content Information, and Search pages.
 - Display only those fields that are relevant to the marketing department.
 - Group selected metadata fields using a marketing-based group heading.

See "[Create the Department-Based Profile](#)" on page 3-44.

3.2.7.1.1 Create the Global Rule

To create the global rule:

1. Open the Rules tab on the [Configuration Manager Application Page](#), and select **Add**.
The [Add/Edit Rule Screens](#) is displayed.
2. On the General tab, enter the name of the global rule in the Name field (for example, CmtsRqd).
3. Optionally, enter a description for the global rule.
4. Select the **Is global rule with priority** check box. (You can optionally change the priority number.)
5. Add and define the Comments metadata field as follows:

- a. On the Fields tab, click **Add**.
The [Add Rule Field Screen](#) is displayed.
 - b. Select **Comments** from the Field Name option list.
 - c. Select a general position from the Field Position option list (for example, top).
 - d. Click **OK**.
The [Add/Edit Rule Field 'name' Screen](#) is displayed.
 - e. Select the **Required** display type from the Type option list (to ensure that users must enter a comment about the content item being checked in).
 - f. Enter a statement in the Required Message field. (This is optional for all rule field types except the Required type.)
 - g. Select the **Use default value** check box and click the corresponding **Edit** button.
The [Edit Default Value: Conditions Tab](#) is displayed.
 - h. On the Conditions tab, click **Add**.
The [Edit Default Value: Add Condition Screen](#) is displayed.
 - i. Enter the name of the field condition (for example, UserMsg).
 - j. Click **OK**.
The Add Condition screen closes and the clause-generating fields display on the lower pane of the Conditions tab.
 - k. Enter a short statement in the lower Value field, at the far bottom of the screen (near the **Compute** button). This statement will be the default value for the Comment field.
 - l. Click **OK**.
The Edit Default Value screen closes and the default value Idoc Script clause for the UserMsg field condition is added to the Default Value text pane.
 - m. Click **OK**.
The Add Rule Field screen closes and the Comments metadata field is added to the Fields list.
6. Add and define the Document Title metadata field as follows:
 - a. On the Fields tab of the Add/Edit Rule screen, click **Add**.
 - b. Select **Title** from the Field Name option list.
 - c. Select a general position from the Field Position option list (for example, bottom).
 - d. Click **OK**.
 - e. Select the **Edit** display type from the Type option list (to allow this metadata field to be editable on the Check In and Search pages).
 - f. Optionally, enter a note in the Required Message field.
 - g. Click **OK**.
The Title metadata field is added to the Fields list.
 7. Click **OK**.

The Add/Edit Rule screen closes.

3.2.7.1.2 Create the Profile Rule

To create the profile rule:

1. On the Rules tab, select **Add**.
2. On the General tab, enter the name of the profile rule in the Name field (for example, DefaultMktComment).
3. Optionally, enter a description for the profile rule.
4. Select the **Is group** check box.
5. Select the **Has group header** check box, and click the corresponding **Edit** button.

The [Edit Group Header Screen](#) is displayed.

6. Enter the text to use as the header for the grouped metadata fields (for example, Marketing-Specific Information).
7. Click **OK**.
8. Add and define the Comments metadata field as follows:
 - a. On the Fields tab, click **Add**.
 - b. Select **Comments** from the Field Name option list.
 - c. Select a general position from the Field Position option list (for example, top).
 - d. Click **OK**.
 - e. Select the **Edit** display type from the Type option list (to allow this metadata field to be editable on the Check In, Update, Content Information, and Search pages).
 - f. Optionally, enter a note in the Required Message field.
 - g. Select the **Use default value** check box, and click the corresponding **Edit** button.
 - h. On the Conditions tab, click **Add**.
 - i. Enter the name of the field condition (for example, CurrentMktgDocs).
 - j. Click **OK**.
 - k. Enter **These are Current Marketing Docs** into the lower Value field at the bottom of the screen (near the **Compute** button).
 - l. Click **OK**.

The default value Idoc Script clause for the 7.5MktgDocs field condition is added to the Default Value text pane.

- m. Click **OK**.

The Comments metadata field is added to the Fields list.

9. Add and define the Publish Type metadata field as follows:
 - a. On the Fields tab, click **Add**.
 - b. Select **Publish Type** from the Field Name option list.
 - c. Select a general position from the Field Position option list (for example, middle).
 - d. Click **OK**.

- e. Select the **Label** display type from the Type option list (to make this a read-only metadata field on the Check In, Update, Content Information, and Search pages).
- f. Optionally, enter a note in the Required Message field.
- g. Select the **Use default value** check box and click the corresponding **Edit** button.
- h. On the Conditions tab, click **Add**.
- i. Enter the name of the field condition (for example, MktgDocsOnly).
- j. Click **OK**.
- k. Enter **@dDocName** into the lower Value field at the bottom of the screen (near the **Compute** button).
- l. Click **OK**.

The default value Idoc Script clause for the MktgDocsOnly field condition is added to the Default Value text pane.

- m. Click **OK**.
The Publish Type metadata field is added to the Fields list.
10. Add and define the Revision Label metadata field as follows:
 - a. On the Fields tab, click **Add**.
 - b. Select **Revision** from the Field Name option list.
 - c. Select a general position from the Field Position option list (for example, bottom).
 - d. Click **OK**.
 - e. Select the **Label** display type from the Type option list (to make this a read-only metadata field on the Check In, Update, Content Information, and Search pages).
 - f. Optionally, enter a note in the Required Message field.
 - g. Select the **Use default value** check box.
 - h. Click **OK**.

The Revision Label metadata field is added to the Fields list.

11. Click **OK**.

The Add/Edit Rule screen closes.

3.2.7.1.3 Create the Department-Based Profile To create a department-based profile:

1. Open the Profiles tab on the [Configuration Manager Application Page](#) and click **Select**.

The [Add Profile Screen](#) is displayed.

2. Select **Type** from the Field Name option list.
3. Click **OK**.
4. Click **Add** on the Profiles tab.

The [Add Profile Screen](#) is displayed.

5. Enter the name of the profile (for example, MktgDoc).

6. Click **OK**.
The [Add/Edit Profile Screen](#) is displayed.
7. Enter the profile description in the Description field (for example, Current Mktg docs).
8. Enter a label for the profile that clearly identifies its use (for example, MarketingSpecific).
9. Select **ADMKT** (or an equivalent marketing option) from the Trigger option list.
10. Click **Add** to include the rules in this profile.
The [Add Rule Screen](#) is displayed.
11. Select the **DefaultMktComment** rule from the Name option list.
12. Select a general priority placement from the Rule Priority option list (for example, top).
13. Click **OK**.
14. Click **Add**.
15. Click **OK**.
16. Click **OK**.
The Add Profile screen closes and the profile is added to the list of profiles on the Profiles tab.

3.2.7.2 Black-Hole Check In Profile for Resumes

This example shows how to plan and create a black-hole check in profile used to submit resumes to Human Resources.

The goal is to restrict the visible metadata fields available on the Check In, Update, Content Information, and Search pages when using this profile. After a resume is initially checked in, the derived settings for all the potentially searchable metadata fields prevent unauthorized users from retrieving the document. This example creates the applicable rules first and then the profile because the rules are added to the profile during the process of creating the actual profile.

This example is based on the default metadata fields displayed using a non-customized Content Server instance. The visible metadata fields in this profile are limited to Type, Primary File, Alternate File, and Comments. The Type field uses a read-only label. On submission the value is reset to an HR-accessible value to ensure confidentiality of the document. Only the Comments field is editable. The remaining metadata fields are hidden and on submission also have their values reset. In this example, the hidden metadata fields include Title, Author, Security Group, Content ID, Revision, Release Date, and Expiration Date.

Note: If selected, both the Hidden and Excluded display attributes conceal the defined metadata field. Using the Hidden type has the advantage of allowing the field value to remain on the source page. Thus, the contributor does not see the Hidden fields when checking in the document, but the assigned field values are still visible to an authorized viewer. The Excluded type precludes the field values on the source page.

Note: In a black-hole check in profile, it is not advisable to depend on the Exclude non-rule fields check box to hide unnecessary metadata fields. Selecting this check box suppresses the display of all metadata fields that do not belong to the profile's rules. Therefore, contributors would not see these fields. However, it would not prevent default values from being assigned and subsequently stored on the source page. It would then be possible for unauthorized users to find a black-hole document by searching on the excluded metadata fields.

This example is divided into the following main steps:

- Create a profile rule that:
 - Hides non-essential metadata fields and does not display them on the Check In, Update, Content Information, and Search pages.
 - Resets the default values of each hidden metadata field to ensure that unauthorized users cannot search and retrieve documents using the hidden fields.

See "[Create a Profile Rule for the Hidden Metadata Fields](#)" on page 3-46.

- Create a profile rule that:
 - Allows the display of specific metadata fields related to checking in a resume.
 - Resets the values of each visible metadata field to ensure that unauthorized users cannot search and retrieve documents using these fields.

See "[Create a Profile Rule for the Visible Metadata Fields](#)" on page 3-51.

- Create a black-hole check in profile that:
 - Restricts the metadata fields that are hidden or displayed on the Check In, Update, Content Information, and Search pages.
 - Displays only those fields that are relevant to an employee who is checking in a resume for an internal company position.

See "[Create the Black-Hole Check In Profile for Resumes](#)" on page 3-52.

3.2.7.2.1 Create a Profile Rule for the Hidden Metadata Fields To create a profile rule for hidden metadata fields:

1. Open the Rules tab on the [Configuration Manager Application Page](#), and select **Add**.

The [Add/Edit Rule Screens](#) is displayed.

2. On the General tab, enter the name of the rule in the Name field (for example, NoExtraFields).
3. Optionally, enter a description for the global rule.
4. Add and define the Title metadata field as follows:
 - a. On the Fields tab, click **Add**.
The [Add Rule Field Screen](#) is displayed.
 - b. Select **Title** from the Field Name option list.
 - c. Select a general position from the Field Position option list.

- d. Click **OK**.
The [Add/Edit Rule Field 'name' Screen](#) is displayed.
 - e. Select **Hidden** from the Type option list (to ensure that this metadata field does not display on the Check In, Update, Content Information, and Search pages).
 - f. Optionally, enter a statement in the Required Message field.
 - g. Select the **Is derived field** check box and click the corresponding **Edit** button.
The [Edit Derived Value: Conditions Tab](#) is displayed.
 - h. On the Conditions tab, click **Add**.
The [Edit Derived Value: Add Condition Screen](#) is displayed.
 - i. Enter the name of the field condition (for example, HRsEyesOnly).
 - j. Click **OK**.
The Add Condition screen closes and the clause-generating fields display on the lower pane of the Conditions tab.
 - k. In the lower Value field, enter a confidential string (for example, No specific title). This will help to prevent unauthorized users from using the Title metadata field to search for and retrieve the documents checked in using this profile.
 - l. Click **OK**.
The Edit Derived Value screen closes and the computed Idoc Script clause is added to the derived field text pane.
 - m. Click **OK**.
The Add Rule Field screen closes and the Title metadata field is added to the Fields list.
5. Add and define the Author metadata field as follows:
- a. On the Fields tab, click **Add**.
 - b. Select **Author** from the Field Name option list.
 - c. Select a general position from the Field Position option list.
 - d. Click **OK**.
 - e. Select **Hidden** from the Type option list (to ensure that this metadata field does not display on the Check In, Update, Content Information, and Search pages).
 - f. Optionally, enter a statement in the Required Message field.
 - g. Select the **Is derived field** check box and click the corresponding **Edit** button.
 - h. On the Conditions tab, click **Add**.
 - i. Enter the name of the field condition (for example, HRsEyesOnly2).
 - j. Click **OK**.
 - k. Select **Author** from the Field option list.
 - l. Select **Matches** from the Operation option list.
 - m. Click **Select**.

The **User View Screen** displays. Select the applicable user name. (For example, select an HR employee or whoever is authorized to view the documents checked in using this profile. This will help ensure that unauthorized users cannot search and retrieve these documents using the Author metadata field.)

- n. Click **OK**.

The User View screen closes and the selected user is entered in the upper Value field.
- o. Click **Add**.

The clause is added to the clause pane.
- p. Click **OK**.
- q. Click **OK**.
6. Add and define the Security Group metadata field as follows:
 - a. On the Fields tab, click **Add**.
 - b. Select **Security Group** from the Field Name option list.
 - c. Select a general position from the Field Position option list.
 - d. Click **OK**.
 - e. Select **Hidden** from the Type option list (to ensure that this metadata field does not display on the Check In, Update, Content Information, and Search pages).
 - f. Optionally, enter a statement in the Required Message field.
 - g. Select the **Is derived field** check box and click the corresponding **Edit** button.
 - h. On the Conditions tab, click **Add**.
 - i. Enter the name of the field condition (for example, HRsEyesOnly3).
 - j. Click **OK**.
 - k. Select **Security Group** from the Field option list.
 - l. Select **Matches** from the Operation option list.
 - m. Select an applicable choice from the Value option list.

For example, select HR or any other department that is authorized to view the documents checked in using this profile. This helps ensure that unauthorized users cannot search and retrieve these documents using the Security Group metadata field.
 - n. Click **Add**.
 - o. Click **OK**.
 - p. Click **OK**.
7. Add and define the Content ID metadata field as follows:
 - a. On the Fields tab, click **Add**.
 - b. Select **Content ID** from the Field Name option list.
 - c. Select a general position from the Field Position option list.
 - d. Click **OK**.

- e. Select **Hidden** from the Type option list (to ensure that this metadata field does not display on the Check In, Update, Content Information, and Search pages).
 - f. Optionally, enter a statement in the Required Message field.
 - g. Select the **Is derived field** check box and click the corresponding **Edit** button.
 - h. On the Conditions tab, click **Add**.
 - i. Enter the name of the field condition (for example, HRsEyesOnly4).
 - j. Click **OK**.
 - k. Select **Content ID** from the Field option list.
 - l. Select **Begins With** from the Operation option list.
 - m. Enter a confidential string or, optionally, click **Select**.

The [Edit Derived Value: Select Field Screen](#) is displayed. You can select a content item from the list. However, to ensure greater security, you should enter a unique string (for example, Res). This helps ensure that unauthorized users cannot search and retrieve these documents using the Content ID metadata field.
 - n. Click **OK** (if you selected a content item from the [Content Item View Screen](#)).
 - o. Click **Add**.
 - p. Click **OK**.
 - q. Click **OK**.
8. Add and define the Revision metadata field as follows:
- a. On the Fields tab, click **Add**.
 - b. Select **Revision** from the Field Name option list.
 - c. Select a general position from the Field Position option list.
 - d. Click **OK**.
 - e. Select **Hidden** from the Type option list (to ensure that this metadata field does not display on the Check In, Update, Content Information, and Search pages).
 - f. Optionally, enter a statement in the Required Message field.
 - g. Select the **Is derived field** check box and click the corresponding **Edit** button.
 - h. On the Conditions tab, click **Add**.
 - i. Enter the name of the field condition (for example, HRsEyesOnly5).
 - j. Click **OK**.
 - k. Select **Revision** from the Field option list.
 - l. Select **Begins With** from the Operation option list.
 - m. Enter a confidential string in the upper Value field (for example, Res). This helps ensure that unauthorized users cannot search and retrieve these documents using the Revision metadata field.
 - n. Click **Add**.
 - o. Click **OK**.

The Add Rule screen closes.

3.2.7.2.2 Create a Profile Rule for the Visible Metadata Fields To create a profile rule for visible metadata fields:

1. On the Rules tab, select **Add**.
2. On the General tab, enter the name of the profile rule in the Name field (for example, VisibleFields).
3. Optionally, enter a description for the profile rule.
4. Add and define the Type metadata field as follows:
 - a. On the Fields tab, click **Add**.
 - b. Select **Type** from the Field Name option list.
 - c. Select a general position from the Field Position option list.
 - d. Click **OK**.
 - e. Select **Label** from the Type option list (to make this a read-only metadata field on the Check In, Update, Content Information, and Search pages).
 - f. Optionally, enter a statement in the Required Message field.
 - g. Select the **Use default value** check box, and click the corresponding **Edit** button.
 - h. On the Conditions tab, click **Add**.
 - i. Enter the name of the field condition (for example, ResumeType).
 - j. Click **OK**.
 - k. In the lower Value field, enter **Resume**.
 - l. Click **OK**.
 - m. Select the **Is derived field** check box and click the corresponding **Edit** button.
 - n. On the Conditions tab, click **Add**.
 - o. Enter the name of the field condition (for example, ResumeType2).
 - p. Click **OK**.
 - q. In the lower Value field, select an appropriate document type from the Value option list (for example, HRresumes).
 - r. Click **OK**.
 - s. Click **OK**.
5. Add and define the Comments metadata field as follows:
 - a. On the Fields tab, click **Add**.
 - b. Select **Comments** from the Field Name option list.
 - c. Select a general position from the Field Position option list.
 - d. Click **OK**.
 - e. Select **Edit** from the Type option list (to allow this metadata field to be editable on the Check In, Update, Content Information, and Search pages).
 - f. Select the **Use default value** check box and click the corresponding **Edit** button.

- g. On the Conditions tab, click **Add**.
- h. Enter the name of the field condition (for example, PositionAppliedFor).
- i. Click **OK**.
- j. In the lower Value field, enter an appropriate statement (for example, Please specify the position title).
- k. Click **OK**.
- l. Click **OK**.
- m. Click **OK**.

3.2.7.2.3 Create the Black-Hole Check In Profile for Resumes To create the black-hole checkin profile:

1. Open the Profile tab on the [Configuration Manager Application Page](#) and click **Select**.
The [Add Profile Screen](#) is displayed.
2. Select **Type** from the Field Name drip down option list.
3. Click **OK**.
4. Click **Add** on the Profiles tab.
The [Add Profile Screen](#) is displayed.
5. Enter the name of the profile (for example, BlackHoleResumeCheckIn).
6. Click **OK**.
The [Add/Edit Profile Screen](#) is displayed.
7. Enter the profile description in the Description field (for example, For internal user resumes only).
8. Select **HRresumes** (or the equivalent option) from the Trigger option list.
9. Click **Add** to include the rules in this profile.
The [Add Rule Screen](#) is displayed.
10. Select the **NoExtraFields** rule from the Name option list.
11. Select a general priority placement from the Rule Priority option list.
12. Click **OK**.
13. Click **Add**.
14. Select the **VisibleFields** rule from the Name option list.
15. Select a general priority placement from the Rule Priority option list.
16. Click **OK**.
17. Click **OK**.
The Add Profile screen closes and the profile is added to the list of profiles on the Profiles tab.

3.2.7.3 Global Rule to Restrict Content Check-In Based on User Role

This example shows how to create a global rule that can validate metadata fields when users check in content. The global rule validates the data in a request, and returns an

error message if the data is incorrect. Specifically, this example shows how to allow only an administrator to check in content that specifies ADACCT as the Content Type.

3.2.7.3.1 Enable Content Server to Issue a Fatal Error Upon a Global Rule Violation

1. In a text editor, open the config.cfg file:

IntradocDir/config/config.cfg

2. Add the following configuration setting:

IsDpSubmitErrorFatal=true

3. Close and save the file.
4. Restart the Content Server.

3.2.7.3.2 Create a Global Rule to Restrict Content Type Check-Ins This global rule validates the value for dDocType and ensures that an administrator is checking in an ADACCT document. However, the rule is configured to affect only the Check In and Update pages.

1. Open the Rules tab on the [Configuration Manager Application Page](#), and click **Add**.

The [Add/Edit Rule Screens](#) is displayed.

2. On the General tab, enter the name of the global rule in the Name field (for example, FailOnCheckInError).
3. Optionally, enter a description for the global rule.
4. Select the **Is global rule with priority** check box. (You can optionally change the priority number.)
5. Select the **Use rule activation condition** check box and click the corresponding **Edit** button.

The [Edit Activation Condition Screen Tabs](#) is displayed.

6. Click **Add**.

The [Edit Activation Condition: Add Condition Screen](#) is displayed.

7. Enter the name of the condition in the Name field (for example, CheckIn).
8. Click **OK**.

The Add Condition screen closes and the General Tab is displayed. The clause-generating tabs display on the lower pane.

9. Select the **Use event** check box.
10. Select the **On Submit** check box.
11. Select the **Use action** check box.
12. Select the **Check in new**, **Check in selected**, and **Content update** check boxes.
13. Click **OK**.

The Edit Activation Condition screen closes and the activation condition clause is entered into the Use rule activation condition text pane.

14. Click the **Fields** tab.

The [Add/Edit Rule Field 'name' Screen](#) is displayed.

15. Click Add.

The [Add Rule Field Screen](#) is displayed.

16. Select Type from the Field Name list.**17. Optionally, select a general position** from the Field Position list.**18. Click OK.**

The [Add/Edit Rule Field 'name' Screen](#) is displayed.

19. Select the Is derived field check box and click the corresponding **Edit** button.

The [Edit Derived Value: Conditions Tab](#) is displayed.

20. Click the Custom tab.

The [Edit Derived Value: Custom Tab](#) is displayed.

21. Select the Custom check box and enter the following Idoc Script:

```
<$if dDocType like "ADACCT" and not userHasRole("admin")$>  
<$abortToErrorPage("Only administrators can use ADACCT.")$>  
<$endif$>
```

22. Click OK.**23. Click OK.****24. Click OK.**

The rule is added to the list of Rules.

3.2.7.4 Global Rule to Restrict Content Type Metadata Changes

This example shows how to create a global rule that can validate metadata fields when users check in content. The global rule validates the data in a request, and returns an error message if the data is incorrect. Specifically, this example shows how to allow only an administrator to change the content type of a checked-in document.

3.2.7.4.1 Enable Content Server to Issue a Fatal Error Upon a Global Rule Violation

1. In a text editor, open the config.cfg file:

IntradocDir/config/config.cfg

2. Ensure that you set this configuration earlier:

```
IsDpSubmitErrorFatal=true
```

3. Close and save the file.**4. Restart the Content Server.**

3.2.7.4.2 Create a Global Rule to Restrict Content Type Changes This global rule validates the value for dDocType and ensures that an administrator is changing the content type of a checked-in document. However, it is configured to affect only the Check In page.

1. Open the Rules tab on the [Configuration Manager Application Page](#) and click **Add**.

The [Add/Edit Rule Screens](#) is displayed.

2. On the General tab, enter the name of the global rule in the Name field (for example, FailOnCheckInError).**3. Optionally, enter a description** for the global rule.

4. Select the **Is global rule with priority** check box. (You can optionally change the priority number.)
5. Select the **Use rule activation condition** check box and click the corresponding **Edit** button.

The [Edit Activation Condition Screen Tabs](#) is displayed.

6. Click **Add**.

The [Edit Activation Condition: Add Condition Screen](#) is displayed.

7. Enter the name of the condition in the Name field (for example, CheckIn).

8. Click **OK**.

The Add Condition screen closes and the Edit Activation Condition is displayed. The clause-generating tabs display on the lower pane.

9. Select the **Use event** check box.
10. Select the **On Submit** check box.
11. Select the **Use action** check box.
12. Select the **Content update** check box.
13. Click **OK**.

The Edit Activation Condition screen closes and the activation condition clause is entered into the Use rule activation condition text pane.

14. Click the **Fields** tab.

The Fields Tab is displayed.

15. Click **Add**.

The [Add Rule Field Screen](#) is displayed.

16. Select **Type** from the Field Name list.
17. Optionally, select a general position from the Field Position list.
18. Click **OK**.

The [Add/Edit Rule Field 'name' Screen](#) is displayed.

19. Select the **Is derived field** check box and click the corresponding **Edit** button.

The [Edit Derived Value: Conditions Tab](#) is displayed.

20. Click the **Custom** tab.

The [Edit Derived Value: Custom Tab](#) is displayed.

21. Select the **Custom** check box and enter the following Idoc Script:

```
<$oldType = getValue("DOC_INFO", "dDocType")$>
<$newType = getValue("#local", "dDocType")$>
<$if not (newType like oldType) and not (userHasRole("admin"))$>
<$abortToErrorPage("Only administrators can change dDocType.")$>
<$endif$>
```

22. Click **OK**.
23. Click **OK**.
24. Click **OK**.

The rule is added to the list of Rules.

Managing Workflows

This chapter provides task information as well as conceptual and reference information for using the workflow functionality available with Content Server.

This chapter contains the following topics:

- ["Introduction to Workflows"](#) on page 4-1
- ["Planning a Workflow"](#) on page 4-7
- ["Creating a Criteria Workflow"](#) on page 4-11
- ["Creating a Basic Workflow"](#) on page 4-17
- ["Customizing Workflows"](#) on page 4-24
- ["Workflow And Script Templates"](#) on page 4-35
- ["Workflow Scenarios"](#) on page 4-39
- ["Workflow Tips and Tricks"](#) on page 4-41

4.1 Introduction to Workflows

This section provides an overview to workflows, their uses, and the advantages they can provide for your business operation. It discusses the following topics:

- ["Workflow Overview"](#) on page 4-1
- ["Workflow Steps"](#) on page 4-2
- ["Workflow Step Evaluation Process"](#) on page 4-5
- ["Workflow Participation"](#) on page 4-7

4.1.1 Workflow Overview

Workflows are used to specify how content is routed for review, approval, and release to the system.

For example, using a workflow ensures that the appropriate people in the Legal Department, Human Resource Department, and in upper management review and approve new policies before being released on the organization's intranet. Or a workflow could be set up to obtain timely approval and sign-off on marketing campaigns that are produced in-house. Users receive e-mail notification when content in a workflow is ready for review.

Designing an effective workflow is an iterative process. Workflows are planned, refined, and re-defined as the process is implemented. Good planning in the beginning

can eliminate many problems before the workflow is enabled. See "[Planning a Workflow](#)" on page 4-7 for details about the planning process.

4.1.1.1 Types of Workflows

There are three types of workflows:

- A *criteria workflow* is used for content that enters a workflow automatically based on metadata that matches predefined criteria.
- A *basic workflow* defines the review process for specific content items, and must be initiated manually.
- In addition to these two basic types, *sub-workflows* can be used. Sub-workflows do not have an initial contribution step, but are entered via a workflow jump. They are created in the same manner as criteria workflows. Sub-workflows are useful for splitting large, complex workflows into manageable pieces.

4.1.1.2 Workflow Advantages and Disadvantages

Setting up workflows for your business processes can provide several advantages:

- Workflows provide good reporting metrics; by using workflows, an audit trail can be created of who signed off on content at various points of the life cycle of the content.
- Workflows help you get the right information to the relevant person, and the relevant information to the right person.
- Designing a workflow forces you to examine and understand your business processes, helping you find areas that can be improved.

The same elements that provide advantages can also be disadvantages: you will be forced to examine your business processes and map out how you want to use workflows. This can be a time-consuming process, but the end result is worth it.

4.1.2 Workflow Steps

Steps define the process and the functionality of the workflow. Each workflow can include multiple review and notification *steps*, and multiple reviewers can be assigned to approve or reject the content at each step. For each step in a workflow, a set of users and a *step type* must be defined.

The users defined for a step can perform only the tasks allowed for that step type:

Step Type	Description
Contribution	The initial step of a Basic workflow. Administrators define the contributors when the workflow is created.
Auto-Contribution	The initial step of a Criteria workflow. There are no predefined users involved in this step. The contributor who checks in a content item that enters the workflow process automatically becomes part of the workflow.
Review	Users can only approve or reject the content; editing is not allowed.
Review/Edit Revision	Users can edit the content if necessary and then approve or reject it, maintaining the revision.
Review/New Revision	Users can edit the content if necessary and then approve or reject it, creating a new revision.

After a workflow is enabled, it goes through several specific stages:

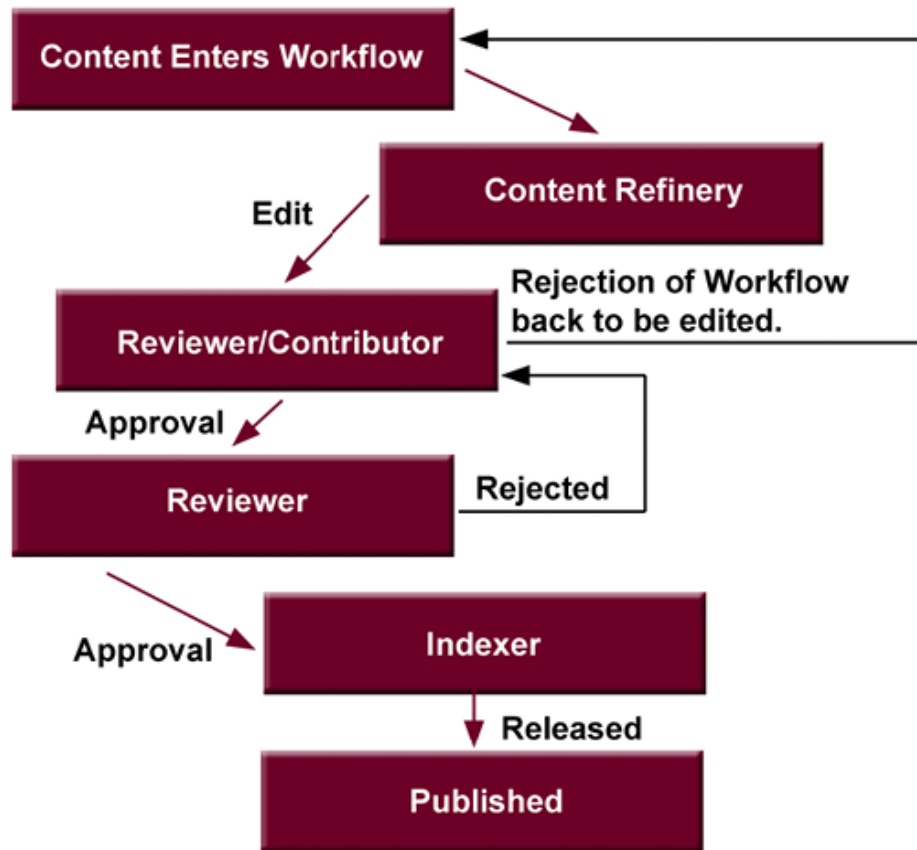
- When a content item is approved by the minimum number of reviewers for a particular step, it goes to the next step in the workflow.
- If the step is defined with 0 approvals required, the reviewers are notified, but the content goes to the next step automatically. This is useful to ensure that the proper people are aware that an item is in the workflow process.
- If any reviewer rejects the content, it goes back to the most recent Review/Edit Revision or Review/New Revision step. If there is no such step, the content goes back to the original author.
- Depending on how the edit criteria is defined, the most recent Review/Edit Revision or Review/New Revision step may result in a new revision or an updated revision.
- A revision may be released to the system:
 - After it exits the workflow: When content is approved at the last step in the workflow, the content item is released to the system.
 - Before it exits the workflow: When you set up a side effect that releases a document from edit state, the document is available for indexing, searching, and archiving. This is useful primarily for business routing that doesn't require publishing to the web, for example an expense report.
- Generally, if a Basic workflow contains multiple content items, none of them will be released to the system until all of the items have been released from completion of the workflow. However, if you release a content item from edit state as a side effect, that content item can be released without waiting for all items in the Basic workflow.

The standard workflow process can be customized and made more flexible by using *jumps*, *tokens*, and *aliases*. These are discussed fully in "[Customizing Workflows](#)" on page 4-24.

- *Tokens* and *aliases* provide flexibility in specifying users in a workflow. Tokens are variables that can be used to designate unknown users and aliases can be used to include a group of people in a workflow step.
- *Jumps* enable you to create conditional statements that can branch content through different paths in the same workflow, or can send content items from a Criteria or sub-workflow to a different Criteria or sub-workflow.
- *Exit conditions* enable you to create conditional statements that can prevent content from moving to the next step unless certain conditions are met. This is useful when metadata could be changed by an external process during a workflow step.
- You can also create a *custom metadata* field and use it to trigger different workflows.

The following illustration shows a general workflow process.

Figure 4–1 Workflow Process



4.1.2.1 Events

Each step in a workflow has three **events**: entry, update, and exit.

- An **entry** event script is evaluated upon entering the step. If the entry event script does not result in a jump or exit, any users, aliases, and tokens are evaluated, and e-mail notifications are sent.
- An **update** event script is evaluated at various points (for example, during the hourly update cycle or on checkin of the revision). Extra exit conditions are evaluated each time the update event script is evaluated.
- An **exit** event script is evaluated when a revision has completed the step's approval requirements and the step's extra exit conditions are met.

Jumps are discussed in more detail in "[Jumps and Events](#)" on page 4-28.

Important : Update and exit event scripts are **not** run when a revision is rejected. Any code that is to be evaluated upon rejection must be located in the *entry* event script for the step that the rejected content is sent to.

4.1.2.2 Workflow Files

This section discusses the files that are created as you initiate and use workflows.

4.1.2.2.1 Companion File The *companion file* is a text file that maintains information about the state of a revision in a workflow. It is only active for the life of the workflow.

- The companion file keeps track of the steps that the revision has been through and maintains the current values of workflow variables.
- Each revision in a workflow has a companion file, which exists as long as the revision remains in the workflow. When a revision is released from a workflow, the corresponding companion file is deleted.
- Companion files are located in the *DomainHome*/ucm/cs/data/workflow/states/ directory. These files are in the HDA file format, and are named by Content ID (for example, HR_004.hda).
- Each companion file contains two sets of data:
 - The *LocalData* Properties section defines the **Parent List** and other workflow variables.
 - The *WorkflowActionHistory* ResultSet section contains a record of the steps, workflow actions, and users that have been involved in the revision's workflow history.

Companion files are deleted when the content item is released from the workflow. To retain a companion file, add the `IsSaveWfCompanionFiles` configuration variable to your `/config/config.cfg` file and set the parameter to TRUE. For more details, see the *Oracle Fusion Middleware Idoc Script Reference Guide*.

4.1.2.2.2 Keys The companion file uses *keys* to keep track of workflow variables. For example, the following keys define the value of the `EntryCount` and `Last Entry` variables for an "Editor" step in a workflow called `Marketing Brochures`:

```
Editor@Marketing Brochures.entryCount=1
Editor@Marketing Brochures.lastEntryTs={ts '2001-05-02 16:57:00'}
```

4.1.2.2.3 Parent List The companion file maintains a *parent list*, which lists the sequence of steps that the revision has been to, starting with the current step and working backward. The parent list is used to determine which step to return to when a file is rejected, when the last step of a workflow is finished, or when an error occurs. For example, the following parent list shows the *Marketing Team*, *Editor*, and *Graphic Artist* steps of the *Marketing Brochures* workflow:

```
WfParentList=Marketing Team@Marketing Brochures#Editor@Marketing Brochures#Graphic Artist@Marketing Brochures#contribution@Marketing Brochures
```

An asterisk (*) in front of a step name in the parent list indicates a jump step.

4.1.3 Workflow Step Evaluation Process

When a revision enters a workflow step, it goes through the following process:

1. The entry script is evaluated.
 - The default entry script that keeps track of the entry count and last entry is updated.
 - Actions (such as additional user notification) are executed.
 - If the jump condition is met and a target step is defined, the revision jumps to another step.
 - If the jump condition is not met, reviewers for the current step are notified that the revision is ready for approval.

- To avoid infinite loops, the entry script of a previously visited step is ignored. The only exception to this is when the step has been restarted using the `wfCurrentStep(0)` symbolic step.
- 2. When the required number of reviewers have approved the revision, the exit script is evaluated.
 - If there is no exit script, the revision goes to the next step in the workflow.
 - If an exit script jump condition is met and a target step is defined, the revision jumps to another step.
- 3. After the exit script is evaluated, the current action state (the `wfAction` workflow variable) is set. The following are the possible actions:
 - APPROVE
 - REJECT
 - CHECKIN
 - CONVERSION
 - META_UPDATE
 - TIMED_UPDATE
 - RESUBMIT
- 4. As a revision moves through the steps of a workflow, each step is added to the parent list. If the revision revisits a step, the parent list "unwinds", or returns to the state it was in when the revision first visited that step. For example:

Revision goes to:	Parent list
Step1	Step1
Step2	Step1#Step2
Step3	Step1#Step2#Step3
Step2	Step1#Step2

- 5. If a revision is rejected, the parent list is checked for the most recent Reviewer/Contributor step, and the revision goes to that step in the workflow.
- 6. When a revision completes the last step in a workflow, the parent list is checked for the most recent jump step with a defined return step. If a return step is found, the revision goes to that step. If there are no jump steps in the parent list, or none of the jump steps have a return step defined, the revision exits the workflow.

4.1.3.1 Status of Items in Workflows

Content items that are in a workflow can have the following statuses:

Status	Criteria Workflow	Basic Workflow
EDIT	The content item has been rejected and returned to the initial contribution step.	The content item is in the initial contribution step, or the content item has been rejected and returned to the initial contribution step.
REVIEW	The content item is in the review process.	The content item is in the review process.

Status	Criteria Workflow	Basic Workflow
PENDING	N/A	The content item has completed all the workflow steps, but other content items in the workflow are not finished. This status occurs only when the workflow includes more than one content item.
DONE	The content item in the workflow is finished.	All of the content items in the workflow are finished.
GENWWW	The content is being converted to web-viewable format.	The content is being converted to web-viewable format.
RELEASED	The revision is available in the content server.	The revision is available in the content server.

4.1.4 Workflow Participation

When participating in a Basic workflow, email is sent to the contributors who need to check in the designated content. Email is also sent to reviewers who are involved in the different steps of a workflow.

The Workflow Content Items page identifies the actions to perform in the workflow. This can be accessed via the **Content Management** tray, under **Active Workflows**. Reviewers can review content, reject or approve content, and view information about the content and the workflow.

If the content is rejected, the Reject Content Item page is displayed. Reviewers can enter a message explaining the reason for rejection. That message is sent to the reviewers assigned to the last step allowing a contribution. Those reviewers can then check out the content, edit it and check the content back in. On the Content Check In form, the reviewer should check the Revision Finished Editing box. The content then goes to the next step in the workflow. If the box is not selected, the content remains in Review status and must be approved before moving on through the workflow.

It is good practice to discuss workflows with the people involved so they are aware of the responsibilities they will have in the process. More information about workflow participation is available in the *Oracle Fusion Middleware User's Guide for Content Server*.

4.2 Planning a Workflow

This chapter describes the steps you should follow to choose a workflow type and plan the workflow. The following topics are discussed:

- ["Pre-design Questions"](#) on page 4-7
- ["Choosing a Workflow Type"](#) on page 4-8
- ["Designing a Workflow"](#) on page 4-9

4.2.1 Pre-design Questions

Before beginning to design a workflow, evaluate how your processes already operate. You may be able to adapt current processes into the workflow. For example, if you already use email loops to manage information between users on a project, can you incorporate that type of scenario into a workflow design?

Is the workflow being used to validate information? Or is it used for collaboration? What specific problem is it addressing? Once you understand the current processes

and their shortcomings, you can make certain to design the workflow to solve the problem.

Ask yourself the following questions when you start to design your workflow:

- Who should be involved in the workflow? What users will receive notification that an item is ready for review? Who will have edit permissions on an item? Who will have final sign-off on an item?

Equally important is to ask who should be left out of a workflow?

How will you train the people who are involved in the workflow?

- What happens when an item is in the workflow? What action will be taken when an item is approved, rejected, or updated? What should occur when an item stays in a workflow too long?
- When does an item need to be escalated to the next stage of a workflow? What is the criteria for determining when a workflow is completed?
- Where do users go to participate in a workflow? Will it be done via a Web interface or some other interface of your design?
- How are approvals and rejections handled? Will you store audit information? Do you need to make provision for approval authentication (a digital signature)?

4.2.2 Choosing a Workflow Type

Consider the following points when you decide which type of workflow to use.

Use a **Basic Workflow** when you need to:

- Specify an 'ad hoc' workflow, one that does not depend on specific criteria to be enabled.
- Route multiple content items to go through the same series of steps. The items go through the steps individually, but are not released at the end of the cycle until all items are finished in the workflow.
- Notify or remind a user to contribute a content item to the workflow.
- Submit items to a workflow manually.
- Specify a workflow that is used infrequently.
- Use a Basic workflow to set up a unique review process or to set up the review process for a group of related content items.
- Specify a user to start the workflow. Content can enter a Basic workflow only when a user with Workflow rights starts the workflow.

Use a **Criteria Workflow** when you need to:

- Have content enter a workflow automatically.
- Route single content items that match specific criteria. You can route multiple items that match the criteria but they do not progress through the workflow as a unit.
- Set up a standardized review process for individual documents.
- Specify a workflow that is used frequently.
- Open the workflow to many users. Users do not need Workflow rights for their content to enter a Criteria workflow.

When deciding which type of workflow to use, keep the following key points in mind:

- If content is checked in with the wrong security group or wrong metadata value, it can enter a Criteria Workflow accidentally.
- If users are frequently processing content through the same Basic workflow, consider setting up a Criteria workflow to automate the process.
- You cannot use the same or overlapping criteria for multiple workflows. If a content item matches the criteria for more than one workflow, it will enter the first workflow in the list.

4.2.2.1 Security Issues

Keep the following security issues in mind when administering workflows:

- Each workflow is associated with a security group.
 - For a Criteria workflow, only content items that are in the same security group will enter the workflow.
 - For a Basic workflow, new content items will be assigned to the security group of the workflow, and existing content items must belong to the workflow's security group.
- A workflow can only jump to another workflow belonging to the same security group.
- The security group of a workflow cannot be changed while the workflow is active. However, the security group of a content item currently in the workflow process can be changed.
- To set up a workflow and start or enable the workflow process, you must have Workflow rights and admin permission for the security group of the content items.
- To set up a workflow you can use a workflow template to initiate contribution steps.
- To participate in a workflow as a contributor, you must have Write permission to the workflow's security group.

4.2.3 Designing a Workflow

To design a workflow:

1. Draw a flowchart of the workflow. (See the flowcharts for the ["Criteria Workflow Process"](#) on page 4-11 and ["Basic Workflow Process"](#) on page 4-18 for examples.)
2. Verify that you have all the metadata needed for the workflow. If not, you should create the necessary metadata prior to setting up the workflow.
3. Set up any aliases you will need for the workflow. Alias creation is discussed in the *Oracle Fusion Middleware System Administrator's Guide for Content Server*.
4. Set up any tokens you will need for the workflow. See ["Creating a Token"](#) on page 4-26 for details.
5. Set up a Basic or Criteria workflow. If workflow templates are available, consider using a template as a starting point. See ["Workflow And Script Templates"](#) on page 4-35 for details.
6. Set up sub-workflows as necessary.
7. Set up jumps as necessary. See ["Setting Up Jumps"](#) on page 4-31 for details.
 - If script templates are available, use them to create the step event scripts.

- If jumps will be used, consider setting up a "master" workflow with sub-workflows for each jump.
8. Test the workflow.
- For a Criteria workflow, check in a test document that matches the defined security group and metadata field value.
 - For a Basic workflow, define test content and start the workflow.
 - Simulate as many approval/rejection scenarios as possible.
 - For workflows that contain jumps, simulate as many event scenarios as possible.
 - Include reviewers in the workflow testing to verify that people understand their roles.

4.2.4 Modifying Workflows

After you have created a workflow, you can change some aspects of the workflow, but not others. If you disable a Criteria workflow or cancel a Basic workflow in order to add or delete steps, any content in the workflow is released (Criteria) or deleted (Basic).

Keep these points in mind as you design your workflow:

You can:

- Modify the criteria for a Criteria workflow.
- Add or delete content items from a Basic workflow.
- Modify step definitions (including reviewers, exit conditions, and events)

You cannot:

- Simply change the order of the steps. You can delete a step and re-create it in a different place, however.
- Simply add steps in the middle of the workflow (new steps are always added to the end of the workflow).

The following tips may help you modify existing workflows. The complexity of these processes points to the need to carefully design workflows before they are implemented. Altering one while it is in use can be a time-consuming and difficult process.

- If you need to reorder steps in an existing workflow, consider the following options:
 - Create a sub-workflow and add a jump to it from an existing step. (See "[About Jumps](#)" on page 4-28 for more information.) You can make this change to an existing step without disabling or canceling the workflow. This option should be considered a short-term fix until you can disable or cancel the workflow and rebuild it as necessary.
 - Add step event scripts to an existing step to define the actions that would normally take place in a separate step. (See "[Jumps and Events](#)" on page 4-28 for more information.) You can make these changes to an existing step without disabling or canceling the workflow. This option should be considered a short-term fix until you can disable or cancel the workflow and rebuild it as necessary.

- If you must disable a workflow in order to modify it (for example, to add a step) all content is immediately released from the workflow.

To disable a workflow without releasing content first clone the workflow to a static workflow which has the same step sequence as the original workflow but which has no step logic. The content will go into a step and stay there until moved.

Next create an update event in the original workflow. This event is triggered by time and pushes the content into the cloned static workflow at the appropriate step.

When the content is out of the original workflow you can disable the workflow, make the necessary changes then re-enable it. Then use the same timed event logic to move the content from the cloned workflow back to the original workflow.

4.3 Creating a Criteria Workflow

Criteria workflows are used to set up a standardized review process for individual documents. They define the review process for content that enter the workflow automatically when they match predefined criteria. For example, any time a new purchase order is generated, it might be automatically routed to specific reviewers for approval.

A Criteria workflow includes the following:

- Criteria defined by a security group and one metadata field.
- Auto-contribution step with no predefined users.
- One or more reviewer steps with one or more reviewers per step.

A *sub-workflow* is a workflow that does not have an initial contribution step.

Sub-workflows are useful for splitting large, complex workflows into manageable pieces.

Content can enter a sub-workflow only through a jump from a Criteria workflow.

This section discusses the following topics:

Concepts

- ["Criteria Workflow Process"](#) on page 4-11
- ["Criteria Workflow Tips"](#) on page 4-13

Tasks

- ["Setting Up a Criteria Workflow"](#) on page 4-14
- ["Changing a Criteria Workflow or Sub-workflow"](#) on page 4-16
- ["Disabling a Criteria Workflow or Sub-workflow"](#) on page 4-17

Sub-workflows are set up using the same procedure as Criteria workflows with a few minor exceptions. Those exceptions are noted in the procedure for setting up Criteria workflows.

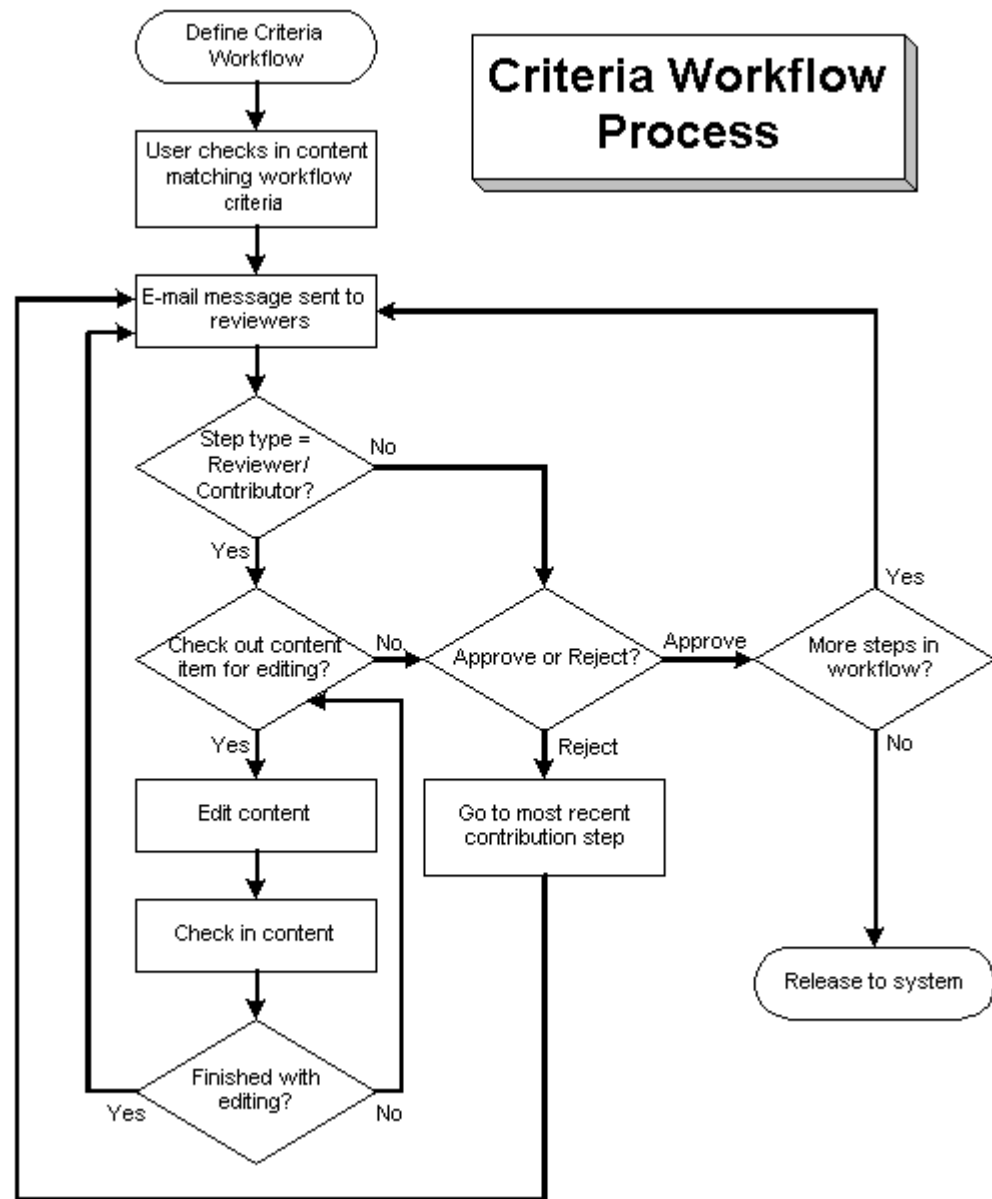
4.3.1 Criteria Workflow Process

The following steps briefly explain the Criteria workflow process:

1. A user with Workflow rights sets up the Criteria workflow by defining the following:

- Security group
 - Metadata field and value (for example, *ContentType matches PurchaseOrder*)
 - Review steps and reviewers for each step
 - The number of approvals required for each step. For example, do all reviewers need to approve it before it can move to the next step?
 - If a group of people need to be included in an alias or if a token should be set up, perform those tasks ahead of time.
2. A user with Workflow rights starts the Criteria workflow by enabling it.
 3. When content is checked in with the defined security group and metadata field value, the content enters the workflow.
 4. Reviewers for the first step are notified by e-mail that the revision is ready for review.
 5. The reviewers approve or reject the revision.
 - If the step is a reviewer/contributor step, the reviewers can check out the revision, edit it, and check it back in before approving it. For example, editors may need to alter the content of an item in the workflow.
 - If a user rejects the revision, the workflow returns to the previous contribution step, and the users for that step are notified by e-mail.
 - When the minimum number of users have approved the revision, it goes to next step. (If the minimum number of approvals is 0, the revision moves to the next step automatically.)
 6. When all steps are complete, the revision is released to the system.

Figure 4-2 Criteria Workflow Process



4.3.2 Criteria Workflow Tips

Each Criteria workflow must have unique criteria. If a content item matches the criteria for two different workflows, it will enter the first workflow in the list of defined workflows.

- All users assigned to the Criteria workflow must have Read permission to the selected security group. Contributors must have Write permission to the selected security group to be able to check the revision in and out.
- You cannot add or delete steps while a Criteria workflow is enabled.
- Any content items checked in while a Criteria workflow is disabled will bypass the workflow process and be released to the system.
- Disabling a Criteria workflow releases any revisions still in the workflow process to the system.

- A Criteria workflow can use jumps to sub-workflows and other Criteria workflows in the same security group, and can jump to other steps in the same workflow.
- Consider making at least one step in the workflow a Reviewer/Contributor step so that rejected revisions go back to that step rather than back to the original author.

4.3.3 Setting Up a Criteria Workflow

Keep these points in mind when setting up a criteria workflow:

- All users assigned to the workflow must have Read permission to the selected security group, and Contributors must have Write permission. If the security group of a checked in item does not match the security group of the workflow, the item will not enter the workflow.
- Define aliases and tokens before setting up your workflow.
- When you use a template, you may use the reviewers from the selected template.
- Make sure that the criteria is not the same as for any other Criteria workflows. If a content item matches the criteria for two different workflows, it will enter the first workflow in the list of workflows.
- If you select Content ID as the Field **and** your content server uses an Oracle database, you must enter all uppercase characters for the Value. All other fields can have mixed case.
- Also, if you select ContentID as the Field, you can select an existing content item by clicking **Select** below the Value field.
- You can enter zero (0) in the **At least this many reviewers** field to notify reviewers that the revision has reached the step, but reviewers will not be able to approve, reject, or edit the revision at that step. The workflow will pass to the next step automatically.

Follow these steps to create a Criteria workflow or sub-workflow:

1. Display the [Workflow Admin: Criteria Tab](#) from the Workflow Admin applet.
2. Click **Add**.
The [New/Edit Criteria Workflow Screen](#) is displayed.
3. Enter a name in the **Workflow Name** field. The Workflow Name has a maximum field length of 30 characters and cannot contain special characters (; @ &, and so on). The workflow name cannot be changed after the workflow is created.
4. Enter a detailed description for the workflow in the **Description** field.
5. Select the Security Group from the list. This is the security group to which the content items in this workflow belongs.
6. Select an option from **Original Author Edit Rule**. This specifies whether to permit the original author to edit the existing revision or create a new revision if the content item is rejected.
7. If you want to use a workflow template, select the **Use Template** check box and select the template name. This box is displayed only if a template currently exists. See "[Workflow And Script Templates](#)" on page 4-35 for details.
8. Determine the type of workflow:
 - To create a Criteria workflow, select the **Has Criteria Definition** check box.

- To create a sub-workflow, clear the **Has Criteria Definition** check box.

You can change the type of workflow later by clearing or selecting the **Has Criteria Definition** check box
- 9. For a Criteria workflow, define the criteria by choosing the appropriate **Field**, **Operator**, and **Value**. For example, *Review Process matches HRBenefits*.
- 10. Click **OK**.
- 11. If a template was not used to create steps, or if you want to add another step, click **Add** in the right pane of the Workflow Admin screen. The [Add New/Edit Step Screen](#) is displayed.
- 12. Enter an appropriate **Name** and **Description** for the step. The name cannot be changed after the step is created. The name is usually descriptive of the step (for example, *EditorialReview* or *TechnicalReview*).
- 13. Specify the authority level of the users for the step:
 - Users can review the current revision—Users can approve or reject the revision but cannot edit the revision.
 - **Users can review and edit (replace) the current revision**—Users can edit the revision, approve it, or reject it. Any edit will not update the revision of the content item.
 - **Users can review the current revision or create new revision**—Users can edit the revision, approve it, or reject it. Any edit will update the revision of the content item. This preserves the original content and provides an audit trail of changes.
- 14. Select the type of users to be added to the step. More than one type of user can be defined for a step:
 - To add a group of users defined by an alias, click **Add Alias**. The [Add Alias to Step Screen](#) is displayed. Choose the alias from the displayed list.
 - To add individual user logins, click **Add User**. The [Add User to Step](#) is displayed.
 - To narrow the list of users, select the **Use Filter** check box, click **Define Filter**, select the filter criteria, and click **OK**.
 - To select a range of users, click one user and then hold down the Shift key while clicking another user name.
 - To select users individually, hold down the Ctrl key while clicking each user name.
 - To add a variable user defined by a token, click **Add Token**. The [Add Token to Step](#) screen is displayed. See "[Creating a Token](#)" on page 4-26 for details about creating tokens.
- 15. Click **OK**.
- 16. Click the **Exit Conditions** tab.
- 17. Specify how many reviewers must approve the revision before it passes to the next step.
 - To require approval by all reviewers, select **All reviewers**.
 - To specify a minimum number of reviewers who must approve the revision, select **At least this many reviewers** and enter the number.

18. Typically, exit conditions are useful when metadata could be changed by an external process during the workflow step. Use the following instructions if the step requires additional exit conditions to be able to pass to the next step:
 - a. Select the **Use Additional Exit Condition** check box.
 - b. Click **Edit**.
 The [Edit Additional Exit Condition Screen](#) is displayed. You can use this screen to select additional criteria from option lists.
 - c. Select a workflow condition or a metadata field from the **Field** option list.
 - d. Select an operator from the **Operator** option list. This is a dependent choice list that shows operators associated with the Field.
 - e. Select a value from the **Value** option list. This is a dependent list based on the option chosen as the Field.
 - f. Click **Add** to add the conditional statement to the Condition Clause. The clause appears in the Condition Clause box. Multiple clauses can be appended with AND statements.
 - g. Repeat for as many conditions as required. To modify an expression, select it in the Condition Clause box, change the Field, Operator, or Value, and click **Update**.
 - h. To modify the condition expression, select the **Custom Condition Expression** check box and edit the script (for example, use OR not AND for a condition). The additional exit conditions must be Idoc Script statements that evaluate to true or false. Do not enclose the code in Idoc Script tags <\$ \$>.

Caution: If you clear the **Custom Condition Expression** check box, the expression reverts to its original definition; all modifications are lost.

 - i. Click **OK**.
19. If the workflow requires conditional steps or special processing, click the Events tab and add the appropriate scripts. See "[Setting Up Jumps](#)" on page 4-31 for more information.
20. Click **OK**.
21. Add, edit, and delete steps as necessary to complete the workflow.
 - To add another step to the workflow, repeat steps 11 through 20.
 - To edit an existing step, select the step and click **Edit**.
 - To delete an existing step, select the step and click **Delete**.
22. Make sure that the correct workflow is selected in the left pane, and click **Enable**.
 A confirmation screen is displayed.
23. Click **Yes** to activate the selected workflow.

4.3.4 Changing a Criteria Workflow or Sub-workflow

To change an existing Criteria workflow or sub-workflow:

1. Display the [Workflow Admin: Criteria Tab](#).

2. Select the workflow you want to change in the left pane.
3. If you want to add or delete steps, disable the workflow.
4. Use the **Add**, **Edit**, and **Delete** buttons in the left and right panes to change the following:
 - workflow description
 - security group
 - type of workflow (Criteria or sub-workflow)
 - criteria
 - step description
 - type of step (reviewer, contributor same revision, contributor new revision)
 - users
 - events
 - number of approvals required
 - exit conditions

You can add users to a step while the Criteria workflow is enabled, but if any revisions are currently at that step in the workflow, the new users will not be notified immediately. They will be notified once the scheduled workflow system event occurs. This does a `TIMED_UPDATE` on all items in the workflow.
5. If the workflow is disabled, make sure that the correct workflow is selected in the left pane and click **Enable**.
A confirmation screen is displayed.
6. Click **Yes** to activate the selected workflow.

4.3.5 Disabling a Criteria Workflow or Sub-workflow

To disable a criteria workflow or sub-workflow:

1. Display the [Workflow Admin: Criteria Tab](#).
2. Select the workflow.
3. Click **Disable**.
4. If there are any content items still in the workflow process, you will be notified that all of the content revisions will be released. If you don't want to release the content, click **No**.
5. Click **Yes** to disable the workflow.

The status of the workflow changes to **Disabled**.

4.4 Creating a Basic Workflow

A Basic workflow defines the review process for specific content items. It is different from a Criteria workflow in that you do not need to define criteria for content to enter the workflow. A Basic workflow is set up and initiated manually.

A Basic workflow includes the following:

- One or more content items.

- Initial contribution step with one or more contributors.
- Zero or more review steps with zero or more reviewers per step.

This section discusses the following topics:

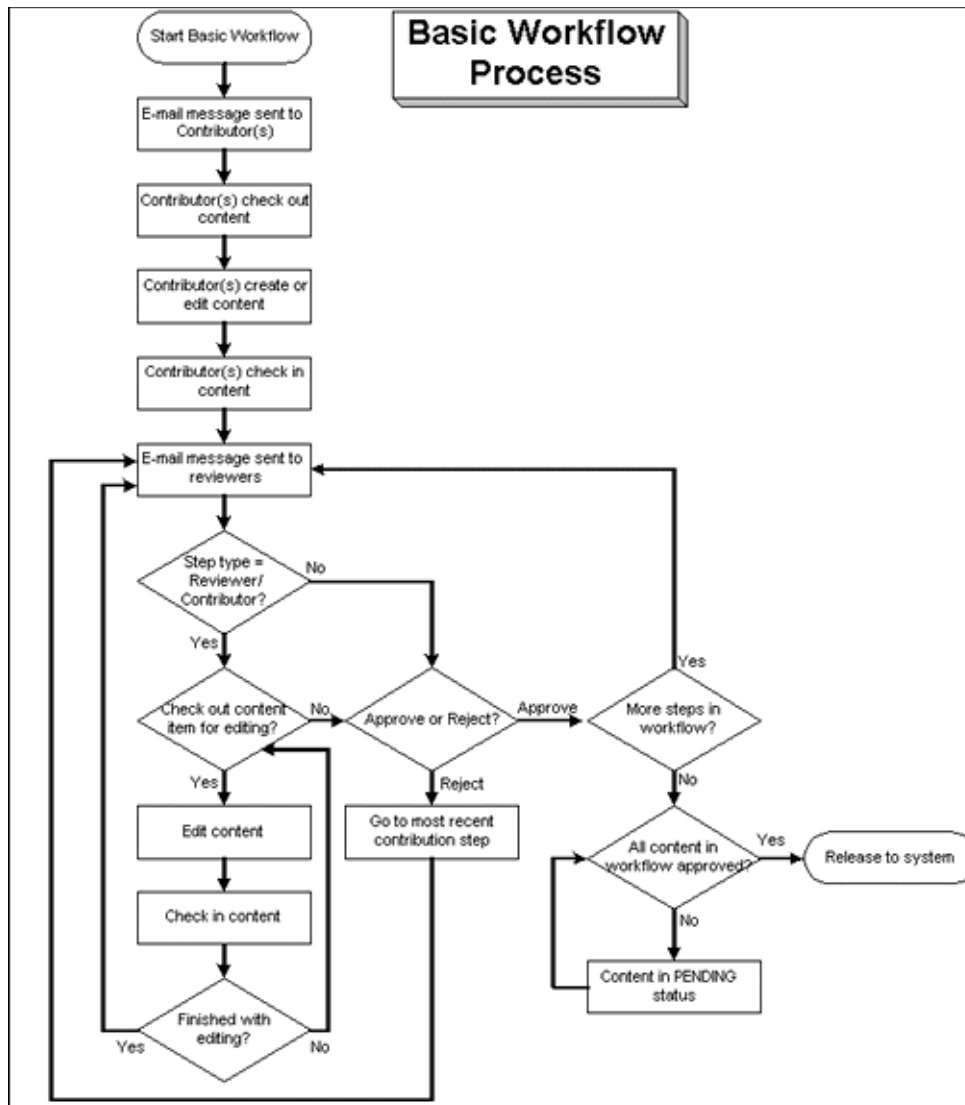
- ["Basic Workflow Process"](#) on page 4-18
- ["Basic Workflow Tips"](#) on page 4-19
- ["Setting Up a Basic Workflow"](#) on page 4-20
- ["Changing a Basic Workflow"](#) on page 4-23

4.4.1 Basic Workflow Process

The following steps explain the Basic workflow process:

1. A user with Workflow rights sets up the Basic workflow by defining the following items:
 - Content: New content can be created and/or existing content can be selected. After going through the workflow, new content is released to the system at revision 1, and existing content is released to the system at the next revision number for that content item.
 - Initial contributors
 - Review steps, reviewers for each step and number of approvals required for each step.
2. A user with Workflow rights starts the Basic workflow by enabling it.
3. An e-mail is sent to the contributors.
4. Any of the contributors can check out and then check in a file for each content item in the workflow.
5. Reviewers for the first step are notified by e-mail that the revisions are ready for review.
6. The reviewers approve or reject the revisions.
 - If the step permits editing, the reviewers can check out the revisions, edit them, and check them back in before approving it.
 - If a user rejects a revision, the revision returns to the previous contribution step, and the users for that step are notified by e-mail.
 - When the minimum number of users have approved the revision, it goes to next step. (If the minimum number of approvals is 0, the revision moves to the next step automatically.)
7. Generally, if a Basic workflow contains multiple files, none of them will be released to the system until all of the files have been released from completion of the workflow. Completed content items stay in PENDING status until the last revision is approved. However, if you release a content item from edit state as a side effect, that content item can be released without waiting for all items in the Basic workflow.
8. When all steps are complete and all revisions are approved, the revisions are released to the system.

Figure 4–3 Basic Workflow Process



4.4.2 Basic Workflow Tips

- For new content, the Content ID defined in the workflow is the Content ID that will be applied when the revision is released to the system. The Content ID cannot be changed after it is created.
- You cannot add a content item to multiple basic workflows. This will cause an error message to appear and the workflow will not be enabled.
- New content will be assigned to the security group of the Basic workflow.
- The security group of an existing revision must match the security group of the Basic workflow.
- All users assigned to the Basic workflow must have Read permission to the selected security group. Contributors must have Write permission to the selected security group to be able to edit revisions.
- You cannot add, edit, or delete review steps while a Basic workflow is active.

- You can cancel an active workflow, but any revisions in the workflow are deleted from the system. Any edits that have been made to the files are lost unless they have also been saved on a local hard drive.
- An inactive Basic workflow can be reused, but it must be started manually each time.
- A Basic workflow can use jumps, but only to other steps in the same workflow. A Basic workflow cannot jump to a sub-workflow.

4.4.3 Setting Up a Basic Workflow

Keep these points in mind before creating a Basic workflow:

- All users assigned to the workflow must have Read permission to the selected security group, and Contributors must have Write permission.
- When you use a template, you must change the reviewers if they are different from those defined in the selected template.
- Do not add a content item to multiple basic workflows. This causes errors and the workflow will not be enabled.
- You can enter zero (0) in the **At least this many reviewers** field to notify reviewers that the revision has reached the step, but reviewers will not be able to approve, reject, or edit the revision at that step. The workflow will pass to the next step automatically.

Use the following steps to create a Basic workflow:

1. Display the [Workflow Admin: Workflows Tab](#). The default tab view is that of a Basic workflow.
2. Click **Add**.
The [Add New/Edit Workflow Screen](#) is displayed.
3. Enter a name in the **Workflow Name** field. The Workflow Name has a maximum field length of 30 characters and cannot contain special characters (; @ &, and so on). The **Workflow Name** cannot be changed after the workflow is created.
4. Enter a detailed description for the workflow in the **Description** field.
5. Select the Security Group from the list. This is the security group to which the content items in this workflow belong.
6. Select an option from **Original Author Edit Rule**. This specifies whether to permit the original author to edit the existing revision or create a new revision if the content item is rejected.
7. If you want to use a template, select the **Use Template** check box and select the template name. This box is displayed only if a template exists. See "[Workflow And Script Templates](#)" on page 4-35 for details.
8. Click **OK**.
9. To add a new content item to the workflow, click **New**.
The [Add Content to Workflow \(New Content\) Screen](#) is displayed.
 - a. Enter a Content ID for the new content item. The Content ID cannot be changed after the content item is created. To change a Content ID, delete the content item from the list and add a new content item. If you are using an Oracle database, all Content IDs are converted automatically to uppercase letters.

- b. Click **OK**.
10. To add an existing content item to the workflow, click **Select**.
The [Add Content to Workflow \(Existing Content\) Screen](#) is displayed.
 - To narrow the list of content items, specify criteria for the filter and/or release date.
 - To select a range of content items, click one item and then hold down the Shift key while clicking another item.
 - To select content items individually, hold down the Ctrl key while clicking each item.

Existing content items must have the same security group as the workflow.
11. Repeat steps 9 and 10 as necessary to add the desired content items to the workflow.
12. Define one or more contributors for the initial contribution step. More than one type of user can be defined for the contribution step.
 - To add a group of users defined by an alias, click **Add Alias**. The [Add Alias to Workflow Screen](#) is displayed.
 - To add individual user logins, click **Add User**. The [Add User: Basic Workflow](#) screen is displayed.
 - To narrow the list of users, select the **Use Filter** check box, click **Define Filter**, select the filter criteria, and click **OK**.
 - To select a range of users, click one user and then hold down the Shift key while clicking another user.
 - To select users individually, hold down the Ctrl key while clicking each user.
13. If a template was not used to create review steps, or if you want to add another step, click **Add** in the right pane near the Steps box.
The [Add New/Edit Step Screen](#) is displayed.
14. Enter an appropriate **Name** and **Description** for the step. The Name cannot be changed after the step is created. Use a descriptive name for the step (for example, *CopyEditReview* or *FinalApproval*).
15. Specify the authority level of the users for the step.
 - **Users can review the current revision**—Users can approve or reject the revision.
 - **Users can review and edit (replace) the current revision**—Users can edit the revision, approve it, or reject it. Any edit will not update the revision of the content item.
 - **Users can review the current revision or create new revision**—Users can edit the revision, approve it, or reject it. Any edit will update the revision of the content item. This preserves the original content and provides an audit trail of changes.
16. Select the type of users to be added to the step. More than one type of user can be defined for a step:
 - To add a group of users defined by an alias, click **Add Alias**. The [Add Alias to Step Screen](#) is displayed.

- To add individual user logins, click **Add User**. The [Add User: Basic Workflow](#) screen is displayed. To narrow the list use the **Use Filter** check box; to select a range of users, click one user and then hold down the Shift key while clicking another user. name. To select users individually, hold down the Ctrl key while clicking each user name.
 - To add a variable user defined by a token, click **Add Token**. The [Add Token: Basic Workflow](#) screen is displayed. See "Creating a Token" on page 4-26 for more information.
 - Click the **Exit Conditions** tab.
 - Specify how many reviewers must approve the revision before it passes to the next step.
 - To require approval by all reviewers, select **All reviewers**.
 - To specify a minimum number of reviewers who must approve the revision, select **At least this many reviewers** and enter the number.
17. Typically, exit conditions are useful when metadata could be changed by an external process during the workflow step. Use the following instructions if the step requires additional exit conditions to be able to pass to the next step:
- a. Select the **Use Additional Exit Condition** check box.
 - b. Click **Edit**.
 - c. The [Edit Additional Exit Condition Screen](#) is displayed. You can use this screen to select additional criteria from option lists.
 - d. Select a workflow condition or a metadata field from the **Field** option list.
 - e. Select an operator from the **Operator** option list. This is a dependent option list that shows operators associated with the Field.
 - f. Select a value from the **Value** option list. This is a dependent list based on the option chosen as the Field.
 - g. Click **Add** to add the conditional statement to the Condition Clause. The clause appears in the Condition Clause box. Multiple clauses can be appended with AND statements.
 - h. Repeat for as many conditions as required. To modify an expression, select it in the Condition Clause box, change the Field, Operator, or Value, and click **Update**.
 - i. To modify the condition expression, select the **Custom Condition Expression** check box and edit the script (for example, use OR not AND for a condition). The additional exit conditions must be Idoc Script statements that evaluate to true or false. Do not enclose the code in Idoc Script tags <\$ \$> .
-
- Caution:** If you clear the **Custom Condition Expression** check box, the expression reverts to its original definition; all modifications are lost.
-
- j. Click **OK**.
18. If the workflow requires conditional steps or special processing, click the **Events** tab and add the appropriate scripts. See "[Customizing Workflows](#)" on page 4-24 for more information.

19. Click **OK**.
20. Add, edit, and delete steps as necessary to complete the workflow.
 - To add another user to the initial contribution step, repeat step 12.
 - To delete a user from the initial contribution step, click **Delete**.
 - To add another review step to the workflow, repeat steps 13 through 19.
 - To edit an existing review step, select the step and click **Edit**.
 - To delete an existing review step, select the step and click **Delete**.
21. Make sure that the correct workflow is selected in the left pane, and click **Start**.
The [Start Workflow Screen](#) is displayed.
22. Enter a message to be sent to the contributors.
23. Click **OK**.

4.4.4 Changing a Basic Workflow

To change an existing Basic workflow:

1. Display the [Workflow Admin: Workflows Tab](#).
2. Select the workflow you want to change in the left pane.
3. If you want to change the workflow security group or the number of review steps in an active workflow, you must first click **Cancel** to cancel the workflow.
4. Click **Edit** in the left pane to change the workflow description or the security group.
5. Use the **New**, **Select**, and **Delete** buttons in the Content pane to add or delete content from the workflow.
6. Use the **Add Alias**, **Add User**, and **Delete** buttons in the Contributors pane to add or delete contributors from the initial contribution step.

Caution: You can change content items in a Basic workflow after it has been started, but the contributors will not be notified automatically. You can also change contributors in a Basic workflow after it has been started, but any new contributors will not be notified immediately.

7. Use the **Add**, **Edit**, and **Delete** buttons in the **Steps** pane to change the following:
 - step description
 - type of step (reviewer or reviewer/contributor)
 - users
 - events
 - number of approvals required
 - exit conditions

4.5 Customizing Workflows

Tokens and jumps can be used to customize your workflows to accommodate different business scenarios. A *token* defines variable users in a workflow and a *jump* can be used to branch a workflow to a different side effect.

This section describes how to set up and use tokens and jumps. It discusses the following topics:

- ["About Tokens"](#) on page 4-25
- ["About Jumps"](#) on page 4-28
- ["Jump Variables and Steps"](#) on page 4-30
- ["Creating a Token"](#) on page 4-26
- ["Changing a Token"](#) on page 4-26
- ["Deleting a Token"](#) on page 4-27
- ["Setting Up Jumps"](#) on page 4-31
- ["Changing a Jump"](#) on page 4-33
- ["Token Examples"](#) on page 4-27
- ["Jump Examples"](#) on page 4-34

4.5.1 Idoc Script Functions and Variables

Jumps and tokens are created using Idoc script. The interfaces create the correct syntax and usage for you when you create tokens and jumps. However, you may wish to customize your scripts using the following Idoc Script functions. See the *Oracle Fusion Middleware Idoc Script Reference Guide* for complete details about usage.

Idoc Script Functions:

- `wfAdditionalExitCondition`: retrieves the exit condition that has been defined for the current step.
- `wfAddUser`: adds a user, alias, or workflow token to the list of reviewers for a workflow. This can only be used inside a token.
- `wfCurrentGet`: retrieves a local state value from the companion file.
- `wfCurrentSet`: sets the local state value of a key in the companion file.
- `wfCurrentStep`: retrieves the name of a step relative to the current step.
- `wfDisplayCondition`: retrieves the exit condition for a workflow step.
- `wfExit`: exits a workflow step. Can be used to exit the workflow.
- `wfGet`: retrieves a state value from the companion file.
- `wfGetStepTypeLabel`: takes an internal workflow step value and turns it into a human-readable label.
- `wfIsReleasable`: indicates if the document is released (as far as the workflow is concerned).
- `wfJumpMessage`: defines a message that will be included in the notification e-mail that is issued when a jump is entered.
- `wfLoadDesign`: used to retrieve information about the existing steps in a workflow or about the exit conditions in a workflow.

- `wfNotify`: sends an e-mail to a specified user, alias, or workflow token.
- `wfReleaseDocument`: causes a workflow to release all outstanding document revisions for a document that are currently being locked by the workflow.
- `wfSet`: sets a key with a particular value in the companion file.
- `wfUpdateMetaData`: defines a metadata value for the current content item revision in a workflow.

Idoc Script Variables:

- `wfAction`: the action currently being performed on the revision.
- `wfJumpEntryNotifyOff`: turns on/off the jump notification.
- `wfJumpName`: the name of the current jump.
- `wfJumpReturnStep`: the name of the step in the parent workflow that the revision returns to when exiting a workflow after the current jump.
- `wfJumpTargetStep`: the name of the step where the revision will jump if the conditions are met.
- `wfMailSubject`: defines the subject line of a workflow e-mail notification.
- `wfMessage`: defines a message that will be included in a workflow e-mail notification.
- `wfParentList`: list of the workflow steps that the revision has visited.
- `wfStart`: sends the revision to the first step in the current workflow.

4.5.2 About Tokens

A token can be used to:

- Add a variable to a workflow which is interpreted to be a specific user or class of user when the workflow is run.
- Include users and aliases in workflow jumps.
- Define users with conditional statements.

A token assignment is unique and local to each document in a workflow. The logic used to assign the token of one document does not affect other documents in the workflow.

Several sample workflow tokens are included in the Workflow Admin application. They can be used as is, or they can be modified to create your own workflow tokens. These tokens can be used with Content Server.

Important: If a token does not resolve to any valid user names, the token is ignored. If no valid users are defined for a step, the revision moves to the next step in the workflow. For this reason, it is a good idea to identify at least one defined user for each step.

4.5.2.1 Token Syntax

The Idoc Script function for tokens, `wfAddUser`, takes two parameters:

- **User**—The first parameter is the metadata field, alias name, or a variable that resolves to a user name or alias.

- **Type**—The second parameter is the type of token: user or alias.

All Idoc Script commands begin with <\$ and end with \$> delimiters. For example:

```
<$wfAddUser(dDocAuthor, "user")$>  
<$wfAddUser("MktTeam", "alias")$>  
<$wfAddUser("myUserList", "alias")$>
```

See the *Oracle Fusion Middleware Idoc Script Reference Guide* for more information about Idoc Script syntax and usage.

4.5.3 Creating a Token

Follow these steps to create a token:

1. From the [The Workflow Admin Application](#), select **Tokens** from the **Options** menu.
The [Workflow Tokens Screen](#) is displayed.
2. Click **Add**.
The [Add/Edit Token Screen](#) is displayed.
3. Enter a token name in the **Token Name** field. The **Token Name** cannot be changed after the token is created. Try to use a descriptive name for the token (for example, *GetOriginalAuthor*, or *AuthorManager*).
4. Enter a detailed description in the **Description** field.
5. Click **Add**.
The [Add Token User Screen](#) is displayed.
6. Select **User** or **Alias**.
7. Enter a metadata field.
 - To specify the original author of the content item, enter **dDocAuthor**.
 - To specify an alias, type the alias name exactly. See the Screen Aliases tab on the User Admin screen for a list of defined aliases.
8. Click **OK**. The Idoc Script containing the value you specified is shown in the **User** window.
9. Repeat steps 5 through 8 to add another user or alias.
10. To create a conditional token, edit the Users field.
11. Click **OK**.

4.5.4 Changing a Token

To change an existing workflow token:

1. From [The Workflow Admin Application](#), select **Tokens** from the **Options** menu.
The [Workflow Tokens Screen](#) is displayed.
2. Select the token you want to change.
3. Click **Edit**.
The [Add/Edit Token Screen](#) is displayed.
4. Edit the token script as necessary. See "[About Jumps](#)" on page 4-28 for more information.

5. Click OK.

4.5.5 Deleting a Token

To delete a workflow token:

1. From [The Workflow Admin Application](#) select **Tokens** from the **Options** menu.
The [Workflow Tokens Screen](#) is displayed.
2. Select the token you want to delete.
3. Click **Delete**.
A confirmation screen is displayed.
4. Click **Yes**.

4.5.6 Token Examples

The following examples illustrate how tokens can be used in workflows:

Example 4-1 Original Author the Only Contributor

This example assumes that the original author is the only contributor for the file. [Example 4-2](#) addresses the situation where different authors could check out and check in the file during the workflow process.

Suppose you want to notify the original author of each file when their content is released from a workflow into the system. You would first create a token that corresponds to the **Author** metadata field, which is called `dDocAuthor` in Idoc script. When you set up the workflow, you can create a notification step (0 approvals required) and select the token as the user for that step. The token script would look like the following example:

```
<$wfAddUser (dDocAuthor, "user")$>
```

Example 4-2 Workflow with Reviewer/Contributor Steps

If a workflow includes Reviewer/Contributor steps, it is possible that a user other than the original contributor could check in a revised file, and the `dDocAuthor` would no longer be the original author. In this case, you could set a workflow variable called `OriginalAuthor` in the companion file using custom script in the first workflow step, and specify the custom variable in the token instead of using `dDocAuthor`.

The event script in the first step might look like the following:

```
<$wfSet ("originalContributor", dDocAuthor)$>
<$wfSet ("type", user)$>
```

And the token script for the notification step would look like:

```
<$wfAddUser (wfGet ("originalContributor"), wfGet ("type"))$>
```

Example 4-3 Reviewers Selected Based on Jump Criteria

One typical use for tokens is to select reviewers 'on the fly', or based on the conditions of a jump. Let's say that you have a workflow set up for standard routing of all marketing materials through the Marketing department. However, you want any changes to your company catalogs to also be reviewed by the Distribution department.

You could create a jump that adds a token to the list of reviewers whenever the `Type` is `catalog`. The token script would look like:

```
<$wfAddUser("Dist_Dept", "alias")$>
```

Example 4–4 Conditional Token

Rather than creating a jump script for the previous example, you could define a conditional token that adds the `Dist_Dept` alias whenever the `Type` is `catalog`. The token script would look like the following:

```
<$if dDocType like "catalog"$>
  <$wfAddUser("Dist_Dept", "alias")$>
<$endif$>
```

Example 4–5 Token Specifying Management Chain

Another common use for tokens is specifying the current user's manager as a reviewer. (The manager attribute must be specified as a user information field in the content server, or as a user attribute in an external directory such as LDAP or ADSI.) The token script would look like:

```
<$wfAddUser(getUserValue("uManager"), "user")$>
```

4.5.7 About Jumps

Jumps enable you to customize workflows for your system, your content, and your users. A jump is usually a conditional statement, written in Idoc Script.

Typical uses of jumps include:

- Specifying more than one metadata field as the criteria for entering a workflow.
- Taking action on content automatically after a certain amount of time has passed.
- Defining different paths for files to move through the same workflow depending on metadata and user criteria.
- Releasing a workflow document prior to approval by using the side effect: *Release document from edit state*.

The following is an example of a jump that exits the workflow if the author is *sysadmin*:

```
<$if dDocAuthor like "sysadmin"$>
  <$wfSet("wfJumpName", "Entry step")$>
  <$wfSet("wfJumpTargetStep", wfExit(0, 0))$>
  <$wfSet("wfJumpEntryNotifyOff", "0")$>
<$endif$>
```

In most cases, a jump will include a conditional statement. However, you can create a jump that consists of non-conditional code, such as the following:

```
<$wfSet("custom_wf_variable", new_value)$>
  <$wfSet("wfJumpTargetStep", step_1)$>
```

You can use this type of jump to execute code or move a revision to another step automatically.

4.5.7.1 Jumps and Events

As mentioned in [Events](#), each step in a workflow has an entry, update, and exit event.

A script with one or more jumps can be defined for any or all of the events in a step. Any Idoc Script defined for an event is evaluated at a specific time that depends on the type of event:

- An **entry event script** is evaluated upon entering the step. Every time a step is entered, a default script is evaluated in addition to any user-defined custom script. The default script keeps track of the number of times the step has been entered (`entryCount`) and the last time the step was entered (`lastEntryTs`).

If the entry event script does not result in a jump or exit, any users, aliases, and tokens are evaluated, and e-mail notifications are sent.

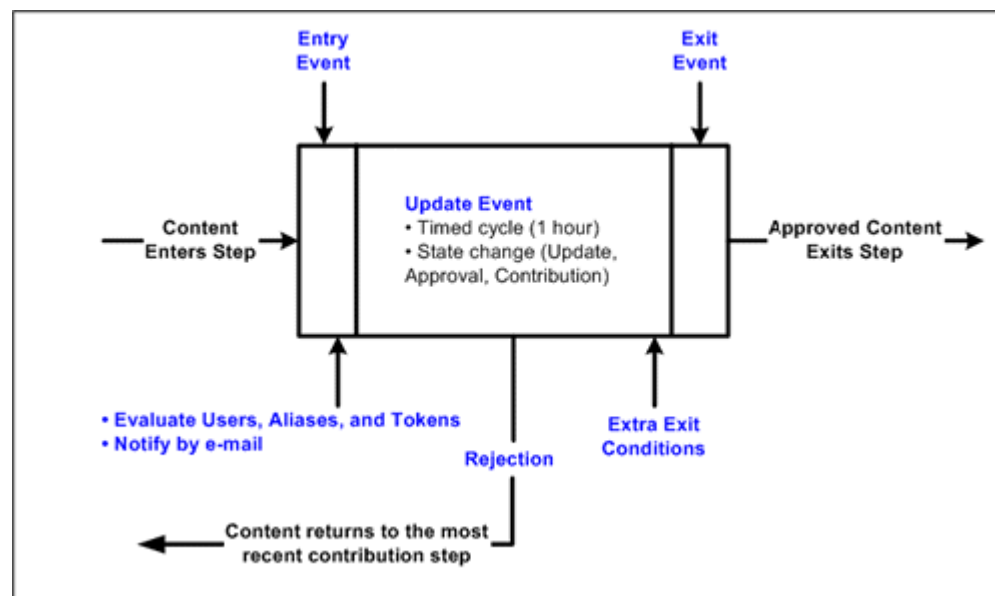
- An **update event script** is evaluated and triggered by a state change of the content, such as the workflow update cycle, the update of the revision's metadata or approval or checkin of the revision.

Extra exit conditions are evaluated each time the update event script is evaluated.

- An **exit event script** is evaluated when a revision has completed the step's approval requirements and the step's extra exit conditions are met.

By default, the workflow update cycle occurs hourly. This cycle time can be increased in increments of one hour (using the `WorkflowIntervalHours` configuration setting), but cannot be reduced to less than one hour. To have update scripts evaluated more often or in response to other events, you could initiate a metadata update cycle without changing any metadata.

Figure 4–4 Jumps and Events



4.5.7.2 Rejected Content

Within a single workflow, when a reviewer rejects a revision the content item is routed back to the most recent contribution step.

However, when a jump is made to a sub-workflow or other workflow and content is rejected there, different behavior occurs. The process returns to the parent workflow, not to the previous contribution step.

Important: Update and exit event scripts of the current step are not run when a revision is rejected. Any code that is to be evaluated upon rejection must be located in the entry event script for the step that the rejected file is sent to.

4.5.7.3 Side Effects

Side effects are the actions that take place when a revision in a workflow step meets the jump condition. Side effects can include:

- jumping to another step in the same workflow
- jumping to a step in a sub-workflow or other Criteria workflow (for Criteria workflows only)
- notifying users
- exiting the workflow
- setting state information in the companion file
- releasing a workflow document prior to approval

Side effects can be generated automatically by selections on the [Script Properties Screen](#) and [Add/Edit Jump Screen](#), and custom side effects can be specified in the Custom Effects field on the [Add/Edit Jump Screen](#).

4.5.8 Jump Variables and Steps

A jump can include a *target step*, which tells the workflow where to go to if the content meets the jump condition. The following is an example of a target step that sends the content to the next step in the workflow:

```
<$wfSet("wfJumpTargetStep", wfCurrentStep(1))$>
```

A jump can also include a *return step*, which tells the workflow where to go if the content is returning from another workflow. The following is an example of a return step that sends the content to the next step in the workflow:

```
<$wfSet("wfJumpReturnStep", wfCurrentStep(1))$>
```

A *step name* variable, `step_name@<workflow_name>`, is assigned to each step in a workflow. There are two ways to reference a step in a jump:

- **Explicit** reference is made to a specific step name, such as `Editor@Marketing Brochures`.
- **Symbolic** reference is made relative to the current step and workflow, such as `wfCurrentStep(-1)` (previous step) or `wfStart` (first step in the workflow).

Tip: Use symbolic references rather than explicit step names whenever possible especially when creating a script template.

The *entry count* variable, `entryCount`, keeps track of how many times a step has been entered. This is part of the default entry script that is updated each time a step is entered. The following is an example of how an entry count variable is used in a conditional statement:

```
<$if entryCount = 1$>
```

The *last entry* variable, `lastEntryTs`, keeps track of when the step was last entered. This is part of the default entry script that is updated each time a step is entered. The following is an example of how the last entry variable is used to specify that action should occur if the step has not been acted on within seven days:

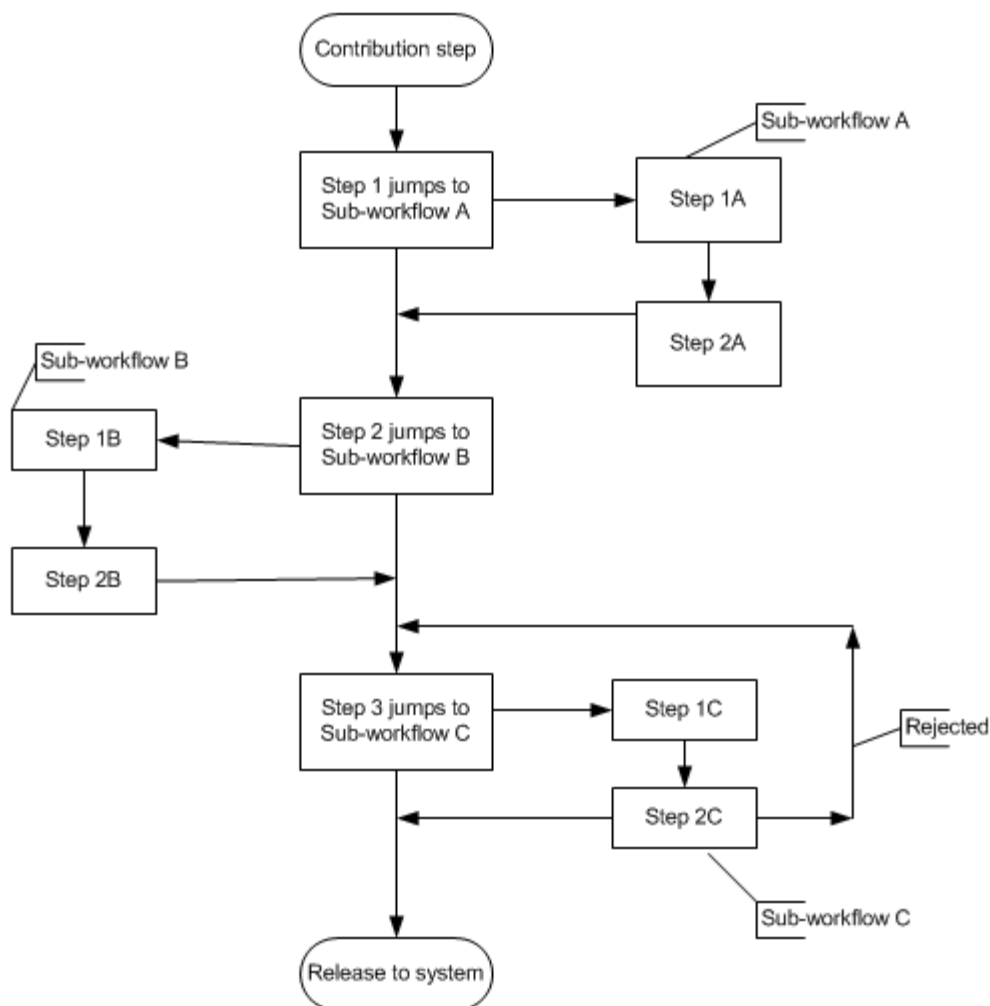
```
<$if parseDate(wfCurrentGet("lastEntryTs")) < dateCurrent(-7)$>
```

4.5.9 Setting Up Jumps

Before you create jumps in a workflow, you should draw a flowchart and work out all the possible jump scenarios. A recommended method of structuring jumps is to create a main workflow with steps that jump to sub-workflows. See the following example flowchart.

After you have decided what jumps need to occur within a workflow, set up the jumps and then test them. You can create jumps directly in an existing workflow, or you can create script templates for jumps that will be reused in different workflows.

Figure 4–5 Jump Flowchart



4.5.10 Creating a Jump

To create a jump:

1. Create the workflow that will contain jumps. See ["Setting Up a Criteria Workflow"](#) on page 4-14 or ["Setting Up a Basic Workflow"](#) on page 4-20.
2. Select the workflow on the **Workflow Admin: Criteria Tab** or the **Workflow Admin: Workflows Tab** (depending on the type of workflow).

3. In the Steps pane, click **Add**, or select the step that will include the jump and click **Edit**.
The Add New/Edit Step screen for the workflow type (Criteria or Basic) is displayed.
4. Click the Events tab.
5. Click **Edit** next to the event (entry, update, or exit) that will contain the jump.
 - If a script template does not exist, the [Script Properties Screen](#) is displayed. Go to step 1
 - If a script template exists, the [Edit Script for StepName Screen](#) is displayed.
 - Select an editing option:
 - To create the script from a blank screen, select **Create New**.
 - To create the script from a script template, select **Use Script Template** and then select a template from the option list.
6. Click **OK**.
The [Script Properties Screen](#) is displayed.

4.5.10.1 Setting Up Jump Side Effects

Follow these steps to test the side effects.

1. On the Jumps tab, click **Add**, or select an existing jump and click **Edit**.
The [Add/Edit Jump Screen Tabs](#) is displayed.
2. For a new jump, enter a jump name. The Jump Name cannot be changed after the jump is created. Try to use a meaningful, descriptive name.
3. If the jump needs to specify a return point, select the **Has Return Point** check box and select a return point from the option list. The possible options are: Current Step, Next Step, Previous Step.
4. If the reviewers for this step should not be notified when the jump is entered, select the **Do not notify users on entry** check box.
5. If the content item should be released prior to approval, select the Release document from edit state check box.
6. Enter any custom side effects in the **Custom Effects** field. See "[Jump Examples](#)" on page 4-34 for some examples.
7. If the reviewers will be notified when the jump is entered, click the Message tab and enter the notification message.
8. Click **OK**. The Edit Script screen is re-displayed.

4.5.10.2 Setting the Conditional Statement

Follow these steps to set up conditional statements.

1. Select a metadata field from the **Field** option list. This is the workflow conditions or metadata field to be evaluated.
2. Select an operator from the **Operator** option list. This is a dependent option list that shows only the operators associated with the Field.
3. Select a value from the **Value** option list. This is the value associated with the specified metadata field.

4. Click **Add** to add the conditional statement to the script.

4.5.10.3 Completing the Jump

Follow these steps to complete the jump.

1. If the jump needs to specify a target step:
 - To specify a specific step, click **Select**, and then select the workflow and step name on the Select Target Step screen. The target step name is displayed in the target step area.
 - To select a symbolic step, such as the current step or exit the workflow, select the step from the **Target Step** option list.
2. To modify the script that was just created, click the Custom tab, select the **Custom Script Expression** check box, and edit the code.

Caution: If you clear the Custom Script Expression check box, the expression reverts to its original definition; all modifications will be lost.

4.5.10.4 Testing the Script

Follow these steps to test the script.

1. Click the Test tab.
2. Click **Select**.

The [Content Item View Screen](#) is displayed.
3. To narrow the content list, select the **Use Filter** check box, click **Define Filter**, select the filter criteria, and click **OK**.
4. Select a content item to test and click **OK**. Check in and process a test document so that it is in the workflow and at the step you are adding the jump to, and then select that content item for testing. If the selected content item is not currently in a workflow, you can still use it to test the script, but it will be treated as if it were newly in the workflow.
5. Click **Load Item's Workflow State**.

If the selected content item is in a workflow, the companion file is loaded in the Input Data field.
6. Click **Test Script**.
7. The test results are displayed in the **Results** field.
 - The value of each parameter in the script is displayed.
 - If any Idoc script errors occur, they are displayed along with the script containing the errors.
8. To save the script, click **OK**.
9. Continue adding jumps as needed to different steps.

4.5.11 Changing a Jump

To change an existing jump:

1. Select the workflow on the [The Workflow Admin Application](#) or the [Workflow Admin: Workflows Tab](#).
2. In the Steps pane, select the step that includes the jump to be changed.
3. Click **Edit** in the Steps pane.

The Add New/Edit Step screen appears for the workflow type (Criteria or Basic).
4. Click the Events tab.
5. To delete a jump, click **Clear** in the corresponding event pane.
6. To change a jump, click **Edit** in the corresponding event pane.

The [Edit Script for StepName Screen](#) is displayed.
7. Select an editing option:
 - To edit the existing script, select **Edit Current**.
 - To create a new script, select **Create New**.
 - To use a script template, select **Use Script Template** and then select a template from the option list.

The [Script Properties Screen](#) is displayed.
8. Use the **Add**, **Edit**, and **Delete** buttons in the Jumps pane to change the jump side effects.
9. Use the **Field**, **Operator**, **Value** fields and **Add** and **Update** buttons in the Script Clauses pane to change the conditional statements for the jumps.
10. Use the **Target Step** option list to change the target step for the jump.
11. To change the automatically generated script, click the Custom tab, select the **Custom Script Expression** check box, and edit the code.

Caution: If you clear the Custom Script Expression check box, the expression reverts to its original definition; all modifications will be lost.

12. Test the script before saving it. See step 1 of [Creating a Jump](#).
13. Click **OK** to save the changes.

4.5.12 Jump Examples

The following examples describe how to set up different types of jumps.

- ["Jump Example 1: Metadata Criteria Jump"](#) on page 4-34
- ["Jump Example 2: Time-dependent Jump"](#) on page 4-35

4.5.12.1 Jump Example 1: Metadata Criteria Jump

Perhaps you have a Criteria workflow called *Marketing Brochures* that is defined with the *Marketing* security group and the *MktBrochure* content type. However, any brochures submitted by a graphic artist do not need to go through the first step, which is graphics department approval. You would use the Edit Script screen to create the following entry event script for the first step.

```
<$if dDocAuthor like "bjones" or dDocAuthor like "sjames"$>  
  <$wfSet("wfJumpName", "BypassGraphics")$>
```

```
<$wfSet("wfJumpTargetStep", wfCurrentStep(1))$>
<$wfSet("wfJumpEntryNotifyOff", "0")$>
<$endif$>
```

To change the automatically generated conditional statement from `and` to `or`, you would need to edit the script on the Custom tab of the Edit Script screen.

4.5.12.2 Jump Example 2: Time-dependent Jump

Suppose you want to limit the review period to one week. If the revision has not been approved or rejected, you want to notify the reviewers and process the revision through a sub-workflow called *ApprovalPeriodExpired*. You would use the Edit Script screen to create the following update event script:

```
<$if parseDate(wfCurrentGet("lastEntryTs")) < dateCurrent(-7)$>
  <$wfSet("wfJumpName", "LateApproval")$>
  <$wfSet("wfJumpTargetStep",
    "NotifyAuthor@ApprovalPeriodExpired")$>
  <$wfSet("wfJumpMessage", "The review period for content item
    <$eval(<$dDocTitle$>)> has expired.")$>
  <$wfSet("wfJumpReturnStep", wfCurrentStep(0))$>
  <$wfSet("wfJumpEntryNotifyOff", "0")$>
<$endif$>
```

4.5.12.3 Jump Errors

There are two possible responses to a jump error:

- An event script that causes an error in execution is treated as if it had never been evaluated. However, the default entry script that keeps track of the entry count and last entry is still evaluated.
- A jump to an invalid step or a step in an inactive workflow results in an error, and the revision is treated as if it has completed the last step of the workflow.

4.6 Workflow And Script Templates

Workflow templates are a quick way to re-use workflows that you've already created. Each workflow template is an outline for a Basic, Criteria, or sub-workflow that is stored in the Workflow Admin tool. A workflow template is not tied to a security group, and it cannot include step event scripts.

This chapter contains the following topics:

- ["Creating Templates and Scripts"](#) on page 4-36
- ["Creating a Workflow Template"](#) on page 4-36
- ["Changing a Workflow Template"](#) on page 4-36
- ["Deleting a Workflow Template"](#) on page 4-37
- ["Creating a Script Template"](#) on page 4-37

Important: When you use a workflow template, you must change the reviewers if they are different from those defined in the selected template.

4.6.1 Creating Templates and Scripts

Script templates can be used to store step event scripts, but they work differently than workflow templates. See "[Creating a Script Template](#)" on page 4-37 for more information.

The procedure to create a template uses many of the same steps used in setting up a workflow. This section provides an overview of the process. For details see "[Setting Up a Criteria Workflow](#)" on page 4-14 or "[Setting Up a Basic Workflow](#)" on page 4-20.

4.6.2 Creating a Workflow Template

To create a workflow template:

1. Display the [Workflow Admin: Templates Tab](#).
2. Click **Add**.
The [Add/Edit Template Screen](#) is displayed.
3. Enter a template name in the **Template Name** field. The Template Name cannot be changed after the template is created.
4. Enter a detailed description in the **Description** field.
5. Specify whether to permit the original author to edit the existing revision or create a new revision if the content item is rejected by checking the appropriate box.
6. Add a step by clicking **Add**.
7. Enter an appropriate **Name** and **Description** for the step.
8. Specify the authority level of the users for the step: Users can review the current revision, Users can review and edit (replace) the current revision or Users can review the current revision or create new revision.
9. Click **OK**.
10. Select the type of users to be added the step. More than one type of user can be defined for a step.
11. Click **OK**.
12. Click the **Exit Conditions** tab.
13. Specify how many reviewers must approve the revision before it passes to the next step.
14. Specify additional exit conditions if needed.
15. If the workflow requires conditional steps or special processing, click the **Events** tab and add the appropriate scripts.
16. Click **OK**.

4.6.3 Changing a Workflow Template

To change an existing workflow template:

1. Display the [Workflow Admin: Templates Tab](#).
2. Select the workflow template you want to change.
3. Click **Edit**.
The [Add/Edit Template Screen](#) is displayed.

4. Use the **Add**, **Edit**, and **Delete** buttons in the Steps pane to change the steps.
5. Use the **Add Alias**, **Add User**, **Add Token**, and **Delete** buttons on the Users tab to add or delete reviewers for the selected step.
6. On the Exit Conditions tab, change the number of reviewers required or the additional exit conditions as necessary.
7. On the Events tab, add, change, or delete jumps as necessary. See "[Setting Up Jumps](#)" on page 4-31 for more information.
8. Click **OK**.

4.6.4 Deleting a Workflow Template

To delete a workflow template:

1. Display the [Workflow Admin: Templates Tab](#).
2. Select the workflow template you want to delete.
3. Click **Delete**.
A confirmation screen is displayed.
4. Click **Yes**.

4.6.5 Creating a Script Template

Script templates are a quick way to re-use step event scripts that you've already created. A script template is used as a starting point for creating event scripts. Each script template is a piece of Idoc Script stored in the Workflow Admin tool.

Important: Script templates should use symbolic step names rather than explicit references. See "[Jump Variables and Steps](#)" on page 4-30 for more information.

Follow these steps to create a script template:

1. In [The Workflow Admin Application](#), select **Script Templates** from the **Options** menu.
2. Click **Add**.
The [Add/Edit Script Screen](#) is displayed.
3. Enter a script name in the **Script Name** field. The **Script Name** cannot be changed after the script template is created.
4. Enter a detailed description in the **Description** field.

4.6.5.1 Setting Up Jump Side Effects

1. On the Jumps tab, click **Add**.
2. Enter a jump name. The name cannot be changed after the jump is created.
3. If the jump needs to specify a return point, select the **Has Return Point** check box and select a return point from the option list.
4. If users should not be notified when the jump is entered, select the **Do not notify users on entry** check box.

5. If the content item should be released prior to approval, select the Release document from edit state check box.
6. Enter any custom side effects in the **Custom Effects** field.
7. If users will be notified when the jump is entered, click the Message tab and enter the notification message.
8. Click **OK**.

4.6.5.2 Setting Up Script Template Conditional Statements

1. Select a metadata field from the **Field** option list.
2. Select an operator from the **Operator** option list.
3. Select a value from the **Value** option list.
4. Click **Add** to add the conditional statement to the script.

4.6.5.3 Testing the Script

1. Click the Test tab.
2. Click **Select**.
The [Content Item View Screen](#) is displayed.
3. To narrow the content list, select the **Use Filter** check box, click **Define Filter**, select the filter criteria, and click **OK**.
4. Select a content item to test and click **OK**. If the selected content item is not currently in a workflow, you can still use it to test the script but it will be treated as if it were newly in the workflow.
5. Click **Select Workflow**.
The [Select Workflow Step Screen](#) is displayed.
6. Select a workflow in the Workflows pane, select a step in the Steps pane, and click **OK**. Select a workflow step that is similar to the ones for which the script template will be used.
7. Click **Load Item's Workflow State**.
If the selected content item is in a workflow, the companion file is loaded in the Input Data field.
8. Click **Test Script**.
9. The test results are displayed in the Results field.
 - The value of each parameter in the script is displayed.
 - If any Idoc script errors occur, they are displayed along with the script containing the errors.
10. To save the script template, click **OK**.

4.6.5.4 Changing a Script Template

To change an existing script template:

1. In [The Workflow Admin Application](#), select **Script Templates** from the **Options** menu.
The [Workflow Scripts Screen](#) is displayed.

2. Select the script template you want to change.
3. Click **Edit**.
The [Add/Edit Script Screen](#) is displayed.
4. Use the **Add**, **Edit**, and **Delete** buttons in the Jumps pane to change the jumps.
5. Use the **Field**, **Operator**, **Value** fields and **Add** and **Update** buttons in the Script Clauses pane to change the conditional statements for the jumps.
6. Use the **Target Step** option list to change the target step for the jump.
7. To modify the automatically generated script, click the Custom tab, select the **Custom Script Expression** check box, and edit the text.

Caution: If you clear the Custom Script Expression check box, the expression reverts to its original definition; all modifications will be lost.

8. Test the script before saving it. See step 1 of [Creating a Jump](#).
9. Click **OK** to save the changes.

4.6.5.5 Deleting a Script Template

To change an existing script template:

1. In [The Workflow Admin Application](#), select **Script Templates** from the **Options** menu.
The [Workflow Scripts Screen](#) is displayed.
2. Select the script template you want to delete.
3. Click **Delete**.
A confirmation screen is displayed.
4. Click **Yes**.

4.7 Workflow Scenarios

The following workflow scenario describe the planning process and the types of actions required to accomplish specific workflow tasks. It includes the following workflow examples:

- [Scenario 1: Criteria Workflow](#). For details about the steps used to set up a criteria workflow, see "[Setting Up a Criteria Workflow](#)" on page 4-14.
- [Scenario 2: Tokens](#). For details about creating tokens, see "[Creating a Token](#)" on page 4-26.
- [Scenario 3: Jump Based on Metadata](#). For information about setting up a jump, see "[Creating a Jump](#)" on page 4-31.
- [Scenario 4: Time-Dependent Jump](#). For information about using variables to set jumps, see "[Jump Variables and Steps](#)" on page 4-30.

4.7.1 Scenario 1: Criteria Workflow

Your Marketing department wants to have all marketing brochures approved by at least one of the three graphic artists, the editor, and all of the marketing supervisors.

The graphic artists and editor should be able to edit the content, but the supervisors should not have editing privileges.

To set up the workflow for this example, you would:

- Define a security group called *Marketing*, and make sure that the graphic artists and the editor have Write permission, and the marketing supervisors have Read permission to the security group.
- Define a content type called *MktBrochure*.
- Define a workflow called *Marketing Brochures*, with the security group set to *Marketing* and criteria set to *Type = MktBrochure*.
- Define the first step, called *Graphic Artist*, as a Reviewer/Contributor step with approval required from at least 1 reviewer. Because the graphics department is very stable, you can assign the user logins of the three graphic artists to the step.
- Define the second step, called *Editor*, as a Reviewer/Contributor step. Assign the editor's user login to the step.
- Define the third step, called *Marketing Team*, as a Reviewer step with approval required from all reviewers. The management structure changes frequently, so set up an alias called *MktTeam* and assign it to this step.
- All marketing brochures must be checked into the *Marketing* security group with a Type of *MktBrochure*, so it is a good idea to instruct all possible contributors of marketing brochures about how to check them in.
- For the approval process to work correctly, the *MktTeam* alias must be kept up-to-date.

4.7.2 Scenario 2: Tokens

After you created the *Marketing Brochures* workflow in Scenario 1, the Marketing department requested that all marketing brochures be returned to the original author for final review before they are released. The original author should not have editing privileges.

To set up the workflow for this example, you would:

- Create a token called *Author* and define the user as *dDocAuthor*.
- Define a fourth step in the workflow, called *Original Author*, as a Reviewer step. Assign the *Author* token to the step.

4.7.3 Scenario 3: Jump Based on Metadata

The *Marketing Brochures* workflow you created in Scenarios 1 and 3 is working smoothly, but now the Marketing department would like to automatically notify the various sales reps when a new brochure is released for one of their product lines.

To set up the workflow for this example, you would:

- Define a required custom metadata field called *Product*, and create an option list of the products.
- Set up an alias for each product, and assign the appropriate sales reps to each alias. Note that each user can be assigned to more than one alias.
- Define a fifth step in the workflow, called *Notify Sales*, as a Reviewer step with approval required from zero (0) reviewers.

- Define a sub-workflow for each product that contains one Reviewer step with approval required from zero (0) reviewers. Assign the corresponding product alias to the step.
- Define an entry script in the *Notify Sales* step that jumps to the sub-workflow that matches the product.
- For the notification process to work correctly, the product option list and aliases must be kept up-to-date.

4.7.4 Scenario 4: Time-Dependent Jump

The Marketing department is having trouble getting marketing brochures approved in a timely manner. They would like to change the *Marketing Brochures* workflow to automatically move content to the next step if it hasn't been approved or rejected by the graphics department, supervisors, or original author within 7 days. The editor is allowed a little more time—they get 10 days before the content goes to the next step.

To set up the workflow for this example, you would:

- Define a script template called *AutoApprove*, with a target step that goes to the next step in the workflow if the last entry was 7 days ago.
- Add an update jump to the *Graphic Artist*, *Marketing Team*, and *Original Author* steps. Use the *AutoApprove* script template to create the jump.
- Add an update jump to the *Editor* step, using the *AutoApprove* script template. Edit the script so that the jump occurs at 10 days rather than 7 days.

4.8 Workflow Tips and Tricks

This section describes workflow tips and tricks. It covers the following topics:

- ["Setting Up Parallel Workflows"](#) on page 4-42
- ["Adding Ad Hoc Step Users"](#) on page 4-43
- ["Customizing Criteria Workflow Emails"](#) on page 4-43
- ["Workflow Escalation"](#) on page 4-45

In addition to this functionality, additional customizations are available through Consulting Services. See ["Other Customizations"](#) on page 4-48, for details.

4.8.1 Acquiring a Digital Signature

It is sometimes necessary to re-authenticate a user during a workflow. This serves as a digital signature for the users during that particular step of the workflow. To enable this functionality, first determine which workflow steps require authentication before approval. Then do the following:

1. Add the following line to the `IntradocDir/config/config.cfg` file:

```
<workflow step name>:isRepromptLogin=true
```

If multiple workflow steps require validation, add those steps on separate lines.

2. Restart the Content Server.
3. Set up and enable the workflow, making sure to use the step name designated in the configuration entry for the step where validation is required.

When the workflow is initiated, the users at the workflow step designated with the `isRepromptLogin` configuration variable are prompted to login in before they can approve the content at the workflow step.

In the following example, validation is required at the steps named *VIPApproval* and *CEOsignoff*. The following entries are added to the `config.cfg` file:

```
VIPApproval:isRepromptLogin=true
CEOsignoff:isRepromptLogin=true
```

The Content Server is restarted and a workflow is set up and enabled with steps named *VIPApproval* and *CEOsignoff*. Multiple users are assigned to the *VIPApproval* step, and only one user (the CEO of the company) is assigned to the *CEOsignoff* step.

Before the users at those steps can approve the workflow item, they must login again to the content server.

This functionality is available in Content Server 7.5 and later versions.

4.8.2 Setting Up Parallel Workflows

It is sometimes desirable to have two distinct groups of users be able to review content items in workflow at the same time and to have a specified number of users from each group approve the content before it proceeds in the workflow.

When using Content Server, either all users or a specified number of users must approve the content before it continues. Usually the workflow does not differentiate between sources of approval. Consequently, all members of one group may approve content while none of another group would approve it, and the content would still advance through the workflow. The following code provides an example of how approval process discrimination can be added.

This code allows step users to be set into groups. At each approval, the script checks for the group to which a user belongs. A user may belong to multiple groups; if the approving user is in a group, the counter for that group is incremented by one.

Extra exit conditions hold the content in the step until the extra conditions are met.

Add the following code in the **entry** portion of the step:

```
<$wfSet("set1", "0")$>
<$wfSet("set2", "0")$>
<$group1 = "user1, user2, user3,"$>
<$wfSet("group1", group1)$>
<$group2 = "user8, user9, user10,"$>
<$wfSet("group2", group2)$>
```

Add the following code in the **update** portion of the step:

```
<$if wfAction like "APPROVE"$>
<$if strIndexOf(wfGet("group1"), dUser) >=0$>
<$set1 = toInteger(wfGet("set1"))+1$>
<$wfSet("set1", set1)$>
<$endif$>
<$if strIndexOf(wfGet("group2"), dUser) >=0$>
<$set2 = toInteger(wfGet("set2"))+1$>
<$wfSet("set2", set2)$>
<$endif$>
<$endif$>
```

Add the following code in the **extra exit conditions** portion of the step (where n is the number of required approvers from group 1 and r is the number of required approvers from group 2):

```
toInteger(wfGet("set1")) >= n
toInteger(wfGet("set2")) >= r
```

By checking the approving user during each approve action, this workflow code increments the counter of the group to which the user belongs. The extra exit conditions hold the content item in the step until the minimum number of users in each group have approved it. If more than the minimum number of required approves for each group are executed, the approve actions are still logged but the content item does not proceed.

Reject actions are still absolute. A rejection from any named user still executes normal workflow reject behavior.

4.8.3 Adding Ad Hoc Step Users

Users can be added to workflow steps without utilizing metadata fields that are normally accessed by tokens. For example, a content item is traveling (and being edited) in workflow; each edit lists the person editing the content as the dDocAuthor. In order to send the item to the original author at the end of the workflow cycle, a special token must be created:

```
<$wfAddUser(wfGet("originalContributor"), wfGet("type"))$>
```

Add the following code to the **entry event** of the first step in the workflow to restore the original author:

```
<$originalContributor=dDocAuthor$>
<$wfSet("originalContributor",originalContributor)$>
<$type="user"$>
<$wfSet("type",type)$>
```

The event script uses `wfSet()` to put custom variables and values into the companion file at a point prior to the token call. The token then uses `wfGet()` to pull out those values and set the step user.

This technique can be used to obtain and store any standard or custom Idoc variable that holds valid user names or aliases. The Idoc variable can contain a comma-separated list of user names or aliases. If user names are being stored, the `<$type$>` variable must be set to `user` (for example, `<$type="user"$>`). If alias names are being stored, the `<$type$>` variable must be set to `alias` (for example, `<$type="alias"$>`).

When placed in the entry event of a workflow step with the token set as the step user, the entry event code processes the information. It stores the user name (or alias) which is then called by the token and is set as a step user (or users, if a list was specified). Adding multiple or conditional code blocks and tokens (as shown previously) to your step entry events and step user definitions allows true ad hoc workflow routing.

4.8.4 Customizing Criteria Workflow Emails

Emails are triggered by criteria workflow at three points in the process:

- On entry to a step.
- On receipt of a reject reasons form.
- On execution of the `wfNotify` Idoc script function.

It is possible to customize the email message, the email subject, and the template used for emails sent during criteria workflows. This section describes the processes for customizing the email aspects of criteria workflows.

4.8.4.1 Customizing Email Templates

The two most commonly used templates used to generate email messages sent to recipients involved in a workflow are *reviewer_mail.htm* and *reject_mail.htm*. These are stored in `IdcHomeDir/resources/core/templates`.

These templates can be modified like any other template. Email template modification provides the greatest flexibility and opportunity for customizing workflow emails. Although this kind of modification is relatively straightforward, it still requires careful component development. Modifying the subject and the message in the email is often the most important part of the message, and thus is often the most modified.

Custom workflow email templates that are based on the standard templates can also be created. Custom templates can be called as needed by adding them as the optional third parameter to the `wfNotify` function, as in these examples:

```
<$wfNotify(userName, "user", templateName)$>
<$wfNotify(aliasName, "alias", templateName)$>
```

If an alternate template is not specified, the system default template is used.

See the discussion of `wfNotify` in the *Oracle Fusion Middleware Idoc Script Reference Guide* for more details.

4.8.4.2 Customizing the Subject or Message Line

Criteria workflow email subject and message lines can be customized for your application. The email subject line appears in the email; the message line appears in the email body with other information about the workflow email (workflow name, step, and content item).

The message line defaults to one of two messages, depending on whether the step is notification-only (that is, if it has zero required reviewers).

Subject lines and message lines can be customized in two ways:

- The core string resource file can be modified according to standard component architecture.
- For simple customizations, the `wfMailSubject` (for email subjects) or `wfMessage` (for message lines) Idoc Script variable can be declared in a criteria workflow step event script or stored in the companion file.

4.8.4.2.1 Modifying Strings The string definitions are as follows (variable 1 is the content item title and variable 2 is the name of the workflow step):

```
<@wwWfIsNotifyOnly=Workflow notification for content item '{1}' is in step '{2}'.@>
```

```
<@wwWfReadyForStep=Content item '{1}' is ready for workflow step '{2}'.@>
```

```
<@wwWfRejected=Content item '{1}' has been rejected.@>
```

These string definitions are usually called with the Idoc Script `<$lc()$>` localization function and they can be aliased in a component resource file. See the

`<@dynamichtml wf_approve_mail_subject@>` include definition in the *std_page.htm* file for an example of email subject line string includes.

4.8.4.2.2 Changing Idoc Variables For simple email or subject line changes, Idoc Script rather than a component can be used. The `wfMailSubject` configuration variable or the `wfMessage` configuration variable can be placed in step event script. The value of these variables can also accept Idoc Script, as in this example:

```
<$wfMailSubject="My custom subject text for content with <${dDocTitle}> title"$>
```

No `eval()` function is required for the Idoc Script variables to evaluate.

If `wfMailSubject` or `wfMessage` is placed in the entry event of a workflow step, the email messages triggered by content entering the step receives the customized subject or message line. These variables can also be declared prior to a `wfNotify()` function and the email then generated by that function receives the customization.

4.8.5 Workflow Escalation

This example requires familiarity with tokens and coding.

Workflow escalation (that is, dynamically routing workflow content to different people than listed users) is a common workflow requirement. While this is easily accomplished with jumps and parsing of some criteria (for example, date, action, metadata) there is often some initial confusion or hesitation as to where or to whom the content should go.

The issue is further complicated when the solution is to add a larger number of step users and to require only a subset of those users to approve the content before it can move on. This workflow will still generate and send out emails and appear in the workflow queue of non-approving users, users out of the office, and others who are there "just in case" some primary reviewer is not available.

4.8.5.1 Setting Up a Workflow Escalation

This solution incorporates two custom user metadata fields, a token, and workflow step entry and update event code.

1. Create a user metadata field with the following elements:
 - name: `OutOfOffice`
 - type: text
 - option list: yes
 - option list type: select list validated
 - option list values: <blank>, false, and true
2. Create another user metadata field with the following elements:
 - name: `OutOfOfficeBackup`
 - type: Long Text

The `OutOfOffice` field is a flag that the user will set as TRUE when s/he is out of the office. The user sets this flag by selecting the TRUE option from the choice list and updating her/his user profile by clicking the update button.

The `OutOfOfficeBackup` field contains the user name(s) of those users who can fill in as proxies for the out-of-office user. This field will optimally contain a single user name, formatted exactly as it appears in the User Admin applet.

When the following workflow step event code finds that one of the listed users is "out of the office" it switches that user's name for the listed proxy (as designated by the value in the `OutOfOfficeBackup` field). The workflow step then restarts

with only the users who had not yet approved the content and any designated proxies.

A token pulls the list of users out of the companion file and sets them as step users. Special workflow messages are sent to designated proxies while the content was sitting in the update step event.

3. Create a workflow Token

- name: DynamicStepUsers
- Token Code:

```
<$if wfGet("dsu")$>
  <$wfAddUser(wfGet("dsu"), "user")$>
<$else$>
  <$wfAddUser("sysadmin", "user")$>
<$endif$>
<$if wfGet("dsa")$>
  <$wfAddUser(wfGet("dsa"), "alias")$>
<$endif$>
```

The token pulls a value for the custom variable `dsu` and `dsa` out of the companion file. If no value is found for `dsu` then the `sysadmin` user is added as a precaution. The initial values for `dsu` and `dsa` are listed in the entry event of the step. **Users only:** If you need to assign users to the step(s), add the first contributor to the first step and the next step must include the first user plus the next user, user two.

4. Paste the following code into the **entry** event of your workflow step. Note that comments are included through the entry code; remove the comments before inserting into your step:

```
<$restartFlag=wfGet("restartStep")$>
```

See if we got here due to a restart for new backup users. If so, suppress notifications to old users and notify only new ones

```
<$if restartFlag$>
<$if toInteger(wfGet("restartStep"))>=1$>
  <$wfSet("wfJumpEntryNotifyOff", "1")$>
  <$oooUsers=wfGet("outOfOfficeUsers")$>
  <$if strIndexOf(oooUsers, ",")>=1$>
```

Check for multiple out of office users

```
  <$wfMessage=eval("The Following Users are out of the office: <$oooUsers$>
\nYou are the designated backup for one of them.\n
  The content item <$dDocName$> is in the workflow step <$dwfStepName$>
awaiting your review")$>
<$else$>
  <$wfMessage=eval("The Following User is out of the office: <$oooUsers$>
\nYou are the designated backup for this user.\n
  The content item <$dDocName$> is in the workflow step <$dwfStepName$>
awaiting your review")$>
<$endif$>
<$rsMakeFromString("ooou", oooUsers)$>
<$loop ooou$>
  <$userBackupName=row&"_Bkup"$>
  <$wfNotify(wfGet(userBackupName), "user")$>
<$endloop$>
<$wfSet("restartStep", "0")$>
<$endif$>
<$else$>
```

```
<$wfSet("restartStep", "0")$>
<$endif$>
```

Set your step users here. Multiple users should be comma-separated, user names should be in quotes, metadata field references are unquoted. This example proceeds, using user names rather than aliases. Slight code re-working is required if using aliases.

```
<$dynamicStepUsers= <LIST USER NAMES IN QUOTES HERE>$>
```

```
<$if strIndexOf(dynamicStepUsers, ",")=1$>
```

If there are multiple users specified check to see if any of the MULTIPLE users are out of the office

```
<$rsMakeFromString("multiDynamicUsers", dynamicStepUsers)$>
<$loop multiDynamicUsers$>
  <$if strEquals(getValueForSpecifiedUser(row, "uOutOfOffice"), "true")$>
```

If user is out of office, get their backup

```
  <$backup=getValueForSpecifiedUser(row, "uOutOfOfficeBackup")$>
```

Replace out-of-office user in users list with their backup

```
  <$dynamicStepUsers=strReplace(dynamicStepUsers, row, backup)$>
<$endif$>
<$endloop$>
<$else$>
```

Check to see if the SINGLE user is out of the office

```
  <$if
strEquals(getValueForSpecifiedUser(dynamicStepUsers, "uOutOfOffice"), "true")$>
```

If user is out of office, get their backup

```
<$dynamicStepUsers=getValueForSpecifiedUser(dynamicStepUsers, "uOutOfOfficeBackup")$>
<$endif$>
<$endif$>
<$wfSet("dsu", dynamicStepUsers)$>
```

Set the dsu variable into the companion file with listed and backup users

5. Paste the following code into the **update** event of your workflow step, removing comment lines before doing so:

```
<$remainingUsers=wfGet("wfUserQueue")$>
```

Get users who have yet to approve

```
<$rsMakeFromString("ru", remainingUsers)$>
<$loop ru$>
<$if strEquals(getValueForSpecifiedUser(row, "uOutOfOffice"), "true")$>
```

Check the remaining users to see if they are out of the office

```
<$if getBackup$>
```

Create list of users requiring backup substitutes

```
  <$getBackup=row & " "&getBackup$>
<$else$>
  <$getBackup=row$>
```

```
<endif$>
<endif$>
<endloop$>
<if getBackup or strLength(getBackup)>0 $>
```

If one of the users is listed as out of office then rewrite the user list and restart the step

```
<$wfSet("outOfOfficeUsers",getBackup)$>
<$rsMakeFromString("needBkup", getBackup)$>
<$loop needBkup$>
<$bkupUser=getValueForSpecifiedUser(row,"uOutOfOfficeBackup")$>
<$newRemainingUsersList=strReplace(remainingUsers,row,bkupUser)$>
<$wfSet(row&"_Bkup",bkupUser)$>
<endloop$>
<$wfSet("dsu",newRemainingUsersList)$>
<$getBackup=""$>

<$wfSet("wfJumpTargetStep", wfCurrentStep(0))$>
<$wfSet("restartStep","1")$>
<endif$>
```

4.8.6 Other Customizations

Many workflow customizations are available through Consulting Services. This section briefly describes two of those customizations. Please consider engaging Oracle Consulting Services for a thorough evaluation of the impact associated with the replication of workflow examples.

The following customizations are discussed in this section:

- [Setting Approval by Non-Reviewers](#)
- [Automatic Replication of Workflow Items](#)
- [Triggering Criteria Workflows from Folders](#)
- [Suppressing Workflow Notifications](#)

4.8.6.1 Setting Approval by Non-Reviewers

It is sometimes necessary to have a person approve content in a workflow step even if that individual is not part of the actual workflow. For example, it may be useful to have a one-time outside opinion on a document in a particular stage in a workflow or be useful to designate a one-time reviewer because another reviewer is out of the office. This allows the individual to approve content but they do not get normal workflow notifications and do not see the content items in their workflow queues.

Users with designated roles or who are members of designated aliases can approve content on this basis. These designated users see a **Bypass Approve** link in the workflow actions box for each item in a workflow to which they have normal security access. Performing a Bypass Approve approves the content item in the step in which it currently resides. Defined step exit conditions are still evaluated and still apply. The approval is logged in the Workflow History database table and in the WorkflowActionHistory ResultSet of the companion file.

A designated approver is not a regular workflow step approver and thus does not receive automatic workflow notifications. Because of this, access to a content item in a workflow where the approver wants to perform a Bypass Approve action must be intentional. The designated approver must access the **Active Workflows** menu, then select the workflow name and select an action.

The designated approver component aliases core resources. Therefore if other components are running or are planned, this should be taken into account. In some cases, component resources may be combined to include all desired functionality or can be renamed and re-referenced to keep all components working correctly (but separately).

4.8.6.1.1 Scenarios For the following scenarios, assume that User A has a role or alias that grants designated approver status and that a sample workflow named `MyWF` has two steps.

- **Scenario 1:** User A is listed as an approver for step 1 in `MyWF` but not in step 2. Therefore, no **Bypass Approve** link appears for Step 1. User A received default workflow action capabilities and notifications. The **Bypass Approve** link for step 2 appears under the **Workflow Actions** menu if User A accesses the **Content in workflow 'MyWF'** page when the content item is in step 2.
- **Scenario 2:** User A is not listed as an approver in `MyWF`. The **Bypass Approve** link appears in the action menu on the **Content in workflow 'MyWF'** page for all steps and for all content to which User A has at least Read permission in its Security group.
- **Scenario 3:** User A is not listed as an approver for Step 1 in `MyWF`. Step 1 requires two approvals from reviewers before it will move to step 2. The **Bypass Approve** link appears for User A. Clicking **Bypass Approve** registers an approval and fulfills one of the two required approvals for the step to continue in the workflow.

4.8.6.2 Automatic Replication of Workflow Items

Content items are often processed (in one form or another) before they are 'released'. A released content item is indexed and can then be included in search results, archives, and in other processes and applications.

It is sometimes useful to release a content item prior to its completion in the workflow. For example, a content item must be in a released state in order to be replicated (and perhaps later used in disaster recovery). Items not released (such as items in workflows) are not used by the replicator.

It is possible to designate workflow items as released while still in workflow. Normal workflow actions, such as updating, checking out, and checking in are still available. However, these items will be indexed and show up in search results, can be used in replication and archiving, and in any other processes or applications.

Important: There are several elements to consider before replicating workflow items. This section describes the process but does not go into detail; contact Consulting Services before setting up replication of workflow items.

4.8.6.2.1 Potential Conflicts There are several points to be aware of before setting up automatic replication:

- **Loss of data integrity:** A premature release of content, whether intentional or otherwise, can have unforeseen effects on business process management, content accessibility, and information integrity. Potential ramifications should be thoroughly considered before the release of items still in workflow is considered.
- **Non-capture of workflow information:** Workflows are a combination of process **and** content. While it is possible to release content and make it available for replication and other processes, it is not possible (without customization and

assistance from Consulting Services) to capture and replicate workflow *state* information.

If content in a workflow on a source instance is replicated and released on a target instance without passing through a workflow on that instance, the recovery process will involve manual effort to re-set the content's workflow state.

In most cases, cloning of workflow information is not necessary because recovery to a prior workflow state is required only during true disaster recovery. In all other cases, content items will replicate as normal after exiting a workflow and will supersede versions or revisions replicated during workflow.

- **Imported content items do not enter workflow:** Content items replicated while in a workflow on a source instance will not enter a workflow on the target instance without additional customization and assistance from Consulting Services. Replicated content items will be checked in to the target instance and released.
- **Restoration of replicated workflow items requires manual intervention:** Some workflow information can be captured as metadata for use in a manual restoration of the workflow. Only a check-in action triggers a content item's entry into workflow; therefore, the restoration of an item back into a workflow requires that a new revision be created.

This introduces a discrepancy between the number of revisions on the source and the target instances. In order to recover the content items on the target to a state as close as possible to their previous state on the source, a discrepancy between the two instances is intentionally and unavoidably introduced.

4.8.6.2.2 Scenarios For content item 1, **not released while in workflow**, the following is true:

- The content item moves through workflow in a non-released state.
- The content item is not a candidate for replication while in workflow.
- The content item is available only to named workflow step reviewers and administrators.
- When the content item completes the workflow, it is released to the Content Server, indexed, and is now a candidate for replication.

For content item 2, **released while in workflow**, the following is true:

- The content item moves through workflow and is released as specified. After an item is released, it cannot be 'unreleased'. New revisions of a content item created during workflow are not released unless specified.
- Content items released while in workflow will display in search results and can be viewed by users with the appropriate security access.
- Users cannot edit, check out, check in, or update a released item that is in workflow unless they are designated users for the step in which the item is located and that step allows the attempted action.
- A content item released while in workflow is a candidate for automatic replication. The Replicator treats the item as if it is not in workflow.
- Content items completing workflow are replicated in the normal fashion and supersede any pre-existing content item versions replicated during workflow.

Contact Consulting Services for details about and the implications of the release of content items in workflow for replication or other purposes.

4.8.7 Triggering Criteria Workflows from Folders

It is sometimes necessary for documents in a particular folder to go through a criteria workflow. However, when you create a criteria workflow based on a folder, the criteria option of `folder` is not listed in the field list. The field list in criteria workflows only lists fields with a type of `text` or `long text`. Because `Folder (xCollectionID)` is an integer field, it is not an option.

Although the folder field cannot be selected on the Edit Criteria form, it can be defined as a criteria in Events. In the Entry Event of the first step, a criteria can be set up to check for the appropriate folder number (`xCollectionID`). If it does not fulfill the criteria, the item can be exited from the workflow.

The following general steps detail how to set up such a workflow:

1. Start a new criteria workflow and choose the Security Group that the workflow will use.
2. In the Criteria Definition section, define a global criteria to monitor all of the documents that enter the system. This can be something as simple as the following:

```
Field: ContentID
Operator: Matches
Value: *
```

This checks every content item matching the Security Group coming into the system. It may be preferable to only monitor items coming in through folders. In that scenario, an extra metadata field can be set which is defaulted on all folders for which the criteria is based.

If multiple workflows are in place, it may be best to filter all content through this workflow and jump to sub-workflows through multiple criteria settings in the first step of this workflow.

3. Add the first step to the workflow.
4. In the Events tab, click **Edit** from the Entry Event.
5. On the Jumps tab, click **Add**.
6. Give the jump a meaningful name (for example, Folder Criteria) and click **OK**.
7. For the jump criteria, enter the following:

```
Field: Folder
Operator: Not Equals
Value: Folder ID on which the workflow should be based
```

When done, click **Add**.

8. For the Target Step, select Exit to Parent Step and change both of the 0 parameters to 10 (for example, `@wfExit(10,10)`). This forces documents that are not in the folder out of the workflow.
9. Click **OK** on the Entry Event and click **OK** on the Add New Step dialog.
10. Add the necessary jumps, steps, and events for the rest of the workflow and enable it.

4.8.8 Searching Within a Workflow Step

When executing the `GET_SEARCH_RESULTS` service within a workflow step, you may not get the expected results. When executing services in a workflow event, you

can experience data corruption because the workflow's data binder is being used by the service.

A solution for this is to temporarily set the security group value into a temporary variable. Then clear the current security group value, make the call for the search results, then reset the security group back again. This should return the results being sought.

4.8.9 Suppressing Workflow Notifications

When a workflow step requires multiple approvers, a user who has already approved the document may be re-notified during a timed workflow update cycle. In order to prevent additional notifications, use the `wfSetIsNotifyingUsers` workflow function. Used in a workflow step in the script section of the workflow, it sets an internal flag to determine if workflow notifications will be sent out during the current document action (check in, approve, update, and so on). The suppression is applied to both email and updates to the workflow in the queue.

When used in combination with `wfIsFinishedDocConversion`, this function can suppress notification until conversion is finished. It does not prevent documents from advancing out of the auto-contributor step but it does stop updates of the workflow in queue and notification emails.

These notifications are not lost. If the `wfSetIsNotifyingUsers` function is not used in a future workflow event to suppress notifications (updates to workflow in queue and workflow mail) then all users participating in the current step are notified.

Additional functions which can be used in the script section are the following:

- `wfIsFinishedDocConversion`, which returns a result indicating if the document will not be in GENWWW after the current document action ends.
- `wfIsNotifyingUsers`, which returns a result indicating if the workflow is currently suppressing all workflow notification for this particular workflow event.

See the *Oracle Fusion Middleware Idoc Script Reference Guide* for usage details for all of these functions.

4.9 Workflow Troubleshooting

This section provides solutions to several common workflow issues.

- ["Workflow Item Stuck in EDIT or GENWWW Status"](#) on page 4-52
- ["Workflow Item Stuck in REVIEW Status"](#) on page 4-54
- ["Workflow Item Entered in Wrong Workflow"](#) on page 4-54

4.9.1 Workflow Item Stuck in EDIT or GENWWW Status

Symptom

A content item in a workflow is in EDIT or GENWWW status, and no reviewers were notified by e-mail that action is required.

Problem

Inbound Refinery failed to convert the file properly.

Recommendation

1. View the content item's status in Repository Manager or the Content Items for Workflow page (accessed from **Content Manager**, then **Active Workflows** and then *<Workflow_Name>*). For more details on the conversion failure, display the Content Information page.
2. Determine why the conversion failed:
 - If the problem was with Inbound Refinery or a conversion add-on product:
 - a. Correct the problem so that the file will convert properly.
 - b. Resubmit the file for conversion from Repository Manager or Content Information page. The content item will continue through the workflow.
 - If the problem was with a file in a criteria workflow and the content item is the only item in the workflow:
 - a. Save a copy of the native file.
 - b. Disable the workflow to release the content item.
 - c. Delete the released revision using Repository Manager or the Content Information page.
 - d. Correct the problem so that the file will convert properly.
 - e. Check in the content item again so that it goes through the entire workflow process.
 - If the problem was with a file in a criteria workflow and there are multiple content items in the workflow:
 - a. Save a copy of the native file.
 - b. Delete the "stuck" revision using Repository Manager. (You could disable the workflow, but all content items in the workflow would be released.)
 - c. Correct the problem so that the file will convert properly.
 - d. Check in the content item again so that it goes through the entire workflow process
 - If the problem was with a file in a basic workflow and the content item is the only item in the workflow:
 - a. Save a copy of the native file.
 - b. Cancel the workflow to delete the revision from the system.
 - c. Correct the problem so that the file will convert properly.
 - d. Contribute the content item again to the Basic workflow so that it goes through the entire workflow process.
 - If the problem was with a file in a basic workflow and there are multiple content items in the workflow:
 - a. Save a copy of the native file.
 - b. Delete the "stuck" revision using Repository Manager. (You could cancel the workflow, but all content items in the workflow would be deleted from the system.)
 - c. Correct the problem so that the file will convert properly.
 - d. Contribute the content item again to the Basic workflow so that it goes through the entire workflow process

4.9.2 Workflow Item Stuck in REVIEW Status

Symptom

A content item in a workflow is in REVIEW status, and the minimum number of reviewers have approved it, but the revision is not moving to the next step.

Problem

The content item does not meet the exit criteria of the workflow.

Recommendation

1. Check the exit condition definition in the workflow step to see why the document does not meet the exit criteria.
2. Determine if the file is finished interacting with an external process. Resolve any problems with the external process to see if the exit condition can be met.
3. If there is an error in the exit condition and/or external processing, you can check out the document and check it back in with the correct metadata to meet the exit condition.

4.9.3 Workflow Item Entered in Wrong Workflow

Symptom

A content item entered the wrong criteria workflow.

Problem

Two or more criteria workflows have the same criteria defined. The content item matched this criteria, so it entered the first matching workflow in the workflow list.

Recommendation

Redefine the criteria so that each workflow has a unique combination of the security group and metadata field value. If necessary, use jumps and sub-workflows to define additional criteria within the main workflow.

Managing PDF Watermark

This chapter provides information on managing PDF Watermark. It covers the following topics:

- ["PDF Watermark Overview"](#) on page 5-1
- ["Administering PDF Watermark"](#) on page 5-5

5.1 PDF Watermark Overview

This section covers the following topics:

- ["About PDF Watermark"](#) on page 5-1
- ["How PDF Watermark Works"](#) on page 5-1
- ["Considerations"](#) on page 5-5

5.1.1 About 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 the component PDF Converter (static) and returned to the content server.

Existing PDF files already residing on the content server can also be watermarked (dynamic). Dynamic watermarks are generated on-the-fly 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.

5.1.2 How PDF Watermark Works

PDF Watermark integrates the static and dynamic watermarking functions. The Administrative applet for PDF Watermark permits administrators to set specific criteria for both types of watermarks. This section covers the following topics:

- ["Additional Metadata Fields"](#) on page 5-2
- ["Static Watermarking"](#) on page 5-2
- ["PDF Optimization"](#) on page 5-2
- ["Dynamic Watermarking"](#) on page 5-2

- ["Watermark Placement"](#) on page 5-2
- ["PDF Watermark Administration Screen"](#) on page 5-3
- ["Configuration Settings"](#) on page 5-3

5.1.2.1 Additional Metadata Fields

The installation automatically creates a TemplateType metadata field with an associated option list, and a TemplateID field, which is used for static watermarking. Currently there is only one TemplateType, the default PDFW_Template.

5.1.2.2 Static Watermarking

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.

5.1.2.3 PDF Optimization

PDFs that come from the PDF Converter may have been optimized for faster web viewing. If a static watermark is applied to that content, the optimization is lost.

To optimize the PDF after watermarking requires you to use a third-party optimizer; a PDF optimizer is not provided with PDF Watermark. To use the optimization feature, you must have a distiller engine/optimizer installed and the optimizer must be fully operational. The optimizer you choose must be able to execute conversions via a command-line, for example, a script file or a .bat file.

5.1.2.4 Dynamic Watermarking

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.

5.1.2.5 Watermark Placement

PDF Watermark provides explicit X-Y location support for text and image watermarks. In addition to location values of CENTER, TOP, and BOTTOM, you may select EXPLICIT which enables the X Coordinate and Y Coordinate text boxes. Users enter coordinates on the edit dialog for text or image watermarks. The coordinates are in points, with each point equal to 1/72". The origin (0, 0) is the lower left corner of the page. X-Y coordinates can be set only when EXPLICIT is selected.

5.1.2.5.1 Images For images, the X,Y coordinates locate the lower left hand corner of the image rectangle. The image extends up and to the right depending on how big it is.

5.1.2.5.2 Text The origin determines the lower corner boundary of the text rectangle. ALIGNMENT determines how the text is located left and right, relative to the origin.

If ALIGNMENT is LEFT, then the text is LEFT ALIGNED with the origin, that is, the lower left corner of the text rectangle is located at the origin and the text extends towards the right.

If ALIGNMENT is RIGHT, the text rectangle will be right aligned at the origin, that is the origin will be the lower right corner of the text rectangle and the text will be located to the left of the origin.

If ALIGNMENT is CENTER, the text rectangle will be centered at the origin.

5.1.2.6 PDF Watermark Administration Screen

The [PDF Watermark Administration Screen](#) enables you to define the rules that determine which template, if any, gets applied to a specific PDF content file. You can also create and modify the templates themselves, as well as configuring the default metadata values for templates.

5.1.2.7 Configuration Settings

When you create a new template, it is checked in as a managed object. You can use the Configuration tab on the PDF Watermark Administration screen to set the default metadata field values for the template checkin process.

If there are defined, required metadata fields for your Content Server instance, you must use the Configuration tab to define suitable values for these fields. You must define these values prior to creating a template.

5.1.2.7.1 Templates Templates are managed objects, and must be checked in before they can be used. When a new template is created and you click OK, the template is checked in using the default metadata you defined on the Configuration tab. When you modify an existing template, and click OK, the existing template is checked out of content server, and it is checked back into content server using the current metadata.

Because the template is a managed content item, you can change the default metadata on the Information page for the content item.

Templates can contain text watermarks, image watermarks, or both.

User/Owner passwords are encrypted in the PDF Watermark Template. Encryption is performed automatically when the template is saved and decryption is performed automatically when the template is used for a watermark. Passwords in existing, or legacy, templates are not encrypted until the template is saved from the PDF Watermark Administration screen. You cannot save a template unless you make a change to it. If you wish to have all your template passwords encrypted, you'll need to edit each legacy template, making some minor change to it before saving.

Note that storage for the X-Y coordinate values, and an encryption flag, required a template schema upgrade. Legacy schema templates are supported for watermarking, but any change to the template will result in an upgrade to the new schema. Consequently, any template which has been changed in Content Server version 11gR1, may not work correctly with older versions of Content Server.

You must check in templates prior to configuring rules, because rules are used to determine which watermark template is applied to the content when Dynamic watermarking is performed.

5.1.2.7.2 Rules - Dynamic Watermarking Rules determine which template, if any, gets applied to a specific PDF content file. The order in which the rules are tested may be significant, depending on the criteria used. Generally rules should be ordered with the most specific tests first in the list, and more general ones subsequent. On the Rules Tab

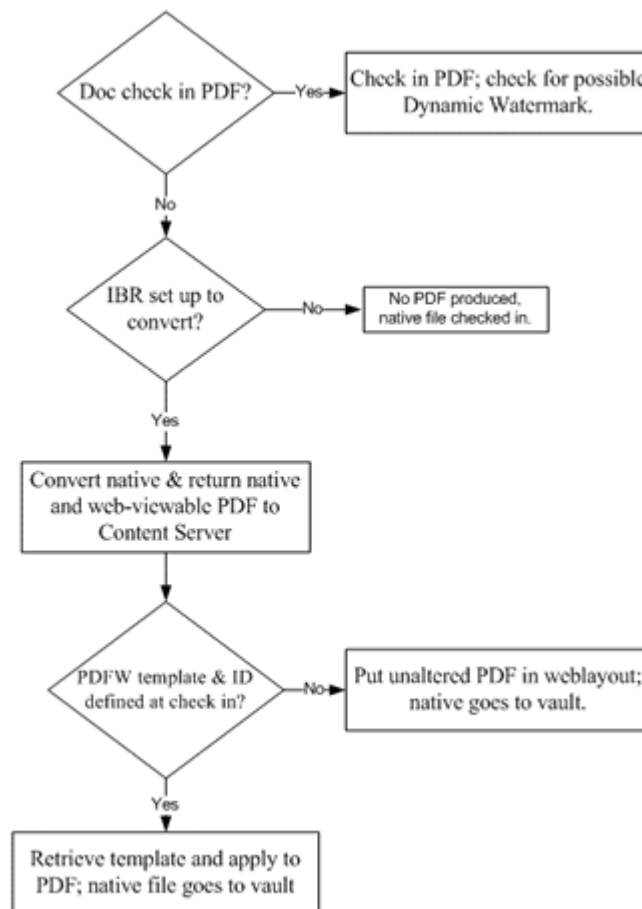
of the PDF Watermark Administration screen, use the Move Up and Move Down buttons to accomplish this.

The higher the rule on the list, the higher the precedence. For example, you have rule1 which is dDocType=ADCORP and you also have rule2 which is dDocAuthor=sysadmin. If sysadmin checks in a content of dDocType=ADCORP, rule1 will be used if it is positioned above rule2. However, rule2 will be used if it is first on the list.

5.1.3 Static Watermarking Scenario

Content Server receives processed content from the Inbound Refinery. The Inbound Refinery in use must have PDF Converter installed, enabled, and configured to convert the necessary file formats into PDF.

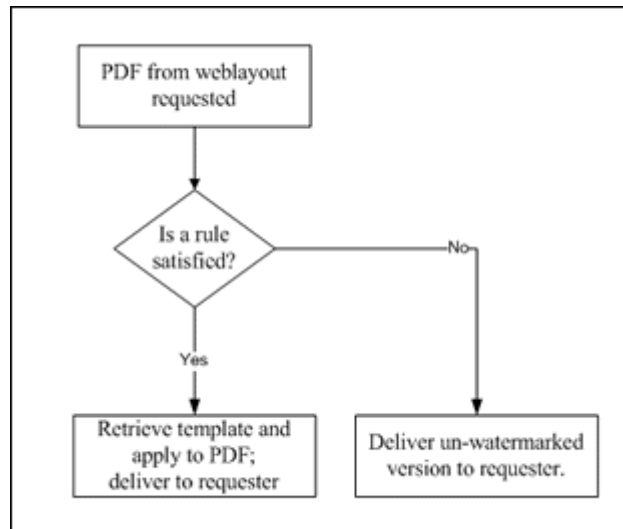
When a document is checked in, for example a Word document, the native file is rendered into PDF by the PDF Converter. When the PDF file is presented to the Content Server, the watermark template selected during the content checkin is applied. Previous versions of watermarking required the user to define a number of field variables, such as page size, font, orientation, and others upon checkin. Watermark elements are now pre-defined in the template used to watermark the incoming PDF. The watermark is applied and is delivered to requesters without regard for dynamic watermarking rules. Rules-based watermarking (Dynamic) can also be applied in addition to a static watermark.



5.1.4 Dynamic Watermarking Scenario

When a web-viewable PDF is requested by a user, a check is performed, based on the defined rulesets, to determine whether a watermark (if any) is to be applied to the web-viewable PDF delivered to the requester.

If a given request for a PDF document satisfies a pre-defined rule, the template associated with that rule is used to watermark a copy of the content before the copy is returned to the requesting user.



5.1.5 Considerations

A PDF optimizer is not provided with PDF Watermark. If you elect to use the Optimization feature of PDF Watermark, you must have already installed a third-party distiller engine/optimizer, and the optimizer must be fully operational. The optimizer you choose must be able to execute conversions via a command-line, for example, a script file or a .bat file.

5.2 Administering PDF Watermark

The information in this chapter contains the procedures necessary to use all of the features of the PDF Watermark component. This section covers the following topics:

- ["Using PDF Watermark in Content Server"](#) on page 5-5
- ["Starting PDF Watermark Administration"](#) on page 5-6
- ["Setting Configuration Settings"](#) on page 5-7
- ["Adding Templates"](#) on page 5-7
- ["Editing Templates"](#) on page 5-8
- ["Creating Rules"](#) on page 5-8
- ["Editing Rules"](#) on page 5-9

5.2.1 Using PDF Watermark in Content Server

For content items to be processed by PDF Watermark, the administrator must develop and manage watermark templates, set and define rules, and set criteria.

Dynamic watermarking of PDF content is rules-based. If a given request for a PDF document satisfies a pre-defined rule, 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 copy returned to the user is watermarked; the original PDF file in weblayout is unchanged.

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 statically watermarked. You can request a static watermark for content which you intend to be converted to PDF by entering a valid PDF Watermark Template ID (dDocName) in the metadata field during checkin.

5.2.1.1 Specifying the Classpath for an Encryption Library

For the content server to encrypt passwords successfully, you need to provide a reference to an encryption library to be used with PDF Watermark. To do this, complete the following steps:

Note: Oracle does not provide an encryption library with Content Server. This procedure assumes that you will use a third-party encryption library. One such library is `bcprov-jdk14-138.jar`; downloadable from BouncyCastle.org, but you can use any other library you choose.

1. Download an encryption library .jar file and paste it into the following directory:
/shared/classes
2. From the Windows Start menu, select **Programs, Content Server-[Instance Name], Utilities**, and then **System Properties**.
The System Properties applet is started.
3. Open the Paths tab.
4. Specify the following as the classpath:
`JAVA_CLASSPATH; $SHAREDDIR/classes/bcprov-jdk14-138.jar`
5. Click **OK** to save the changes and exit the System Properties utility.

5.2.1.2 Starting PDF Watermark Administration

Template, Rules and Configuration definitions for PDF Watermark are managed in Content Server using the PDF Watermark Administration screen. To make changes, perform these tasks:

1. Make sure you are logged into Content Server as an administrator.
2. In the navigation menu, select **Administration**, then select **PDF Watermark Administration**.
The PDF Watermark Administration icon is displayed.
3. Click the PDF Watermark Administration icon. The [PDF Watermark Administration Screen](#) screen is launched.

5.2.1.3 Setting Configuration Settings

When you create a new template, the template is checked in as a managed object. You can use the Configuration tab on the PDF Watermark Administration screen to set the default metadata field values for the automatic template checkin process.

If there are defined required metadata fields for your Content Server instance, you must use the Configuration tab to define suitable values for those fields. You must define these values prior to creating a template. Once the templates are checked in, you may use Update or any similar process to modify the metadata values for an existing template.

To define specific metadata fields for template checkin, perform these tasks:

1. Select the Configuration tab.
2. Highlight the Field Name and Value pair to define/edit.
3. Click **Edit**.
The [Configuration Tab](#) is displayed.
4. Set the value to be applied for the Field name selected.
5. Click **Apply**.

5.2.1.4 Adding Templates

Templates must be in place prior to configuring rules, because rules determine which watermark template is applied to the content. To add a template perform these tasks:

1. Select the Templates tab.
2. Click **Add**.
The [Add New/Edit Template Screen](#) is displayed.
3. Name your template; and give it a meaningful content ID.
4. Set security if desired; if security is set, then enter passwords.

Note: The User password permits the opening and viewing of the PDF. The Owner password permits control over printing and copying, and viewing.

5. Set to allow, disallow, or degraded printing.
6. Set to allow or disallow copying.
7. Add a text watermark, an image watermark, or both.

For a text watermark, perform these tasks:

- a. In the Text Watermarks Summary, click **Add**.
- b. Enter the text for the watermark.
- c. Set all other values as desired for the text watermark. See "[Add New/Edit Text Watermark Screen](#)" on page A-138 and its accompanying table for details on settings.

For an image watermark, perform these tasks:

- a. In the Image Watermarks Summary, click **Add**.
- b. Enter the content ID of the desired image object.

Note: The image watermark must be a managed content item on the content server.

- c. Set all other values as desired for the image watermark. See "[Add New/Edit Image Watermark Screen](#)" on page A-139 and its accompanying table for details on settings.
8. Apply your changes.

5.2.1.5 Editing Templates

To edit a template perform these tasks:

1. Select the Templates tab.
2. Select the template from the list of templates.
3. Click **Edit**.
The [Add New/Edit Template Screenscreen](#) is displayed.
4. Make your changes to the text and image watermarks, similarly to the way they were initially defined. See "[Adding Templates](#)" on page 5-7.
5. Apply your changes.

5.2.1.6 Creating Rules

Rules determine which template, if any, gets dynamically applied to that content in PDF form. When a request is made for the web-viewable PDF, the rules are applied to the request, and based on the rules criteria, a watermark may be applied.

The higher the rule on the list, the higher the precedence. For example, you have rule1 which is dDocType=ADCORP and you also have rule2 which is dDocAuthor=sysadmin. If sysadmin checks in a content of dDocType=ADCORP, rule1 will be used if it is positioned above rule2. Accordingly, rule2 would be used if it were listed first.

To add a rule, perform these tasks:

1. Select the Rules tab.
2. Click **Add**.
The [Add New/Edit Rule Screen](#) is displayed.
3. Enter the rule name in the appropriate text box and select a watermarking template from the choice box.
Rule names are purely descriptive; you may select a name that describes the way a rule is used.
4. Set the rule conditions by adding criteria.

Note: Rules criteria are case-sensitive. If a criteria is defined for a rule, using lower case for dDocname, and the Content ID is returned from the content server in upper case, the rule will fail.

Within a rule, the order of the criteria does not matter, as all criteria must be satisfied for the rule to activate.

5. Click **OK**.

5.2.1.7 Editing Rules

The order in which the rules are tested may be significant, depending on the criteria you use. In general, order your rules with the most specific tests (number of criteria) high in the list, and the more general ones (fewer criteria) lower down. There are "Move Up" and "Move Down" buttons for this purpose. on the Rules tab of the [PDF Watermark Administration Screen](#).

1. Select the Rules tab.
2. Select the rule to be edited, and click **Edit**.
The [Add New/Edit Rule Screen](#) is displayed.
3. Select the Criteria/Values pair to be edited, and click **Edit**.
4. Edit the value in the Edit Criteria screen, and click **OK**.

Managing Folders and WebDAV

This chapter provides information about administering Folders and WebDAV. It covers the following topics:

- ["About Folders"](#) on page 6-1
- ["About WebDAV"](#) on page 6-8
- ["Administering Folders"](#) on page 6-11
- ["Administering WebDAV"](#) on page 6-20

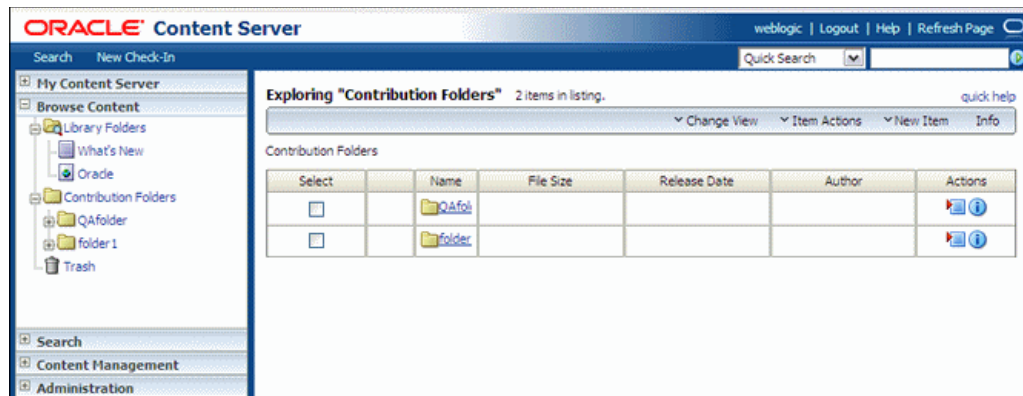
6.1 About Folders

This section covers the following topics:

- ["Folders Overview"](#) on page 6-1
- ["Usage Scenarios"](#) on page 6-2
- ["Folders Structure"](#) on page 6-3
- ["Naming Folders"](#) on page 6-4
- ["Folders Component Security"](#) on page 6-4
- ["Folder Metadata Inheritance"](#) on page 6-5
- ["Trash Bin"](#) on page 6-5
- ["Metadata Propagation"](#) on page 6-5
- ["Folder Content Item Revisions"](#) on page 6-6
- ["Default Metadata Values"](#) on page 6-6
- ["Local Folders"](#) on page 6-7
- ["Folder Archiving"](#) on page 6-8
- ["Folder Searching"](#) on page 6-8
- ["URL-Mapped Folders"](#) on page 6-8

6.1.1 Folders Overview

Folders is an optional component that is automatically installed with Content Server. When enabled, it provides a hierarchical folder interface to content in Content Server in the form of "virtual folders" (also called "hierarchical folders"). Virtual folders enable you to create a multi-level folder structure. [Figure 6-1](#) shows virtual folders as viewed from a content server web page.

Figure 6–1 Virtual Folders in Content Server Interface

Virtual folders provide the following benefits:

- Users can find content by drilling down through a familiar folder-type interface. Some of the fields in the My View search results are unavailable or not applicable when browsing through virtual folders.
- Users can apply default metadata to content items by checking them in through a particular folder.
- The system administrator can control the default metadata applied to content items by appropriately setting up folders.
- In turn, the preset default metadata is applied to content items when users check them in through a particular folder (set up by the system administrator).

6.1.2 Usage Scenarios

The main usage scenarios for the Folders functionality are as follows:

- Browsing: Users should be able to browse through folders to find sub-folders, and content items. Users should have a simple mechanism to get additional information about a folder, and to traverse back up the tree structure. Users should be able to view folders containing hundreds of items and sub-folders. In a folder containing a large number of sub-folders, the user should be able to easily view and browse through content items in that folder. Similarly, in a folder containing a large number of content items, a user should be able to easily view and browse through the sub-folders.
- Creating folders: In any given folder, users should be able to create new folders. Ideally, this process should involve only naming the folder. Additional information, such as folder metadata, default metadata, etc. should be accessible only if needed.
- Assigning folder metadata: A user should be able to assign metadata to folders. This action should be possible at folder creation time. A user should be able to assign folder metadata on existing folders as well. The process and steps for both should be the same.
- Assigning default metadata for items: A user should be able to specify metadata that should be assigned to content created in or added to a folder. The user should be able to set this metadata at folder creation time or at a later time. In either case, the steps and process for setting metadata should be the same.
- Assigning a Content Profile to a folder: A user should be able to assign a content profile to a folder. This may be done at folder creation time or later. This will

determine what metadata fields are available to be set as defaults for content items added to that folder.

- Creating new content in a folder: A user should be able to browse into a folder and create (check-in) a new item into it. If the folder specifies default metadata for new content, or a content profile, then the content check-in form should accurately reflect that.
- Adding existing content to a folder: A user should be able to browse into a folder and add a link/shortcut to an existing content item. That content item may exist in another folder, or may be in the content server and not in any folder. No metadata should be required at that time since the content item already exists in the server. If the destination folder contains items with the same name, the user should be asked to rename the new link/shortcut.
- Moving an item/folder from one folder to another: A user should be able to browse to a folder, select one or more sub-folders and content items, and move them into another folder. The user should not be able to move the folder/items into the child of a folder that is selected to be moved. No metadata should be required as these are existing items/folders. If the destination folder contains items with names the same as those that are being moved, the user should be asked if those items and folders should be overwritten or not.
- Copying an item/folder from one folder to another: A user should be able to browse to a folder, select one or more sub-folders and content items, and copy them to another folder. This action should create new copies of the selected folders and items (i.e. not links) into the destination folder. Metadata should be copied over and the user should not be prompted to ask for new metadata. If the destination folder contains folders and content items with names same as those being copied, the user should be asked if the destination files and folders should be overwritten or not.
- Deleting an item/folder: A user should be able to browse to a folder, select one or more sub-folders and content items, and delete them. The user should be prompted for confirmation of delete action. For items, with multiple revisions, user should be asked for all revisions should be deleted or only the latest revision. The user should have an option to apply their answer to all selected files.
- Renaming an item/folder: A user should be able to select a link/shortcut or sub-folder within a folder, and choose to rename it. The rename action should be allowed only on single items. If the new name is same as that of an existing item or folder, the user should be warned and required to change the name to be unique.

6.1.3 Folders Structure

The following structure is used for Folders:

- Each content server instance has a common set of virtual folders. Any change to the folders is applied system-wide.
- There is one default system-level folder, called *Contribution Folders*.
 - The Trash Bin function is enabled during installation with a system-level folder called *Trash* created.
- The system administrator can change the name of a system-level folder, but cannot delete it or add a custom system-level folder except through changes to the database. (Deleting a system-level folder disables it, but does not remove it from the system.)

- Each folder in the hierarchy contains content items that have the same numerical "Folder" value, which is assigned automatically upon creation of the folder. Changing the value of the Folder field for a content item places it in a different folder.
- The maximum number of folders and content items in each folder can be limited so that browsing through virtual folder does not affect system performance.

6.1.4 Naming Folders

The Folders component mimics the Windows file system. Therefore, when you create a folder, you are not allowed to use double quotes in the name (for example, "doublequotedfolder"). Using double quotes will cause an error. You must use the standard naming conventions for Windows when creating folders.

6.1.5 Folders Component Security

The Folders component applies security at two levels:

- Content item level
- Folder level

6.1.5.1 Content Item Security

The user logins and security controls in Content Server also apply to content that is managed through virtual folders. For example, if you have Read permission for a content item, you will be able to view the file, but you will not be able to check in a revision to the file.

To allow users with Read permission to access content through a virtual folder, the `GetCopyAccess` environment variable must be set. This can be selected in the Admin Server from the Content Security page by selecting the **Allow get copy for user with read privilege** checkbox.

6.1.5.2 Folder Security

In addition to content item security, security is also applied at the folder level:

- Users can see only the virtual folders that are assigned no security group or a security group for which they have at least Read permission.
- Each virtual folder has an *owner*, which is a user who has permission to manage the folder. The owner can change a folder's metadata and delete the folder, even if they do not have Write or Delete permission to the folder's security group. However, the owner does not have additional permissions to content items within the folder.
- To change a folder's default metadata, you must have Delete permission to the folder or you must be the owner of the folder.
- To delete a folder, you must have Delete permission to the folder or you must be the owner of the folder. You must also have permission to delete all of the content items and subfolders in that folder.

Caution: Be careful when changing the security group of a folder. If you change a folder to a more restrictive security group, authors may no longer have permission to manage their own content items.

6.1.6 Folder Metadata Inheritance

When you create a new folder, the metadata from the parent folder will populate the fields for the new folder. This allows the folder to initially “inherit” metadata, but allows you to make changes to the new folder.

Subsequent changes to a parent folder's metadata do not affect the metadata for existing subfolders. If you want to apply a parent folder's metadata to subfolders and content items, you can use the [Metadata Propagation](#) feature.

6.1.7 Trash Bin

The *Trash Bin* function is an optional feature that sends deleted items to a Trash folder, rather than permanently deleting the items. Items in the Trash folder can then be permanently deleted or restored to their original location in the folder hierarchy. This enables users to recover files and folders that have been mistakenly deleted.

Please note the following considerations with regard to the Trash Bin feature:

- Deleting a revision from the Repository Manager bypasses the Trash folder and permanently deletes the revision.
- The Trash Bin function can be enabled and disabled using System Folder Configuration after installation.
- If you are using folders to contribute content to a Site Studio website, you may want to disable the Trash Bin feature. Otherwise, any deleted content items (i.e., moved to Trash Bin) will still show up in your tables of contents (dynamic lists) on the website. To get rid of the content items, you need to go into the Trash Bin in WebDAV and explicitly delete the documents from there, too.

6.1.8 Metadata Propagation

The *metadata propagation* function enables contributors to copy default metadata values from a folder to its subfolders and content items. Typical uses for this function include:

- After moving a large number of content items to a new folder structure, you want to apply the top-level folder's default metadata to all subfolders and content items.
- You revised the default metadata for a folder, and you want to apply it to subfolders and content items within that folder.

Note the following considerations with regard to metadata propagation:

- The propagation function applies each folder's metadata to all "uninhibited" subfolders and content items within those folders. This means that each uninhibited subfolder and content item will inherit the metadata of the folder from which propagation was launched.
- When you inhibit a folder, it is not affected by metadata propagation from a higher-level folder. However, you can still launch metadata propagation *from* an inhibited folder.
- The system administrator selects which metadata fields are included in propagation. (This is a system-wide setting.) By default, no metadata fields are included until they are selected on the Information Field Inherit Configuration Page.
- If a folder metadata field does not have a value defined, subfolders and content items within that folder may not inherit the "blank" value during propagation and any existing metadata values may stay intact for these items. This depends on the

value of the `CollectionPropagateEmptyValues` configuration variable, which controls whether empty field values are propagated.

- When you launch metadata propagation, only folders and content items for which you have Write permission to the security group will be affected.

6.1.9 Folder Content Item Revisions

When documents are edited and checked into the content server, the revised document must undergo a process that involves being converted, indexed, and released. Before this process is complete, the system considers the revised document to be the "latest" version. After the process is complete, the system considers the revised document to be the "latest released" version.

Depending on how the version release configuration variable `CollectionReleasedOnly` is set, users with read access to the content item will see either the latest version or nothing if the item is not released. Authors, however, will always see the latest version. By default, this variable is enabled and displays the latest version to all users with read access.

- **Latest Version:** If the `CollectionReleasedOnly` configuration variable is set to *false*, the visibility of content items is based on the item version rather than the release state. In this case, when a new revision of an existing content item is checked into a folder, the author and all users with read access to the content item are allowed to view the latest version of the revised document.

In the latest version visibility mode, the author and users with read access can view revised items before and after they are converted, indexed, and released. In fact, even if the revised content item fails conversion or indexing, it will still be visible to the author and all users with read access. Additionally, if the release date of the new revision is set to a future date, the revised content item will also be visible to the author and all other users with read access.

- **Latest Released Version:** If the `CollectionReleasedOnly` configuration variable is set to *true*, the visibility of content items is based on the release state rather than the item version. In this case, when a new revision of an existing content item is checked into a folder, the new revision is only visible to the author. The new revision will not become visible to all other users with read access to that content item until it is converted, indexed, and released. This means that until the content item is released, nothing is displayed for non-authoring users. Also, if the release date of the of the new revision is set to a future date, the revised content item will not be visible to other users until that point in time.

6.1.10 Default Metadata Values

When a file is checked into the content server through a virtual folder, default metadata values are entered on the content check-in form automatically. Default metadata values are evaluated in the following order:

1. **Virtual folder default values:** When you check in a new content item from an Exploring page, any content default metadata values defined for that virtual folder are entered on the content check-in form. These values are defined on the Add/Edit Hierarchy Folder Configuration page.
2. **User default metadata values:** If any content metadata defaults are not defined for the virtual folder, the user's default metadata values are applied. These values are defined by each user for new content items on their Default Information Field Configuration page, and for revised content items on their Revision Information Field Configuration page.

User default metadata values are only applicable when creating new content items using WebDAV. They are not applicable when using the Content Server web interface.

3. **System default metadata values:** The system default values are applied to any fields that are not defined by the virtual folder or the user's default metadata. These values are defined by the system administrator.

System default metadata values are only applicable when creating new content items using WebDAV. They are not applicable when using the Content Server web interface.

4. **None:** A metadata field can be blank as long as it is not a required field. If a required field is left blank, an error will occur and the content item will not be checked in.

6.1.11 Local Folders

The *local folders* function enables you to map a contribution folder structure to a local file system. Changes to the folder, its subfolders, and content items in the content server are reflected in the local directory.

One possible use for this function is to manage a website in the content server but then replicate its structure to a local drive so that hyperlinks are not broken. Because individual files are stored in the content server according to security groups and content types, hyperlinks between web pages would be broken if users attempted to navigate directly from the content items. Also, users would be required to log in and have the appropriate permissions to view each web page.

The following scenario describes how this function could be used to manage a website:

1. A web designer creates a website that contains several web pages with internal hyperlinking in a multi-level directory structure.
2. Through a WebDAV client, the designer copies the entire website structure to a contribution folder called *WebSite*.
3. On the content server's Local Folders Page, the *WebSite* folder is mapped to a directory on a shared drive, Z:\Intranet.
4. The \Intranet directory is set up as a web server virtual directory.
5. Users can access the website from the Z:\Intranet directory without logging in to the content server. Web pages can be updated in the content server, and they will be replicated to the local directory automatically.

Note the following considerations with regard to local folders:

- Content server security does not apply to folders or content items in the local directory.
- Only content items with a status of "Released" will appear in the local directory. Items that fail conversion, are still being indexed, are in a workflow, or have a future release date will not be available in the local directory.
- Only the latest revision of a content item will be available in the local directory.
- Modifying directories or files directly in the local file system can cause problems with the local folder mapping. All changes should be made through the content server Folders interface.
- If you want only users who belong to a specific security group to access specific files, you can point local directories to /weblayout secured directories.

6.1.12 Folder Archiving

Folders structure and content cannot be archived from one content server to another using the Archiver application. However, you can export and import the folder hierarchy structure directly from the Folders administration interface. You can archive content items separately using Archiver.

Please note the following with regard to folder archiving:

- Content items must be exported and imported separately using Archiver.
- When you export the folder hierarchy, the entire structure is exported; you cannot specify a particular folder.
- The folder hierarchy is exported to a text file that is in HDA format, which can be read by the content server.

Caution: When you import a folder archive file, all content items are removed from the content server and replaced by the imported folder hierarchy.

6.1.13 Folder Searching

If the Folders `CollectionSearchRecursiveContent` configuration parameter is set to true, then when users click **Search** on the Content Server interface, a Browse button and field will be displayed in the Results Options section of the Search page. The Browse button can be used to find and select a folder, including its subfolders, to be searched.

6.1.14 URL-Mapped Folders

To map a URL to a folder, select **Administration** then **Folder Configuration** from the Main menu. Select the **Web Url Mapped Folders** option. Select a folder and URL for it from the provided list. For more details about mapping Web URLs, see "Mapping URLs with `WebUrlMapPlugin`" in the *Oracle Fusion Middleware System Administrator's Guide for Content Server*.

6.2 About WebDAV

This section covers the following topics:

- ["About WebDAV"](#) on page 6-8
- ["What is WebDAV?"](#) on page 6-9
- ["WebDAV Clients"](#) on page 6-9
- ["WebDAV Architecture"](#) on page 6-10
- ["Security"](#) on page 6-10

6.2.1 About WebDAV

WebDAV (Web-Based Distributed Authoring and Versioning) is automatically installed with Content Server and when enabled, it provides a way to remotely author and manage your Oracle content using clients that support the WebDAV protocol. For example, you can use Windows Explorer or Microsoft Office products to check in, check out, and modify content in the Oracle repository rather than using Oracle's web browser interface. WebDAV can be used with Content Server.

In Content Server, the WebDAV interface is based on the hierarchical Folders interface. See "[About Folders](#)" on page 6-1 for more information.

Folders and WebDAV setup and administration are closely interrelated. The information in this document applies to both products, unless stated otherwise.

6.2.2 What is WebDAV?

WebDAV is an extension to the HTTP/1.1 protocol that allows clients to perform remote web content authoring operations. The WebDAV protocol is specified by RFC 2518.0. See the WebDAV Resources Page at <http://www.webdav.org> for more information.

WebDAV provides support for the following authoring and versioning functions:

- Version management
- Locking for overwrite protection
- Web page properties
- Collections of Web resources
- Name space management (copy/move pages on a web server)
- Access control

When WebDAV is used with a content management system such as Content Server, the WebDAV client provides as an alternate user interface to the native files in the content repository. The same versioning and security controls apply, whether an author uses the Oracle web browser interface or a WebDAV client.

In Content Server, the WebDAV interface is based on the hierarchical folder interface provided by the Folders component.

Important: WebDAV does not support the use of non-ASCII characters in content server user names.

6.2.3 WebDAV Clients

A WebDAV client is an application that can send requests and receive responses using the WebDAV protocol. Content Server currently supports the following WebDAV clients:

- Microsoft Windows Explorer
- Microsoft Word 2000, 2002 (XP), 2003, and 2007
- Microsoft Excel 2000, 2002 (XP), 2003, and 2007
- Microsoft PowerPoint 2000, 2002 (XP), 2003, and 2007

You can use WebDAV virtual folders in Windows Explorer to manage files that were created in a non-WebDAV client, but you cannot use the native application to check content in to and out of the content server repository.

This guide uses the term *WebDAV clients*, which are applications that can send requests and receive responses using the WebDAV protocol, such as Microsoft Windows Explorer or Microsoft Office programs. This is not the same as Oracle WebDAV Client, which is a separate Oracle product that enhances the WebDAV interface to the content server.

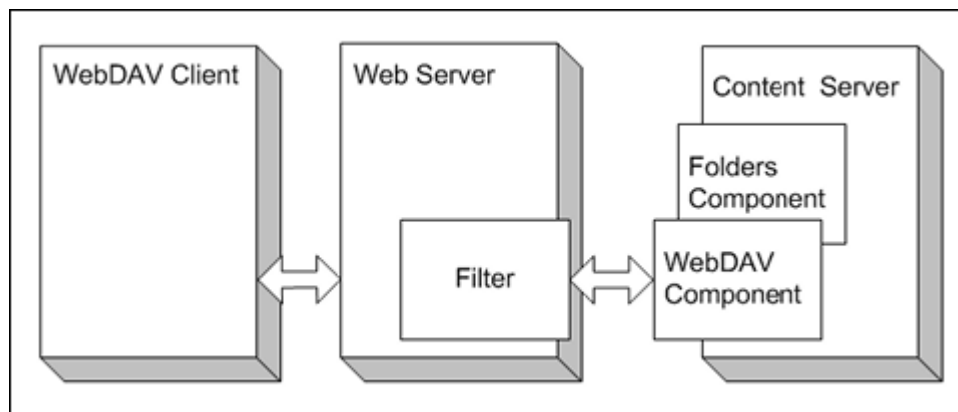
Oracle also offers the Desktop Integration Suite, which can enhance your WebDAV client environment by offering integrations into Windows Explorer, Microsoft Outlook, Lotus Notes, and other applications.

6.2.4 WebDAV Architecture

WebDAV support is implemented in the content server through a component, which handles WebDAV requests directly. A WebDAV request to the content server follows the following process (as illustrated in [Figure 6-2](#):

1. The WebDAV client makes a request to the content server.
2. The message is processed by the web server through a custom filter.
3. On the content server, the WebDAV component performs the following functions:
 - It recognizes the client request as WebDAV.
 - It maps the client request to the appropriate WebDAV service call on the content server.
 - It converts the client request from a WebDAV request to the appropriate content server request.
 - It connects to the core content server and executes the content server request.
4. The WebDAV component converts the content server response into a WebDAV response and returns it to the WebDAV client.

Figure 6-2 WebDAV Process



Important: WebDAV uses several non-standard HTTP methods, including PROPFIND, PROPPATCH, MKCOL, DELETE, COPY, MOVE, LOCK, and UNLOCK. Many third-party applications—such as firewalls, proxy servers, load balancers, and single sign-on applications—do not allow these methods by default. If your network includes any of these applications, you might need to reconfigure them to allow the WebDAV methods.

6.2.5 Security

The following security features are included in WebDAV functionality:

- [Access](#)

- [Login Cookie](#)
- [Windows Explorer](#)
- [Session Timeout](#)

6.2.5.1 Access

The user logins and security controls in the Folders component and Content Server also apply to content that is managed using WebDAV clients. For example, if you have Read permission for a content item, you will be able to view the file, but you will not be able to check in a new revision to the file.

6.2.5.2 Login Cookie

When a user logs in to the content server through a WebDAV application, the WebDAV component sets a cookie in the client. The cookie remains set as long as a WebDAV request is made within the time specified by the `WebDAVMaxInactiveInterval` parameter in the `IntradocDir/components/CoreWebdav/webdav_environment.cfg` configuration file. The default is 3600 seconds, or one hour. The cookie will remain set even if the WebDAV client application is closed. If the cookie expires, the user will need to log in to the content server again to perform WebDAV transactions through Microsoft Word, Excel, and PowerPoint.

The cookie includes a cryptographic key that prevents unauthorized users from generating counterfeit cookies. The `WebDAVSecretKey` parameter in the `webdav_environment.cfg` configuration file is used to generate the key.

Tip: To prevent WebDAV login cookies from being used on other content servers, we recommend that you change the `WebDAVSecretKey` setting to a new, unique value for each content server instance that is accessed through WebDAV.

6.2.5.3 Windows Explorer

If a user logs in to the content server through Windows Explorer, the client retains the user login authentication within the shell. Even if the login cookie expires, Windows Explorer will send the username and password to the content server automatically, so the user will not be prompted to log in. The only way to clear this is for the user to log out of Windows.

6.2.5.4 Session Timeout

If a WebDAV client does not specify a session timeout value, the default timeout specified by the `WebDAVDefaultTimeout` setting in the `webdav_environment.cfg` configuration file is used. If a file remains locked (checked out) for this amount of time, an "Undo Checkout" is applied to any checked out content.

6.3 Administering Folders

This section covers the following topics:

- ["Configuring Folders"](#) on page 6-12
- ["Working With Local Folders"](#) on page 6-16
- ["Archiving Folders"](#) on page 6-17
- ["Optimizing System Performance"](#) on page 6-19

6.3.1 Configuring Folders

This section covers the following topics:

- ["Setting Folder and File Limits"](#) on page 6-12
- ["Disabling System Folders"](#) on page 6-13
- ["Enabling System Folders"](#) on page 6-13
- ["Disabling the Trash Bin"](#) on page 6-13
- ["Defining System Default Metadata"](#) on page 6-14
- ["Configuring Metadata Propagation"](#) on page 6-14
- ["Preventing Folder Static Inheritance for Specific Metadata Fields"](#) on page 6-14
- ["Hiding Metadata Fields Globally Except for Specific Folders"](#) on page 6-15

6.3.1.1 Setting Folder and File Limits

If the number of folders and/or content items in a virtual folder is too high, this may affect content server performance. When you browse through folders, each item in a folder is processed by the server, the network, and the client browser. Each item takes a bit of time and resources at each of these steps. The amount of time is dependent on many factors. A fair rule of thumb is that each item will add a few milliseconds to browsing response time and a few kilobytes to the size of the page being displayed in the browser. Please note that the number of items in a folder only affects browsing, not searching.

High numbers of folders and/or content items in a virtual folder also affect the user experience. Users may have a harder time finding things in folders that have a large number of items in them, since they need to browse through a very large list.

It is recommended that you limit the number of folders and content items per virtual folder. The maximum number for both folders and content items allowed per folder is 1,000.

To improve performance when browsing through folders, you can use set the `CollectionContentSecurity` and `CollectionFolderSecurity` parameters, which reduce security, but speed up browsing.

Note that the more folders you use, the more RAM is required by the folder cache. Therefore, avoid setting up large numbers of unused folders. If you must set up a large number of folders, you should increase the memory for Content Server. To allocate more memory, you should set the `-Xmx JAVA_OPTIONS` parameter to a high enough value to accommodate the memory requirements and avoid getting an error.

The maximum number of folders and content items in a virtual folder are initially set during the Folders/WebDAV software installation, but it can be modified afterwards:

1. Log in to the content server as an administrator.
2. Open the **Administration** tray.
3. Click the **Folder Configuration** link.

The [Virtual Folder Administration Configuration Page](#) is displayed.

4. In the **Maximum Folders Per Virtual Folder** field, enter the maximum number of virtual folders allowed.

If a user attempts to define more than this number of virtual folders, an error message is displayed.

5. In the **Maximum Content Per Virtual Folder** field, enter the maximum number of files allowed in each virtual folder.
If a user attempts to check in more than this number of content items, an error message is displayed.
6. Click **Update**.

6.3.1.2 Disabling System Folders

Use the following procedure to disable a system-level virtual folder:

1. Log into the content server as an administrator.
2. Open the **Administration** tray.
3. Expand the **Folder Configuration** link.
4. Click the **System Folder Configuration** link.
The [System Folder Configuration Page](#) is displayed.
5. Click the green icon next to the folder you want to disable.
The folder is disabled. Users will not be able to see the disabled folder.

6.3.1.3 Enabling System Folders

Use the following procedure to enable a system-level hierarchical folder that has been disabled:

1. Log into the content server as an administrator.
2. Open the **Administration** tray.
3. Expand the **Folder Configuration** link.
4. Click the **System Folder Configuration** link.
The [System Folder Configuration Page](#) is displayed.
5. Click the gray icon next to the folder you want to enable.
The folder is enabled and the folder Exploring page for the folder is displayed.
Users will be able to see the enabled folder.

6.3.1.4 Disabling the Trash Bin

If you chose to enable the Trash Bin feature during the Folders component installation, a Trash Bin is created, which will contain any content deleted from within Content Server folders. To disable the Trash Bin after the initial Folders setup, complete the following steps:

1. Log into the content server as an administrator.
2. Open the **Administration** tray.
3. Expand the **Folder Configuration** link.
4. Click the **System Folder Configuration** link.
5. Click on the green dot next to Trash. This will disable the Trash Bin.

From now on, any content deleted from Oracle folders will be permanently deleted rather than being moved to the Trash Bin. **This means that content, once deleted, can no longer be restored!**

Note: Disabling the Trash Bin may be particularly useful if you are using Site Studio. See "[Deleting Content From Contribution Folders for Site Studio Website](#)" on page 6-24 for further details.

6.3.1.5 Defining System Default Metadata

Use this procedure to define the system default metadata. These metadata values are applied only on initial check-in; these settings do not affect revisions to existing content.

These defaults will be applied to any content checked in through a virtual folder *only* if a value is not defined for the folder or by the user.

Users should still set their own default metadata to ensure that content items do not all have the same metadata.

1. Log in to the content server as an administrator.
2. Open the **Administration** tray.
3. Expand the **Folder Configuration** link.
4. Click the **System Default Information Field Configuration** link.
The [System Default Information Field Configuration Page](#) is displayed.
5. Specify the default values to be applied to content upon check-in. Idoc Script can be used in any information field.
6. Click **Update**.

6.3.1.6 Configuring Metadata Propagation

Use the following procedure to specify which metadata values will propagate to subfolders and content items when a contributor launches the [Metadata Propagation](#) function:

1. Log in to the content server as an administrator.
2. Open the **Administration** tray.
3. Expand the **Folder Configuration** link.
4. Click the **Information Field Inherit Configuration** link.
The [Information Field Inherit Configuration Page](#) is displayed.
5. Select check boxes for the metadata fields to be propagated.
6. Click **Update**.

When a contributor clicks the Propagate button on a Hierarchical Folder Information page, only the selected metadata values will be propagated.

You can propagate the "inhibit" setting itself by selecting the check box for the Inhibit Metadata Update field on the Information Field Inherit Configuration page. However, the "inhibit" setting will only propagate from *false* to *true* or *blank*, and not from *true* or *blank* to *false*. This is because any folders and content items that are already set to *true* or *blank* will not be included in the propagation process.

6.3.1.7 Preventing Folder Static Inheritance for Specific Metadata Fields

Oracle Folders uses static inheritance. When you create a new folder or check in new content into a folder, the metadata from the parent folder will automatically populate

the fields for the new folder or the new content item. This allows the folder to initially "inherit" metadata, but allows you to make changes to the new folder. Subsequent changes to a parent folder's metadata do not affect the metadata for existing subfolders or content checked into a folder.

There are cases where you do not want items checked into a folder to inherit the parent folder's metadata values. For example, you might want to create a folder with the metadata field of `ReadOnly` set to a value of "true". Setting this value to "true" on the folder prevents renaming, moving, or deleting the folder; however, content can still be checked into the folder. If the content checked into the folder inherits the folder's metadata value of "true" for the `ReadOnly` field, that means that the content cannot be deleted, even by its author. You may want to have a folder set to `ReadOnly`, but you may want any content checked into the folder to not inherit the value of "true" for `ReadOnly` so that deletions are allowed.

You can change the value of the `ReadOnly` field to "false" for content checked into the folder on the checkin page through the browser interface, but if you check in content through WebDAV, there is no way to change the value of this field at check-in time.

In order to prevent the `ReadOnly` field from inheriting its value from the parent folder, complete the following steps (this can be used for any metadata field; the `ReadOnly` field is only used as an example):

1. Locate the `[Install_Dir]/custom/Folders/resources` directory.
2. Copy the existing `folders_forcemeta_resource.hda` file to another name as backup.
3. Open the `folders_forcemeta_resource.hda` file in a text editor.
4. Edit the file as follows. The `ResultSet` will look like the following:

```
@ResultSet METADATA_OVERRIDE
2
name
value
xReadOnly
0
@end
```

5. Save the file.
6. Restart the content server.

6.3.1.8 Hiding Metadata Fields Globally Except for Specific Folders

Use the following procedure to hide one or more metadata fields globally for all folders and for new check-ins, but allow those metadata fields to be visible for checking in content using specific WebDAV contribution folders.

1. Log in to the content server as an administrator.
2. Open the **Administration** tray.
3. Select the **Admin Applets** link.
4. Select the **Configuration Manager** link.
5. Click the **Rules** tab.
6. Click **Add** to add a rule, then enter information for the rule name and description.
7. In the General tab, select the **is Global rule with Priority** and **Use rule activation condition** check boxes.
 - a. Select **Edit** next to the **User rule activation condition** check box.

- b. Click **Add** to add a condition.
 - c. Make sure the condition is highlighted and select the **Clause** tab.
 - d. In the **Field** menu, select **Folder**.
 - e. In the **Operator** menu, select **Not Equals**.
 - f. In the **Value** menu, enter the xcollectionID of the folder where you want the metadata field to appear. The xcollectionID can be found in the database, in the Collections table under dCollectionID.
 - g. Click **Add** to add the clause to the Clause section.
 - h. Click **OK**.
8. Select the **Fields** tab from the main **Edit Rule** window.
 9. Click **Add**, and select the field you want to hide.
 10. Click **OK**.
The **Add Rule Field** window is displayed.
 11. In the **Type** menu of the **Add Rule Field** window, select **Hidden**.
 12. Click **OK**.
 13. In the main **Edit Rule** window, click **OK**.
 14. Test the configuration by adding content to a non-specified folder; The field should be hidden. Try adding content to the folder specified in the rule that you created; the desired field should be visible. If more than one folder is needed to display the desired fields, more conditions are needed within the clause of the same rule.

6.3.2 Working With Local Folders

This section covers the following topics:

- ["Specifying Local Folders"](#) on page 6-16
- ["Rebuilding Local Folders"](#) on page 6-17
- ["Removing Local Folders"](#) on page 6-17

See ["Local Folders"](#) on page 6-7 for details about local folders.

6.3.2.1 Specifying Local Folders

Use the following procedure to map a contribution folder structure to a local file system:

1. Log in to the content server as an administrator.
2. Open the **Administration** tray.
3. Expand the **Folder Configuration** link.
4. Click the **Local Folders** link.
The [Local Folders Page](#) is displayed.
5. Click **Browse**.
The Browsing dialog is displayed.
6. Click the folder to be mapped to the file system. (You may need to navigate to a higher-level folder to display its subfolders.) The target folder is the open folder.

7. Click **OK**.

The target folder is entered in the Folder field.

8. Enter a directory name in the Local Directory field.

For example, *c:/my_website*.

9. Click **Add**.

If necessary, the directory is created on the file system, and the specified folder structure is replicated to the specified directory.

6.3.2.2 Rebuilding Local Folders

Use the following procedure to rebuild the directory structure for a folder that is mapped to a local file system:

1. Log in to the content server as an administrator.

2. Open the **Administration** tray.

3. Expand the **Folder Configuration** link.

4. Click the **Local Folders** link.

The [Local Folders Page](#) is displayed.

5. Click **Rebuild** for the folder/directory mapping you want to rebuild.

The directory (and all subdirectories and files) is deleted from the local file system, and the folder structure is re-copied to the directory.

6.3.2.3 Removing Local Folders

Use the following procedure to delete a local folder mapping:

1. Log in to the content server as an administrator.

2. Open the **Administration** tray.

3. Expand the **Folder Configuration** link.

4. Click the **Local Folders** link.

The [Local Folders Page](#) is displayed.

5. Click **Remove** for the folder/directory mapping you want to delete.

The directory (and all subdirectories and files) is deleted from the local file system, and the mapping is removed from the Local Folders page. A mapped virtual folder cannot be deleted until the local folder mapping is removed.

6.3.3 Archiving Folders

This section covers the following topics:

- ["Exporting an Archive"](#) on page 6-17
- ["Importing an Archive"](#) on page 6-18

See ["Folder Archiving"](#) on page 6-8 for more details on archiving folders.

6.3.3.1 Exporting an Archive

Depending on the size of the folder hierarchy that is being exported as an archive file, the default heap size value for the JVM may not be adequate. If memory errors are issued during the export procedure, the heap size may need to be increased.

Use the following procedure to export the folder hierarchy as an archive file:

1. Log in to the content server as an administrator.
2. Open the **Administration** tray.
3. Click the **Folder Configuration** link.
The [Virtual Folder Administration Configuration Page](#) is displayed.
4. Click **Export Archive**.
A File Download window is displayed.
5. Click **Save**.
A Save As window is displayed.
6. Navigate to the directory where you want to save the folder archive file.
7. Specify a new file name so that you can easily identify the archive file (for example, *041127_CollectionArchive*).

Note: In Windows, if you leave the file type as **Text Document**, a .txt extension will be appended to the file name (for example, *CollectionArchive.hda.txt*). To save the file with just the .hda extension, select the **All Files** file type.

8. Click **Save**.
The folder hierarchy is exported to the specified file.

6.3.3.2 Importing an Archive

Use the following procedure to import an archived folder structure:

Caution: This procedure removes all content items in the current folders and replaces them with the imported folder hierarchy. Typically, you should perform this procedure only on a content server that has no content items in the repository.

1. Log in to the content server as an administrator.
2. Open the **Administration** tray.
3. Click the **Folder Configuration** link.
The [Virtual Folder Administration Configuration Page](#) is displayed.
4. Click **Browse** and navigate to the archive file you want to import.
5. Click **Open**.
The path and file name appear in the field.
6. Click **Import Archive**.
A confirmation prompt is displayed.
7. Click **OK**.
The archived folder is imported and recreated.

6.3.4 Optimizing System Performance

Folders performance depends on many different factors. This section provides some guidelines and configuration parameters that can improve content server performance with Folders and WebDAV enabled:

- **Limit the number of virtual folders, especially unused ones.** The more folders you use, the more RAM is required by the folder cache. Therefore, avoid setting up large numbers of folders, especially unused ones. If you must set up a large number of folders, you should increase the memory available to Content Server. To allocate more memory, you should set the `-Xmx JAVA_OPTIONS` parameter to a high enough value to accommodate the memory requirements and avoid getting errors.
- **Limit the number of folders and content items in virtual folders.** If the number of folders and/or content items in a virtual folder is too high, this may affect content server performance. When you browse through folders, each item in a folder is processed by the server, the network, and the client browser. Each item takes a bit of time and resources at each of these steps. The amount of time is dependent on many factors. A fair rule of thumb is that each item will add a few milliseconds to browsing response time and a few kilobytes to the size of the page being displayed in the browser. Please note that the number of items in a folder only affects browsing, not searching.

High numbers of folders and/or content items in a virtual folder also affect the user experience. Users may have a harder time finding things in folders that have a large number of items in them, since they need to browse through a very large list.

It is therefore recommended that you limit the number of folders and content items per virtual folder. The recommended maximum number for both folders and content items per folder is 1,000. You are prompted to specify these limits during the Folders/WebDAV software installation, but you can also modify them afterwards (see "[Setting Folder and File Limits](#)" on page 6-12 for details).

- **Perform regular database maintenance.** When there are large numbers of content items and folders in a system, Folders performance is strongly affected by the RDBMS performance. It is helpful to perform periodic (say, monthly) maintenance on the database to make sure there is enough RAM, the database indexes are optimized, and the database is not too fragmented.
- **Relax security to allow users without the appropriate access privileges to see (but not access!) secure content or folders.** The configuration variables `CollectionContentSecurity` and `CollectionFolderSecurity` control whether users can see secure content or folders on Exploring pages if they have no access privileges to the secure content or folders. If these variables are set to 'false' (which is not the default), then users with no access privileges to secure content items or folders will see them on Exploring pages. However, if they try to view the content, an "access-denied" error is displayed. This setting speeds up browsing performance as it simplifies the queries that need to be executed (less filtering), but it does allow users to see some information about secure content that they do not have access to.
- **Limit the number of items and folders that are displayed on Exploring pages.** You can set the configuration variable `CollectionDisplayResultSetSize` to control the maximum number of items that are displayed on Exploring pages. If the number of items in the result set exceeds the specified number, the results are truncated and spread out over multiple pages. Navigation links are then provided

to move between pages. This setting can be useful to prevent extremely large pages from being generated if there are many items to display.

- **Remove certain options from the Actions popup menu for items on Exploring pages.** There are a number of configuration variables that remove certain menu options from the Actions popup menu next to the Info icons on Exploring pages. They include:
 - `CollectionInfoEnabled:actionPopup` (Folder Information and Content Information options)
 - `CollectionLinkEnabled:actionPopup` (Create Shortcut option)
 - `CollectionMoveEnabled:actionPopup` (Move option),
 - `CollectionDeleteEnabled:actionPopup` (Delete option).

6.4 Administering WebDAV

This section covers the following topics:

- ["Virtual Folders"](#) on page 6-20
- ["Configuring WebDAV"](#) on page 6-21
- ["Multiple Concurrent Language Support"](#) on page 6-21
- ["WebDAV Troubleshooting"](#) on page 6-22

6.4.1 Virtual Folders

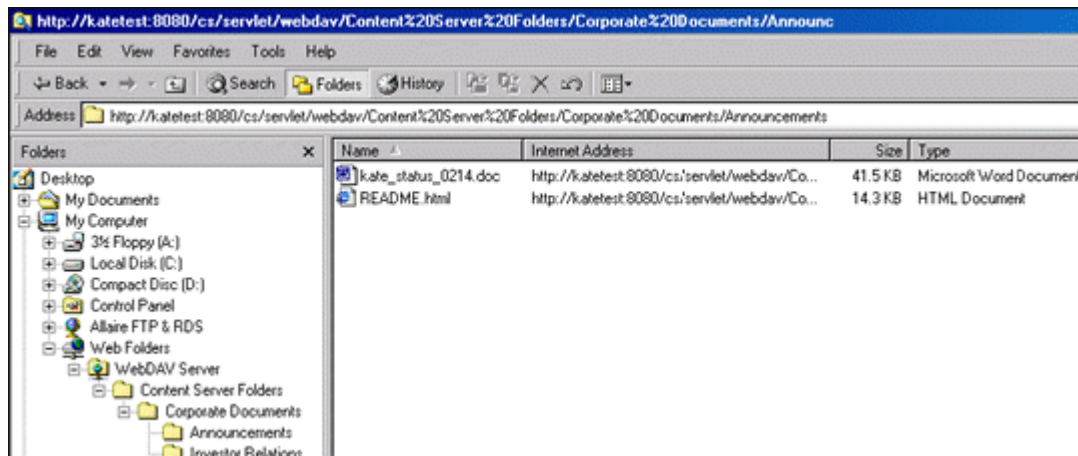
The WebDAV interface in Content Server is based on the hierarchical Folders interface. See ["About Folders"](#) on page 6-1 for more information. The WebDAV interface to a content server repository is set up as "virtual folders." Each folder contains the content items that have the same numerical "Folder" value, which is assigned automatically upon creation of the folder.

You can work with content items and virtual folders in much the same way you would work with files and folders in a file system. However, typical tasks you perform on files in a file system may have a different effect when you perform them on files in a WebDAV virtual folder. For example, opening a file from a WebDAV virtual folder also checks the content item out of the content server.

The user logins and security controls in Content Server and the Folders component also apply to content that is managed using WebDAV clients. For example, if you have Read permission for a content item, you will be able to view the file, but you will not be able to check in a revision to the file.

[Figure 6–3](#) shows how a typical set of WebDAV virtual folders would look in Windows Explorer:

Figure 6-3 WebDAV Virtual Folders in Windows Explorer



6.4.2 Configuring WebDAV

After you have installed WebDAV functionality on your content server, most of the WebDAV system administration tasks are performed from Folders component web pages. See "[Administering Folders](#)" on page 6-11 for further details.

6.4.2.1 Setting WebDAV Title Allocation

When users check new content into the content server through WebDAV, they cannot specify a title for the content item. The title is assigned automatically. Use the following procedure to specify how the title allocation is handled:

1. Open the file `IntradocDir/config/config.cfg` in a text editor.
2. Set the `WebDAVDoNotSetTitleToOriginalName` parameter in accordance with the desired title allocation behavior (see below):

```
WebDAVDoNotSetTitleToOriginalName=false|true
```

(The default is 'false'.)

3. If you changed the variable value, save the file and restart the content server.

The title of content items checked into the content server through WebDAV is now assigned as follows:

- If the `WebDAVDoNotSetTitleToOriginalName` parameter is set to 'false', the file name *without* the file extension is used as the title (for example, "monthly_report"). This is the naming convention regardless of whether a default title metadata value has been defined for the folder.
- If the `WebDAVDoNotSetTitleToOriginalName` parameter is set to 'true' and no default title metadata value has been defined for the folder, the file name *with* the file extension is used as the title (for example, "monthly_report.doc").
- If the `WebDAVDoNotSetTitleToOriginalName` parameter is set to 'true' and a default title metadata value has been defined for the folder, the defined name is used as the title (for example, "Monthly Report").

6.4.3 Multiple Concurrent Language Support

This section describes the requirements for those who wish to have multiple concurrent language support (for example, both English and Japanese).

To support multiple concurrent languages, certain WebDAV properties (metadata fields) must not contain non-ASCII characters. If non-ASCII characters are used, WebDAV clients may not be able to list folders containing these characters. For example, an English desktop would have trouble displaying Japanese characters.

The specific fields that must not use non-ASCII character sets vary by WebDAV client. This is a listing of the different clients and the metadata fields that must not contain non-ASCII characters:

Microsoft Web Folders

The following fields must not contain non-ASCII characters:

- the content name (dDocName)
- the original content name (dOriginalName)
- the content title (dDocTitle)
- the folder names

Desktop Integration Suite

The following fields must not contain non-ASCII characters:

- the content name (dDocName)
- the original content name (dOriginalName)
- the content title (dDocTitle)
- the content type (dDocType)
- the content item author (dDocAuthor)
- the security group (dSecurityGroup)
- the folder names

6.4.4 WebDAV Troubleshooting

This section describes problems that may occur when using WebDAV and offers possible solutions.

- [Zero-Byte Files](#)
- [No Connection to WebDAV Virtual Folder](#)
- [Double-Byte Characters in File Name](#)
- [Number Sign in Virtual Folder Name or File Name](#)
- [ExtranetLook Component Problem](#)
- [Content Item "Stuck" in Auto-Contribution Workflow Step](#)
- [Deleting Content From Contribution Folders for Site Studio Website](#)
- [WebDAV Drag and Drop Does not Work With Windows 2000](#)
- [Profile Rule for All WebDAV Requests](#)

Tip: See the content server logs for error messages and detailed information about the operation of the WebDAV component.

6.4.4.1 Zero-Byte Files

When using an Office 2000 application to open a document that resides on a WebDAV server, the application displays the content as empty (0 bytes).

6.4.4.1.1 Cause This problem may be caused by a combination of the temporary Internet files settings in Microsoft Internet Explorer. The WebDAV file is still present in the content server, but does not open properly on certain client machines with particular settings.

6.4.4.1.2 Solution

1. In Internet Explorer, select **Tools** and then **Internet Options**.
2. On the General tab, click **Settings**.
3. Under "Check for newer versions of stored pages", select **Every visit to the page**.
4. Under "Temporary Internet files folder", consider increasing the amount of disk space. (The lower the amount, the sooner the empty file problem seems to occur.)
5. Click **OK** twice to save the settings and close the Internet Options screen.

6.4.4.2 No Connection to WebDAV Virtual Folder

A client machine will not connect to WebDAV virtual folders.

6.4.4.2.1 Cause Internet Explorer is configured to use a proxy server. In Internet Explorer, the "Use a Proxy Server for your LAN" check box under **Tools, Internet Options, Connections, LAN Settings** is selected.

6.4.4.2.2 Solution Do one of the following:

- Configure the client machine to not use the proxy server instance for your HTTP server/WebDAV server. To do this in Internet Explorer, select **Tools, Internet Options, Connections, LAN Settings, Advanced, Exceptions**, and specify the IP address/host name of the WebDAV server.
- Modify the proxy server configuration to allow pass-through for WebDAV methods (WebDAV-specific HTTP/1.1 extensions) along with standard GET, POST, and other HTTP/1.1 methods. Refer to your proxy server documentation for more information.
- Windows Vista requires Service Pack 2 for WebDAV to work properly.

6.4.4.3 Double-Byte Characters in File Name

A file with double-byte characters in the file name cannot be checked in.

6.4.4.3.1 Cause If the content server is running on a Western European operating system, the Microsoft WebDAV client may not be able to handle files with double-byte characters in the file name.

6.4.4.3.2 Solution Either eliminate all double-byte characters from the file name, or check in the file through the content server's web browser interface.

6.4.4.4 Number Sign in Virtual Folder Name or File Name

Using the number sign (#) in a virtual folder name generates errors and/or truncates the folder name prior to the number sign. Using the number sign (#) in file names generates errors.

6.4.4.4.1 Cause The the number sign (#) is an illegal WebDAV character.

6.4.4.4.2 Solution Eliminate the number sign (#) from the virtual folder name. Either eliminate the number sign from the file name, or check in the file through the content server's web browser interface.

6.4.4.5 ExtranetLook Component Problem

The ExtranetLook component no longer works after installation of the Folder component.

6.4.4.5.1 Cause The WebDAV component uses CookieLoginPlugin.dll for cookie-based login. The cookies eliminate additional login prompts when MS-Word opens a document using webdav. Typically, the component keeps the dll from doing forms-based logins on web page because most users do not want this. However, users that do want forms-based logins can get them by following the instructions below.

6.4.4.5.2 Solution An additional configuration change must be made to allow forms-based login with the WebDAV component. Specifically, if you want to use the WebDAV component along with the ExtranetLook component, you have to change *IntradocDir/config/config.cfg* file by setting `WebDAVDisableOtherFilterCookies=false` instead of true (the default).

6.4.4.6 Content Item "Stuck" in Auto-Contribution Workflow Step

I dragged and dropped a content item into a virtual folder, and the content item automatically entered a workflow (as expected). However, the content item seems "stuck" in the auto-contribution step of the workflow. The only way for me to approve the content item is to check it out and check it back in with the "Revision Finished Editing" option selected, so that the content item will move to the first step of the workflow.

6.4.4.6.1 Cause A change was made to the default workflow behavior when content items are contributed through the WebDAV interface. In Folders revision 91 and higher, a content item enters a workflow in the contribution step when contributed to a virtual folder rather than the first step in the workflow, which used to be the default. This was done to cater to Site Studio's preview modes, so that a content item did not advance into the workflow proper and it could be approved using the Site Studio interface. However, if you are not using Site Studio, this may not be the behavior you are looking for.

6.4.4.6.2 Solution Two Content Server configuration entries are available to address this issue and also to allow for some more functionality:

- `AutoContributorAdvancesOnUnlock`: Enabling this configuration entry makes the content advance immediately to the first workflow step as it did in versions of the Folders component prior to revision 91.
- `AutoContributorAllowsReview`: This configuration entry enables users to approve a content item in a contribution step of a workflow without having to perform a check-out/check-in sequence.

6.4.4.7 Deleting Content From Contribution Folders for Site Studio Website

When I delete documents from folders that I am using to contribute to my Site Studio website, those documents still show up in my tables of contents (dynamic lists) on the website.

6.4.4.7.1 Cause If you chose to enable the Trash Bin feature during the Folders component installation, a Trash Bin is created, which will contain any content deleted from within Content Server folders. This can have an undesirable side-effect when using Site Studio in that documents that are deleted from WebDAV folders will still show up in Site Studio dynamic lists (such as tables of content) and queries, as they are still present in the Trash Bin. You need to explicitly delete the documents from the Trash Bin to make them disappear from all dynamic lists and queries of your Site Studio website.

6.4.4.7.2 Solution To avoid having to delete the documents twice, [Disabling the Trash Bin](#) can be used. **Please note that after you disable the Trash Bin, the documents, once deleted, cannot be restored!**

6.4.4.8 WebDAV Drag and Drop Does not Work With Windows 2000

Attempting to drag and drop using any WebDAV client produces no file, or a file containing 0 bytes. Although the action does not successfully complete, no error message is displayed. A copy and paste of the file using the WebDAV client does work.

6.4.4.8.1 Cause The problem is a known issue on some versions of Windows 2000 with Office 2000 Service Release 1 or later which have been upgraded.

6.4.4.8.2 Solution The following solutions can be used to work around or resolve the drag and drop issue:

- You can use copy and paste to add content in situations where the drag and drop does not work.
- You can also upgrade your Windows dll files as outlined in the following Microsoft knowledgebase article at the following URL:
<http://support.microsoft.com/default.aspx?scid=kb;en-us;288440>

6.4.4.9 Profile Rule for All WebDAV Requests

How do I create a profile rule that affects all WebDAV requests?

6.4.4.9.1 Solution Check for the variable `IsWebdavRequest` in your profile rule. For example, you can use the following script for the `dOutDate` field to make sure it is set to 30 days in the future for all WebDAV checkins:

```
<$if IsWebdavRequest$>
<$dprDerivedValue=dateCurrent(30)$>
<$endif$>
```

6.4.4.10 Other Issues

- Some versions of Windows XP, Vista, and 7 will not connect to a WebDAV server running over HTTP and using HTTP Basic authentication. A registry entry must be set to fix this. See <http://support.microsoft.com/kb/841215> for details.
- When mapping a network drive in Windows 7, Windows remembers all failed attempts and never retries a connection after a single connection to a host has failed. This occurs even if you clear the browser cache in Internet Explorer and/or modify the WebDav URL. To work around this issue you must restart Windows 7 before you try to connect to that host again via WebDAV.

Managing Content Folios

This chapter contains the following topics:

- ["Overview of Content Folios"](#) on page 7-1
- ["Content Folios Configuration"](#) on page 7-3

7.1 Overview of Content 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 Content Server 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 Content Server 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 content server 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.

This section contains the following topics:

- ["Content Folios Features"](#) on page 7-1
- ["Changes to Content Server During Installation"](#) on page 7-2

7.1.1 Content Folios Features

Content Folios adds the following functionality to Content Server.

- Organize content into a simple, flat folio structure
- Organize content into an advanced hierarchical folio structure
- Create pre-structured templates for selection when creating folios
- Modify folio structure dynamically
- Lock folio structure to prevent it from being modified dynamically
- Lock content folios to prevent additions
- Unlock folios to allow additions
- Modify folios without tracking revisions in Content Server
- Take a snapshot of a folio in order to track revisions in Content Server
- Download renditions of folio content in .zip, .ppt, .pdf, or XML format
- Create multiple unstructured content baskets for use in collecting content items

7.1.2 Changes to Content Server During Installation

Several changes are made to Content Server during installation of Content Folios:

- [Additional Metadata Fields](#)
- [Additional Views](#)
- [Additional Relations](#)
- [Additional Tables](#)

7.1.2.1 Additional Metadata Fields

The following metadata fields are added to Content Server to record the current state of a folio or template:

- CpdIsTemplateEnabled
- CpdIsLocked

7.1.2.2 Additional Views

The following views are added to Content Server and are used on the Folio Edit page to communicate Content Folios tables to JavaScript.

- NodePropertyView
- LinkPropertyView
- NodeRemovalTypeView
- CpdTreeDisplayFunctionMapView
- CpdPopupEditActionsView
- ItemPropertyView
- PneDocProfileView

7.1.2.3 Additional Relations

The following relation is used by PneDocProfileView:

- GenericUserProfileRelation

7.1.2.4 Additional Tables

The following tables record the links that folios and content baskets have against content in the system

- CpdLinks
- CpdArchiveLinks
- CpdBasketLinks
- CpdEditHistory

Note: Changes made to Content Server during installation of Content Server remain even if Folios is disabled or removed.

7.2 Content Folios Configuration

Content Folios provides the means to organize content into a hierarchical structure. The structure of a folio can be modified dynamically when creating or editing it, or the structure can be static based on a pre-defined template selected when the folio is created, or lastly it can be a combination of the two.

This section covers the following topics:

- ["Creating and Editing Folio Templates"](#) on page 7-3
- ["Adding Custom Viewers and Renderers"](#) on page 7-4

7.2.1 Creating and Editing Folio Templates

Folio templates offer the user a predefined organization of nodes, subnodes, slots, and any required content items when creating a folio. A folio template can be selected by a user at the time they create an advanced folio. Folio templates are XML files checked into and managed by Content Server, and can be edited and revised at any time. Revisions to a template are not applied retroactively to existing folios based on that template, but only apply to new folios created based on the template's new revision.

To create folio templates, you must have administration rights to Content Server. Templates are created using the [Create/Edit Folio Template Page](#), accessed by clicking the Create Folio Template link in the Folio Administration folder on under the Content Server Administration tray.

7.2.1.1 Creating a Folio Template

To create a folio template, do these steps:

1. Open the Folio Administration folder on the Content Server Administration tray and click **Create Folio Template**. The [Create/Edit Folio Template Page](#) is displayed.
2. Select **Save template** from the page **Actions** menu. The Set Folio Template Profile page is displayed.

Important: You must save the folio template before navigating away from it. Saving the folio checks the folio into Content Server. If you do not save the folio, it and any changes to it will be lost.

3. Choose the profile to be used with the folio template, if any, and click **Next**. The Folio Template Check In page is displayed.
4. Enter the required information and click **Check in**. The Folio Template Check In Confirmation page is displayed. It is a good idea to choose a descriptive title for the template, as it is the title that is displayed in the Folio Template choice list on the Pick Folio Type page.
5. Select how to proceed and click **Finish**. Options are:
 - Continue editing the folio template to add structure or content. The [Create/Edit Folio Template Page](#) is displayed. Add structure and content to the template and set template properties.
 - View content information for the folio. The Content Server content information page for the folio is displayed.

7.2.2 Adding Custom Viewers and Renderers

Currently Content Server ships with a default viewer that mimics the structure of the Create/Edit Folios page, and the following rendition options:

- Zip
- PDF
- XML

Custom viewers and renderers can be developed, but at a minimum, require an understanding of the following:

- the structure of the folio XML
- the folio Idoc Script functions and their proper usage
- the Iterator/Renderer architecture
- the method for using a component to modify/add to the list of viewers and renderers

If you would like to have custom viewers and renderers added, contact Oracle Consulting at <http://www.oracle.com/consulting/index.html>.

Managing Content Tracker

Content Tracker and Content Tracker Reports are optional components that are automatically installed with Content Server. They are separate modules but, when enabled, work together to provide information about system usage. The information provided enables you to determine which content items are most frequently accessed and what content is most valuable to users or specific groups. Understanding the consumption patterns of your organization's content is essential to successful content management. This enables you to provide more appropriate, user-centric information more effectively.

This section covers the following topics:

- ["Performance Optimization Functions"](#) on page 8-1
- ["About Content Tracker Components and Functions"](#) on page 8-3
- ["Operational Overview"](#) on page 8-7
- ["Data Tracking Functions"](#) on page 8-21
- ["Report Generation"](#) on page 8-56
- ["Service Call Configuration"](#) on page 8-75
- ["Configuration and Customization"](#) on page 8-84
- ["Troubleshooting"](#) on page 8-89

8.1 Performance Optimization Functions

The current version of Content Tracker incorporates several optimization functions to ensure that information tracking processes are performed as efficiently as possible. These functions are implemented using applicable installation preference variables. Combined, the default values for these variables configure Content Tracker to function as efficiently as possible for use in high volume production environments.

Note: By default, Content Tracker collects and records only content access event data. This excludes information gathering on non-content access events like searches as well as the collection and synthesis of user profile summaries. This configuration streamlines Content Tracker's functions and maximizes its overall performance.

However, during the Content Server installation process, you can optionally choose to enter alternate values for the various preference variables. If you prefer to initially accept the default values, you can manually change the values at a later time. When applicable, this is done by either editing the sct.cfg file (except for the preference variables) or using the update function in the Component Manager. See "[Changing the Variable Settings for the Performance Optimization Functions](#)" on page 8-42.

The performance optimization functions include:

- **Content Access Only:** This operating mode determines what types of information is collected. When enabled (the default), only content access events are recorded which excludes content searches and user profile information. As a result, Content Tracker populates only the SctAccessLog table (see "[Combined Output Table](#)" on page 8-12). The corresponding installation preference variable is SctTrackContentAccessOnly.

Note: By default, Content Tracker collects static URL access event details in event logs for the [Data Reduction](#) process and services are logged in real time. However, only services that have event types for content access are logged.

One exception is any service that causes an entry to be made in the DocHistory table will be tracked. This will happen regardless of whether the service, (for example, DELETE_REV) is defined in the Content Tracker services table (see "[Service Calls](#)" on page 8-26 and "[Service Call Configuration](#)" on page 8-75).

Note: The [Services Tab](#) is not displayed if Content Access Only mode is ON (the default).

Note: If the [Activity Snapshots](#) feature is enabled, Content Tracker will modify the metadata fields regardless of how the Content Access Only operating mode is set. This means that the [User Metadata](#) tables will be populated during data reduction.

Note: The user reports are only visible if the Content Access Only operating mode is disabled. See "[Report Generation](#)" on page 8-56.

- **Exclude Columns:** This is a list of columns that Content Tracker does not populate in the SctAccessLog table. By default, bulky and rarely used information is not

collected which reduces the size of the output table. The corresponding installation preference variable is `SctDoNotPopulateAccessLogColumns`.

- **Simplify User Agent:** When enabled (the default), this function minimizes the information that is stored in the `cs_userAgent` column of the `SctAccessLog` table. The corresponding installation preference variable is `SctSimplifyUserAgent`.
- **Do Not Archive:** When enabled (the default), this function ensures that the database tables contain the most current data and expired table rows are discarded rather than archived. The corresponding installation preference variable is `SctDoNotArchive`.

Note: This optimization function is applicable to all Content Tracker database tables (the `SctAccessLog` table as well as the user metadata tables). By default, only the `SctAccessLog` table is populated but expired rows are not archived. However, if both the Content Access Only and Do Not Archive functions are disabled, all tables will be populated and their expired data archived.

8.2 About Content Tracker Components and Functions

Content Tracker monitors activity on your Content Server instance, and records selected details of those activities. It then generates reports that may help you understand the ways in which your system is being used. This section includes a very brief overview about Content Tracker and Content Tracker Reports functionality. It provides a basic background about these components and is intended to help prepare you for the more detailed information provided in "[Operational Overview](#)" on page 8-7.

This section covers the following topics:

- "[Content Tracker Summary](#)" on page 8-3
- "[Content Tracker Reports Summary](#)" on page 8-4
- "[Data Recording Overview](#)" on page 8-4
- "[Data Reduction Overview](#)" on page 8-5
- "[Data Reporting Overview](#)" on page 8-5
- "[Content Tracker Terminology](#)" on page 8-5
- "[General Limitations](#)" on page 8-6
- "[General Considerations](#)" on page 8-7

8.2.1 Content Tracker Summary

Content Tracker monitors your system and records information about various activities. This information is collected from various sources, then merged and written to a set of tables in your Content Server database. You can customize Content Tracker to change or expand the types of information it collects.

Note: By default, Content Tracker collects and records only content access event data. This excludes information gathering on non-content access events like searches as well as the collection and synthesis of user profile summaries. However, during the Content Server installation process, the administrator can optionally choose to configure Content Tracker to collect all the information from the various categories. See "[Performance Optimization Functions](#)" on page 8-1 for more information.

Content Tracker can monitor activity based on:

- **Content item accesses:** Content Tracker gathers information about content item usage. The data is obtained from Web filter log files, the Content Server database, and other external applications such as portals and Web sites. Content item access data includes dates, times, content IDs and current metadata.
- **Content Server services:** Content Tracker can track all services that return content, as well as services that handle search requests. However, by default, Content Tracker logs only the services that have content access event types. And, with a simple configuration change, Content Tracker can monitor literally any Content Server service, even custom services.
- **User accesses:** Content Tracker can gather information about other non-content access events such as the collection and synthesis of user profile summaries. This data includes user names and user profile information.

8.2.2 Content Tracker Reports Summary

After Content Tracker extracts data and populates applicable database repository tables, the information is available for report generation. Content Tracker Reports enables you to:

- **Generate reports:** Content Tracker Reports queries the tables created by Content Tracker and generates summary reports of various kinds of activities and the usage history of particular content items. The reports help you analyze specific groups of content or users based on metadata, file extensions, or user profiles. You can use the pre-defined reports that are provided, customize them to suit your installation, or use a compatible third-party reporting package.
- **Optimize content management practices:** You can also use the reported data for content retention management. That is, depending on the access frequency of particular content items during specific time intervals, you may decide to archive or delete some of the items. Similarly, applications can use the data to provide portlets with the top content for particular types of users.

8.2.3 Data Recording Overview

Content Tracker records data from the following sources:

- **Web server filter:** When content is requested via a static URL, the web server filter records certain details of the request and saves the information in one or more event log files. Event log files are organized according to the date on which the information was collected. The event log files are eventually used as input by the Content Tracker data reduction process.
- **Service handler filter:** Content Tracker has a list of services that it monitors. By default, these include only services that return content. When one of these

services is called, details of the service are copied and saved in the SctAccessLog table. You can change which services are monitored, and which details are recorded.

- **Content Tracker logging service:** Content Tracker supports a general purpose logging service that is a single-service call that can be used to log an event. It can be called directly via a URL, as an action in a service script, or from IdocScript.
- **Content Server database tables:** When configured to collect and process user profile information, the Content Tracker data reduction process will query selected Content Server database tables. This is done primarily to obtain information about the names and accounts of users who were active during the reporting period.
- **Application API:** Content Tracker provides an interface by which other components and applications can be registered for tracking, and can have information about their activities recorded. For example, this interface allows cooperating applications, such as Site Studio, to log event information in real time.

Note: The Application API is included in the SctApplicationFilter.hda file. This interface is designed as a code to code call which does not involve a Content Server service. The Application API is not meant for general use. If you are building an application and are interested in using this interface, you should contact Consulting Services.

8.2.4 Data Reduction Overview

The data reduction process gathers and merges the data obtained from the data recording sources. Until this reduction process has finished, the data in the Content Tracker tables is incomplete. You will usually run the reduction once for each day's worth of data gathered. The reduction may be run manually, or may be scheduled to run automatically, usually during an off-peak period when the system load is light.

8.2.5 Data Reporting Overview

Content Tracker Reports provides a set of reports that answer commonly asked questions about Content Server activity and usage. For example, you can determine which managed objects have been accessed most frequently. Depending on how Content Tracker is configured, these reports can also indicate which searches are used most often, and which users have been most active.

These reports are available directly, via the [Content Tracker Report Generator Main Page](#), and indirectly as an action on the Content Information page. The available categories of pre-defined report options are contingent on whether or not Content Tracker is configured to collect only content access events or all types of tracking information. The reports, the underlying queries, and the output formatting are available for customization.

8.2.6 Content Tracker Terminology

You should be familiar with the following terminology when using Content Tracker and Content Tracker Reports:

- **Data collection:** Gathering content access information programmatically and writing the information to event log files.

- **Data reduction:** Processing the information from data collection and merging it into a database table.
- **Data Engine Control Center:** The applet interface that provides access to the user-controlled functions of the Data Engine. The Data Engine Control Center is used to enable, schedule, and monitor data collection. It is also used to collect and manage data about user activity and service calls.
- **Collection:** Tab used to enable data collection.
- **Reduction:** Tab used to stop and start data reduction (that is, merging data into database tables).
- **Schedule:** Tab used to enable automatic data reduction.
- **Snapshot:** Tab used to enable activity metrics. Also, the word snapshot is used to denote an information set that represents the world as it existed at a particular time in the past. It is historical information that is instantaneous in nature and specifies what user accessed a particular content item at a particular moment.
- **Services:** Tab used to add, configure, and edit Content Server service calls to be logged. It is also used to define the specific event details that are to be logged for a given service.
- **Service definitions:** The ResultSet structure in the service call configuration file (SctServiceFilter.hda) that contains entries to define each Content Server service call to be logged. The service definition ResultSet is named ServiceExtraInfo.
- **ServiceExtraInfo ResultSet:** See Service definitions.
- **Service entry:** The entry in the service definition ResultSet (ServiceExtraInfo) that defines a Content Server service call to be logged. The ServiceExtraInfo ResultSet contains one service entry for each service to be logged.
- **Field map:** A secondary ResultSet in the service call configuration file (SctServiceFilter.hda) that defines the service call data and the specific location where the data is to be logged.
- **Top Content Items:** Most frequently accessed content items in the system.
- **Content Dashboard:** An HTML page that provides overview information about the access of a specific content item.

8.2.7 General Limitations

Content Tracker is supported on most hardware and networked configurations. There are, however, certain hardware and software combinations that require special consideration. Some known limitations include:

- In some circumstances, exact access counts cannot be guaranteed for content that is requested through static URLs or by WebDAV. See "[Tracking Limitations with Static URLs and WebDAV](#)" on page 8-19.
- To successfully record access activity, the user's account must have write access to Content Tracker's data directory. Otherwise, some access requests will not be recorded in the event logs. See "[Tracking Limitations and Data Directory Protections](#)" on page 8-21.
- When the ExtranetLook component is enabled, there are some situations where user access requests are not recorded in Content Tracker's raw event logs. See "[Tracking Limitations with ExtranetLook Component](#)" on page 8-21.

- When either Oracle or DB2 is used as the Content Server database, metadata values are case sensitive. See "[Oracle and DB2 Case Sensitivity](#)" on page 8-57.
- When Access Control Lists (ACLs) are enabled on a Content Server instance, the Content Tracker Reports secure mode does not work. See "[Access Control Lists and Content Tracker Reports Secure Mode](#)" on page 8-57.
- When Oracle is used as the Content Server database, some additional, customized file configurations are necessary if you want to use aliases to display column names. See "[Custom Report Queries and Oracle](#)" on page 8-60.

8.2.8 General Considerations

The following general considerations are applicable for the current version of the Content Tracker and Content Tracker Reports components:

- **Hanging browser:**

If Content Server happens to terminate while the Data Engine Control Center is running, the browser can also hang. To easily resolve this issue, close the hung browser window.

- **Local time vs. GMT:**

A configuration parameter enables you to use local time instead of Greenwich Mean Time (GMT) to record user access times:

- **SctUseGMT=true** configures Content Tracker to use GMT.
- **SctUseGMT=false** configures Content Tracker to use local time. This is the default setting.

If you are performing a new installation of Content Tracker and use the default setting for SctUseGMT, user accesses will be recorded in local time. If you are upgrading from an earlier version of Content Tracker and use the default setting for SctUseGMT, there will be a one-time retreat (or advance, depending on your location) in access times. Also, to accommodate the biannual daylight savings time changes, there will be discontinuities in recorded user access times (contingent on whether you use local time and your location).

8.3 Operational Overview

Content Tracker captures information regarding the consumption patterns of content items. Activity information is collected daily and includes tracking content accessed from Content Server by end users directly or via external applications such as portals and Web sites. The information is gathered from Content Server Web filter log files, the Content Server database, and other external applications such as portals and Web sites.

Once the data is collected, Content Tracker combines, analyzes and synthesizes the event information and loads the summarized activity into database tables. After reduction, this data becomes available for reporting purposes. You can use the Content Tracker Report Generator main page to produce reports that identify content usage trends. This will help you understand how your system is being used resulting in more successful content management.

This section covers the following topics:

- "[Data Collection and Processing](#)" on page 8-8
- "[Data Collection](#)" on page 8-10

- ["Data Reduction"](#) on page 8-11
- ["Data Output"](#) on page 8-15
- ["Tracking Limitations"](#) on page 8-19

8.3.1 Data Collection and Processing

Depending on how Content Tracker is configured, it can collect event information such as dynamic and static content accesses and service calls. Several mechanisms are used to collect the data.

- **Service Handler Filter:** Examines Content Server service requests and writes certain details from them directly to the SctAccessLog table in real time. Only services listed in the SctServiceFilter.hda file are logged.
- **Web Server Filter:** Collects data values from static URLs and logs them in raw data files.
- **Content Tracker Logging Service:** Used to log event information generated by a suitably configured application.

This section covers the following topics:

- ["Standard Data Reduction Process"](#) on page 8-8
- ["Data Reduction Process with Activity Metrics"](#) on page 8-9

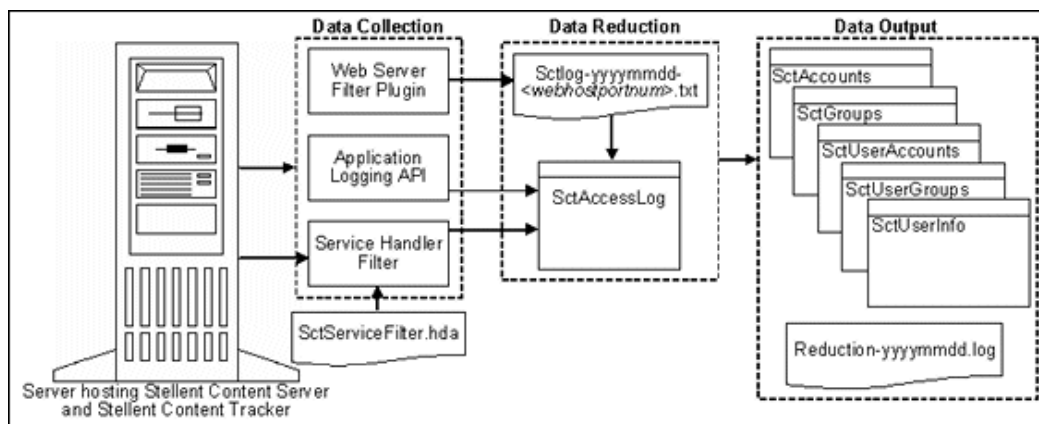
8.3.1.1 Standard Data Reduction Process

During the data reduction process, the static URL information is extracted from the raw data files (see ["Content Tracker Event Logs"](#) on page 8-11) and combined with the service information already stored in the SctAccessLog table (see ["Combined Output Table"](#) on page 8-12).

Note: By default, Content Tracker collects and records data only for the SctAccessLog table. Although the user data output tables exist, Content Tracker does not populate them. See ["Performance Optimization Functions"](#) on page 8-1.

Depending on how Content Tracker is configured, this reduction process can:

- Combine access information for static URL content access with service details.
- Summarize information about user accounts that were active during the reporting period. This information is rolled up and written to the Content Tracker's user metadata database tables. See ["Data Output"](#) on page 8-15 for details.



8.3.1.2 Data Reduction Process with Activity Metrics

Content Tracker provides the option to selectively generate search relevancy data and store it in custom metadata fields. The snapshot function enables you to choose which activity metrics to activate. The logged data provides content item usage information that indicates the popularity of content items.

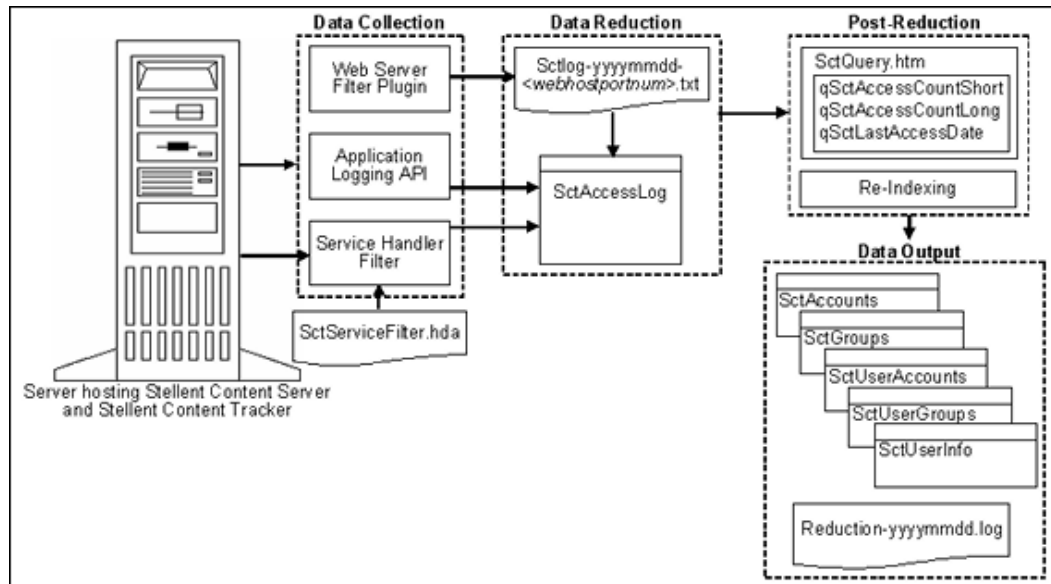
Note: By default, Content Tracker collects and records data only for the SctAccessLog table. Although the user data output tables exist, Content Tracker does not populate them unless the Snapshot function is activated. However, using the snapshot function will affect Content Tracker's performance. See "[Performance Optimization Functions](#)" on page 8-1 for more information.

If you activate the snapshot function and activity metrics, the values in the custom metadata fields are updated following the reduction processing phase. When users access content items, the values of the applicable search relevance metadata fields change accordingly. Then, during the subsequent post-reduction step, Content Tracker uses applicable SQL queries to determine which content items were accessed during the reporting period.

Content Tracker updates the applicable database table metadata fields with the new values and initiates a re-indexing cycle. However, only the content items whose access count metadata values have changed are re-indexed. For more information about the snapshot function, the user interface screen, and activating the activity metrics, see "[Snapshot Tab](#)" on page A-158. For more information about the activity metrics' SQL queries and how to customize them, see "[Activity Metrics SQL Queries](#)" on page 8-87.

The post-reduction processing step is necessary to:

- Process and tabulate the activity metrics for each affected content item and load the data into the assigned custom metadata fields.
- Initiate a re-indexing cycle on the content items with changed activity metrics values. This ensures that the data is part of the search index and, consequently, accessible for selecting and ordering search results.



8.3.2 Data Collection

Content Tracker data collection includes collecting information from static URL references along with Content Server service call events. Both types of data are recorded in a combined output table (SctAccessLog). However, service calls are inserted into the log in real time whereas the static URL information must first undergo the reduction process (either manual or scheduled).

This section covers the following topics:

- ["Service Handler Filter"](#) on page 8-10
- ["Web Server Filter"](#) on page 8-11
- ["Content Tracker Logging Service"](#) on page 8-11

8.3.2.1 Service Handler Filter

The Content Server service handler filter is the primary Content Tracker data collection mechanism. This filter makes it possible for Content Tracker to obtain information about dynamic content requests that come through the web server, and also about other types of Content Server activity, such as calls from applications. The service request details are obtained from the DataBinder that accompanies the service call, and the information is stored in the combined output table (SctAccessLog) in real time. For more information about the SctAccessLog table, see ["Combined Output Table"](#) on page 8-12.

There is a user-modifiable configuration file that is used to determine which Content Server service calls are logged. This file (SctServiceFilter.hda) uses a ResultSet structure that includes one service definition entry for each service to be logged. If you are using the extended service logging function, the SctServiceFilter.hda file also contains field maps that correspond to various service definition entries, see ["Services Tab"](#) on page A-161. For more detailed information about configuring service calls using the service handler filter, see ["Service Call Configuration"](#) on page 8-75.

The ResultSet included in the SctServiceFilter.hda file is named ServiceExtraInfo. This ResultSet contains one or more service entries that define the services to be logged. To support the extended service logging function, additional ResultSets are used. These are called field map ResultSets. Each service that will have additional data values

tracked must have a corresponding field map ResultSet in the SctServiceFilter.hda file. Field map ResultSets define the data fields, locations, and database destination columns for the related service.

8.3.2.2 Web Server Filter

Managed content that is retrieved via a static URL does not usually invoke a Content Server service. Therefore, the Content Tracker web server filter collects the access event details (static URL references) and records them in raw event logs (sctlog files). The information in these files requires an explicit reduction (either interactive or scheduled) before it is included in the combined output table (SctAccessLog) along with the service call data.

For more information about the sctlog files, see "[Content Tracker Event Logs](#)" on page 8-11. For more information about the SctAccessLog table, see "[Combined Output Table](#)" on page 8-12.

8.3.2.3 Content Tracker Logging Service

The Content Tracker logging service is a single-service call that may be called directly via a URL or as an action in a service script. It may also be called from IdocScript using the executeService() function. The calling application is responsible for setting any and all fields in the accompanying service DataBinder that need to be recorded, including the descriptive fields listed in the Content Tracker service filter configuration file (SctServiceFilter.hda). For more detailed information about configuring service calls using the Content Tracker logging service, see "[Service Call Configuration](#)" on page 8-75.

Note: There should be no duplication or conflicts between services logged via the service handler filter and those logged via the Content Tracker logging service. If a service is named in the Content Tracker service handler filter file then such services are automatically logged so there is no need for the Content Tracker logging service to do it. However, Content Tracker will make no attempt to prevent such duplication.

8.3.3 Data Reduction

During Content Tracker data reduction, the static URL information captured by the web server filter is merged and written into the output table (SctAccessLog) alongside the service call data. At the time of the reduction and contingent on how Content Tracker is configured, the Content Tracker user metadata database tables are also updated with information collected from the static URL accesses and from the service call event records gathered during the reporting time period.

This section covers the following topics:

- "[Content Tracker Event Logs](#)" on page 8-11
- "[Combined Output Table](#)" on page 8-12

8.3.3.1 Content Tracker Event Logs

When the Content Tracker web server filter collects the access event details (static URL references), it records the information in raw event logs (sctLog files). The information in these files requires an explicit reduction (either interactive or scheduled) before it is included in the combined output table (SctAccessLog) along with the service call data.

Content Tracker supports multiple input files for different event log types and for configurations with more than one web server. For this reason, each web server filter instance uses a unique tag as a filename suffix for the Content Tracker event logs. The unique identification suffix consists of the web server host name plus the server port number. The reduction process searches for and merges multiple raw event logs named `sctLog-yyyyymmdd-<myhostmyport>.txt`. The raw event logs are processed individually.

This section covers the following topics:

- ["Recorded Usernames in Content Access Entries"](#) on page 8-12
- ["File Storage after Data Reduction"](#) on page 8-12

8.3.3.1.1 Recorded Usernames in Content Access Entries Occasionally, in a raw event log entry, you may notice that Content Tracker does not capture a username for a content access event, even though the user is logged into Content Server. For example, a logged-in user performs a search, views the content information of an item, and clicks the Web location link. The raw event log entry includes the information except the username.

In this case, the item was accessed via a static URL request and, in general, the browser does not provide a username unless the web server asks it to send the user's credentials. In particular, if the item is public content, the web server will not ask the browser to send user credentials, and the user accessing the URL will be unknown.

If you want Content Tracker to record the username for every document access, then you will need to configure your system such that a user login is required for every content item access. To do this, you must ensure that your content is not accessible to the guest role. In other words, if your content is not public, the user's credentials will be required to access the items. This ensures that a username is recorded in the raw event log entry.

8.3.3.1.2 File Storage after Data Reduction Depending on how Content Tracker is configured, when raw data log files in the "new" cycle are reduced, the Data Engine moves the data files into the following subdirectories:

- The default number of data sets that the `recent/` directory can hold is 60 sets (dates) of input data log files. When the number of data sets is exceeded, the eldest are moved to the `/archive` directory.

```
<cs_root>/data/contenttracker/data/recent/yyyyymmdd/
```

- By default, Content Tracker does not archive data. Instead, the expired rows are discarded to ensure optimal performance. However, if appropriately configured (see ["Performance Optimization Functions"](#) on page 8-1), Content Tracker uses the `archive/` directory to hold all input data log files that have been moved out of the "recent" cycle.

```
<cs_root>/data/contenttracker/data/archive/yyyyymmdd/
```

When raw data files are reduced, another file (`reduction_ts-yyyyymmdd.txt`) is generated as a time stamp file. For more detailed information about reduction cycle states for raw data file processing, see ["Reduction Tab"](#) on page A-156.

8.3.3.2 Combined Output Table

The `SctAccessLog` table contains entries for all static and dynamic content access event records. The `SctAccessLog` table is organized using one line per event in the reporting period. The rows in the table are tagged according to type:

- S indicates the records logged for service calls.
- W identifies the records logged for static URL requests.

This section covers the following topics:

- ["File Types for Entries in the SctAccessLog"](#) on page 8-13
- ["URLs Collected for Entries in the SctAccessLog"](#) on page 8-13
- ["Information Collected for Entries in the SctAccessLog"](#) on page 8-13

8.3.3.2.1 File Types for Entries in the SctAccessLog By default, Content Tracker does not log accesses to GIF, JPG, JS, CSS, CAB, and CLASS file types. This means that Web activity involving GIFs, JPGs, JSs, CSSs, CABs, and CLASSs will not result in entries in the web server filter event log files. Subsequently, entries for these file types will not be included in the combined output table (SctAccessLog) after data reduction.

To change the logging status of these file types, the desired file types must be enabled in the `sct.cfg` file located in the `IntradocDir/custom/ContentTracker/resources/` directory. To enable logging of these file types, adjust the default setting for the `SctIgnoreFileTypes` configuration variable (`gif,jpg,js,css`). The default setting excludes these file types. To include one or more of these file types, delete each desired file type from the list. To ensure that these changes take effect, it is necessary to restart the web server and Content Server.

For more detailed information about configuration variables and the `sct.cfg` file, see ["Configuration Variables"](#) on page 8-84.

8.3.3.2.2 URLs Collected for Entries in the SctAccessLog The Content Tracker web server filter cannot distinguish between URLs for user content and those used by the Content Server user interface. Therefore, it is possible that references to UI objects, such as `client.cab`, may appear in the static access logs. To eliminate these false positives, you may define a list of directory roots that are to be ignored by the Content Tracker filter.

The list of directories is stored in the `SctIgnoreDirectories` configuration variable in the `sct.cfg` file located in the `<cs_root>/data/contenttracker/config/` directory. This list will eliminate most if not all of the user interface object references. See ["Configuration Variables"](#) on page 8-84.

You can manually change the contents of the `SctIgnoreDirectories` value to list all the directories whose content should be ignored. You may want to change the default value:

- If you wish access to the UI objects to be logged along with user content.
- If you have a different view of which directories should be logged and which should be excluded from the logs.

8.3.3.2.3 Information Collected for Entries in the SctAccessLog The following table provides the information collected for each record in the SctAccessLog table.

Note: By default, Content Tracker does not collect data to populate certain columns for bulky and rarely used items such as `cs_referrer` and `cs_cookie`. This ensures optimal performance. See ["Performance Optimization Functions"](#) on page 8-1 for more information.

Column Name	Type / Size	Column Definition
SctDateStamp	datetime	Local date when data collected - YYYYMMDD (contingent on customer location and time of day event occurs -- may differ from date recorded for eventDate); time set to 00:00:00 Data source: Internal
SctSequence	int / 8	Sequence unique to entry type Data source: Internal
SctEntryType	char / 1	Entry type - "W" or "S" Data source: Internal
eventDate	datetime	GMT time and date when request completed (date contingent on customer location and time of day event occurs -- may differ from date recorded for SctDateStamp)
SctParentSequence	integer	Sequence of outermost Service Event in tree, if any.
c_ip	varchar / 15	IP of client
cs_username	varchar / 255	
cs_method	varchar / 10	"GET"
cs_uriStem	varchar / 255	Stem of URI
cs_uriQuery	varchar / [maxUrlLen]	Query portion, e.g. "IdcService=GET_FILE&dID=42..."
cs_host	varchar / 255	Content Server server name
cs_userAgent	varchar / 255	Client User Agent Ident By default, this column contains either "browser" or the suffix of any string beginning with "java:". This simplification ensures optimal performance for Content Tracker.
cs_cookie	varchar / [maxUrlLen]	Current cookie
cs_referer	varchar / [maxUrlLen]	URI leading to this request
sc_scs_dID	int / 8	dID Data source: from query or derived from URL (reverse lookup)
sc_scs_dUser	varchar / 50	dUser Data source: Service DataBinder "dUser"
sc_scs_idcService	varchar / 255	Name of IdcService, e.g. GET_FILE Data source: from query or Service DataBinder "IdcService"
sc_scs_dDocName	varchar / 30	dDocName Data source: from query of Service DataBinder "dDocName"
sc_scs_callingProduct	varchar / 255	Arbitrary identifier Data source: SctServiceFilter config file or Service DataBinder "sctCallingProduct"
sc_scs_eventType	varchar / 255	Arbitrary identifier Data source: SctServiceFilter config file or Service DataBinder "sctEventType"
sc_scs_status	varchar / 10	Service execution status Data source: Service DataBinder "StatusCode"

Column Name	Type / Size	Column Definition
sc_scs_reference	varchar / 255	"web", "native", "sdc_url" Values indicate the rendition of the accessed file; "web" = converted file (PDF), "native" = actual original file, and "sdc_url" = HTML. Data source: algorithmically from query parameters or ServiceFilter config file
comp_username	varchar / 50	Computed username. If a Service, obtained from UserData Service Object or HTTP_INTERNETUSER or REMOTE_USER or dUser. If a static URL, obtained from auth-user or internetuser.
comp_validRef	char / 1	"1" if the access was a Web reference (W), and ispromptlogin and isaccessdenied are both NULL, and the static URL exists at reduction time. Or, if the access was a service call (S) and the sc_scs_status field is NULL. "NULL" if the static URL did not exist at reduction time, or the user logon failed, or the logon succeeded but the user was not authorized to view the object. Indicates whether the referenced object exists and is available to the requesting user.
sc_scs_isPrompt	char / 1	"1" if true Data source: Plugin immediateResponseEvent field "ispromptlogin"
sc_scs_isAccessDenied	char / 1	"1" if true Data source: Plugin immediateResponseEvent field "isaccessdenied"
sc_scs_inetUser	varchar / 50	Internet user name (if security problem) Data source: Plugin immediateResponseEvent field "internetuser"
sc_scs_authUser	varchar / 50	Authorization user name (if security problem) Data source: Plugin immediateResponseEvent field "auth-user"
sc_scs_inetPassword	varchar / 8	Internet password (if security problem) Data source: Plugin immediateResponseEvent field "internetpassword"
sc_scs_serviceMsg	varchar / 255	Content Server service completion status Data source: Service DataBinder "StatusMessage"
extField_1 through extField_10	varchar / 255	General purpose columns to use with the extended service tracking function. In the field map ResultSets, the DataBinder fields are mapped to these columns.

8.3.4 Data Output

Content Tracker snapshots static URL accesses and logs service calls that are written in real time to the combined output table. Data reduction is necessary to process the static URL information and add it to the combined output table. Depending on how Content Tracker is configured, the data reduction process updates the related user metadata database tables with the information derived from processing the static URL data and the service call data.

Additionally, when Content Tracker is appropriately configured, the static and dynamic content access request information as well as all metadata fields are accessible for use in reports generated by the Content Tracker Reports component. The logged metadata includes content item and user metadata.

This section covers the following topics:

- ["Content Item Metadata"](#) on page 8-16

- ["User Metadata"](#) on page 8-16
- ["Reduction Log Files"](#) on page 8-19

8.3.4.1 Content Item Metadata

Rather than collecting content item metadata information, Content Tracker uses the standard Content Server metadata tables for content item metadata. This means that Content Tracker reports necessarily reflect current content item metadata. Therefore, if content item metadata has changed since a content item was accessed, any generated reports will reflect the changed metadata.

8.3.4.2 User Metadata

When appropriately configured, Content Tracker will collect and synthesize user profile summaries during the data reduction process. Thus, Content Tracker user metadata database tables are updated with information collected about users that were active during the reporting time period. These tables retain historically accurate user metadata. The names of the user metadata tables are formed from the root, which indicates the class of information contained, and an "Sct" prefix to distinguish the Content Tracker tables from native Content Server tables.

Note: By default, Content Tracker does not archive data. This means that Content Tracker does not move expired rows from the Primary tables to the Archive tables. Instead, the expired rows are discarded which ensures optimal performance. See ["Performance Optimization Functions"](#) on page 8-1 for more information.

Two complete sets of user metadata database tables are created:

- **Primary**
The Primary tables, named SctUserInfo, etc., contain the output for reduction data in the "new" and "recent" cycles.
- **Archive**
The Archive tables, named SctUserInfoArchive, etc., contain output for reduction data in the "archive" cycle.

When a reduction data file is moved from "recent" to "archive," the associated table records are moved from the Primary table to the Archive table. This prevents excessive buildup of rows in the Primary tables, and ensures that queries performed against recent data will complete quickly. Rows in the Archive table will not be deleted. You may move them to alternate storage for your historical records, or you may delete them using any SQL query tool. For more information about the reduction process and data cycles, see ["Reduction Tab"](#) on page A-156.

Tip: If you wish to delete all the rows in the Archive tables, you can simply delete the tables themselves. They will be recreated during the next Content Server restart.

Reports are not run against archive data. Therefore, any data that has been demoted from 'recent' to 'archive' will not be included in the generated reports.

This section covers the following topics:

- ["SctAccounts Table"](#) on page 8-17

- ["SctGroups Table"](#) on page 8-17
- ["SctUserAccounts Table"](#) on page 8-17
- ["SctUserGroups Table"](#) on page 8-18
- ["SctUserInfo Table"](#) on page 8-18

8.3.4.2.1 SctAccounts Table The SctAccounts table contains a list of all accounts. The SctAccounts table is organized using one line for each account.

Field Name	Type / Size / Field Definition
SctDateStamp	datetime GMT day when data is collected
dDocAccount	varchar / 30 Name of a Content Server account

8.3.4.2.2 SctGroups Table The SctGroups table contains a list of all user groups current at time of reduction. The SctGroups table is organized using one line per content item group.

Field Name	Type / Size / Field Definition
SctDateStamp	datetime GMT day when data is collected
dGroupName	varchar / 30 Name of a content item group

8.3.4.2.3 SctUserAccounts Table The SctUserAccounts table contains entries for all the users who are listed in the SctUserInfo table and who are assigned accounts that are defined in the current instance. A separate entry exists for each user-account combination.

There is a special situation in which the group and account information of a user is not determined by Content Tracker. This occurs in a proxied configuration that has multiple proxy instances. When the current instance is a proxy, the group information for an active user who is defined in a different proxy is replaced by a single placeholder line in SctUserGroups for that user. This line contains the username and a "-" placeholder for the group. If at least one account is defined in the current instance, a similar entry is created in SctUserAccounts for any user who is defined in a different proxy.

The SctUserAccount table is organized using one line per Content Server user and user's account.

Field Name	Type / Size / Field Definition
SctDateStamp	datetime GMT day when data is collected
dUserName	varchar / 100 Name of the user. If local to a proxy instance, is prefixed by the Content Server relative URL, e.g. cs_2/user1

Field Name	Type / Size / Field Definition
Account	varchar / 30 Name of account to which user has access. Placeholder in proxy-to-proxy configuration when current proxy instance has at least one account.

8.3.4.2.4 SctUserGroups Table The SctUserGroups table references only those users who logged on during the data collection period. If ContentTracker is running in a proxied Content Server configuration, only groups that are defined in the current instance are listed. For example, a user named "joe" is defined in the master instance and has access to groups "Public" and "Plastics" in the master instance. If "joe" logs on to a proxy instance and the group "Plastics" is not defined in the proxy, only the association between "joe" and "Public" will appear in SctUserGroups.

The SctUserGroups table is organized using one line for each user's group for each user that is active during the reporting period.

Field Name	Type / Size / Field Definition
SctDateStamp	datetime GMT day when data is collected
dUserName	varchar / 100 Name of the user. If local to a proxy instance, is prefixed by the Content Server relative URL, e.g. cs_2/user1
dGroupName	varchar / 30 Name of group that the user has permission to access. No distinction is made for the type of access (R, RW, etc.).

8.3.4.2.5 SctUserInfo Table The SctUserInfo table includes all users known to the current instance plus any additional users from a different instance who have logged on to the current instance during the data collection period. In a proxied configuration, users that are local to one instance are usually known (visible from the UserAdmin application) to other instances. (For this visibility to occur, Content Server instances must typically be restarted after local users have been added.) However, when a user is defined locally with the same name in two instances, only the local user is visible in each of these instances.

For example, the user "sysadmin" defined in the master is not the "sysadmin" user that appears in the UserAdmin application for a proxy. The proxy has its own "sysadmin" user who is defined locally. It is possible for these two different users to both log on during the same data collection period: the user from the master would log on as "sysadmin" and the user from the proxy would log on as something like "cs_2/sysadmin". In this case cs_2/ is the server relative URL that must be prepended to the proxy username. The SctUserInfo file generated for this period will contain separate entries for "sysadmin" and "cs_2/sysadmin".

The SctUserInfo table is organized using one line per Content Server user.

Field Name	Type / Size / Field Definition
SctDateStamp	datetime GMT day when data is collected

Field Name	Type / Size / Field Definition
dUserName	varchar / 100 Name of the user. If local to a proxy instance, is prefixed by the Content Server relative URL, e.g. cs_2/user1
dUserType	varchar / 30 Type of the user. Placeholder if user has no type

8.3.4.3 Reduction Log Files

When data reduction is run, the Content Tracker Data Engine generates a summary results log file in `<cs_root>/data/contenttracker/log/`. The reduction log files are named using the format `reduction-yyyymmdd.log`. The reduction logs may be useful to help diagnose errors that have occurred during the data reduction process. For more information about the raw event log files and their corresponding reduction logs, see ["Content Tracker Event Logs"](#) on page 8-11.

8.3.5 Tracking Limitations

The current versions of Content Tracker and Content Tracker Reports have several known tracking limitations.

This section covers the following topics:

- ["Tracking Limitations with Static URLs and WebDAV"](#) on page 8-19
- ["Tracking Limitations and Data Directory Protections"](#) on page 8-21
- ["Tracking Limitations with ExtranetLook Component"](#) on page 8-21

8.3.5.1 Tracking Limitations with Static URLs and WebDAV

Content Tracker is unable to guarantee exact access counts for content requested through static URLs or by WebDAV clients. The access counts determined by Content Tracker are generally correct, but there are specific, exceptional circumstances in which Tracker is unable to determine whether the content was actually delivered to the requesting user, or if it was, which specific revision of the content was delivered. This section describes situations that may result in incorrect access counts.

This section covers the following topics:

- ["Missed Accesses for Content Repeatedly Requested via WebDAV"](#) on page 8-19
- ["False Positive for Access by Saved \(stale\) Static URL"](#) on page 8-20
- ["Wrong dID Reported for Access by Saved Static URL"](#) on page 8-20

8.3.5.1.1 Missed Accesses for Content Repeatedly Requested via WebDAV

Scenario: User accesses a document via a WebDAV client, and then accesses the same document in the same manner later on. Only the first WebDAV request for the document is recorded. Access counts reported for such content will tend to be lower than actual.

Details: WebDAV clients typically use some form of object 'caching' to reduce the amount of network traffic. If a user requests a particular object, the client will first determine whether it already has a copy of the object in a local store. If it does not, the client will contact the server and negotiate a transfer. This transfer will be recorded as a `COLLECTION_GET_FILE` service request.

If the client already has a copy of the object, it will contact the server to determine whether the object has changed since the client local copy was obtained. If it has changed, then a new copy will be transferred and the COLLECTION_GET_FILE service details will be recorded.

If the client copy of the object is still current, then no transfer will take place, and the client will present the saved copy of the object to the user. In this case, the content access will not be counted even though the user appears to get a "new" copy of the original content.

8.3.5.1.2 False Positive for Access by Saved (stale) Static URL

Scenario: User saves a "Web Location" (URL) for a content file. The content is subsequently revised in such a way that the saved URL is no longer valid. The user then attempts to access the content via the (now stale) URL, and gets a "Page Cannot be Found" error (HTTP 404). Content Tracker may record this as a successful access even though the content was not actually delivered to the user. Access counts reported for such content will tend to be higher than actual.

Details: The "Web Location" of a content file is the means by which a user can access content via a "static URL". The specific file path in the URL is used in two, slightly different contexts: It is used by the web server to locate the content file in the Content Server repository, and it is also used by Content Tracker to determine the dID and dDocName of the content file during the data reduction process. The problem occurs when the content is revised in such a way that the web location for a given Content ID changes between the time the URL is saved and the time the access is attempted.

For example, if a Word document is checked in, and then revised to an XML equivalent, then the web location for the latest revision of the content will change from: `DomainHome/ucm/cs/groups/public/documents/adacct/xyzzzy.doc`

to: `DomainHome/ucm/cs/groups/public/documents/adacct/xyzzzy.xml`

where: "xyzzzy" is the assigned Content ID.

The original revision is "renamed" as:

`DomainHome/ucm/cs/groups/public/documents/adacct/xyzzzy~1.doc`

This means the original Web Location will no longer work as a static URL. The Content ID obtained from the original URL, however, will match the latest revision. Consequently, Content Tracker reports this as an access to Content ID "xyzzzy", even though the web server was unable to deliver the requested file to the user.

8.3.5.1.3 Wrong dID Reported for Access by Saved Static URL

Scenario: User accesses content via the "Web Location" (URL). The content is then revised before the Content Tracker data reduction operation is performed. The user will be reported as seeing the latest revision, not the one that s/he actually saw. Access counts reported for such content will tend to be attributed to a newer revision than actual. You can minimize this effect by scheduling or running Content Tracker data reductions on a regular basis.

Details: This is related to False Positive for Access by Saved (stale) Static URL, described above. That is, the web server uses the entire web location, (e.g. `DomainHome/ucm/cs/groups/public/documents/adacct/xyzzzy.doc`), to locate and deliver the content, while Content Tracker uses only the ContentID portion to determine the dID and dDocName values. Moreover, Content Tracker makes this determination during data reduction, not at the time the access actually occurs. Consequently, Content Tracker will report the user as having seen the revision current at the time of the reduction, not the one that was current at the time of the access.

There are some implications of this that are not immediately obvious, such as when the group and/or security of the revision are changed from the original. For example, if a user accesses "Public" Revision 1 of a document through a static URL, and the document is subsequently revised to Revision 2 and changed to "Secure" before the Content Tracker data reduction takes place, Tracker will report that the user saw the Secure version. This may also occur when the content file type changes. If the user accesses an original.xml version, which is then superseded by an entirely different.doc before the data reduction is performed, Tracker will report that the user saw the.doc revision, not the actual.xml.

8.3.5.2 Tracking Limitations and Data Directory Protections

Content Tracker's web server filter runs in the authorization context of the user whose access request is being processed. In some cases, the owner of the request processing thread is a system account. In others, it is a requesting user or another type of non-system account used by the application. Regardless, the account associated with the requesting user/system determines the permissions that the web server filter is ultimately granted.

The web server filter collects access event details and records the information in raw event logs (sctlog files located in Content Tracker's data directory). If the existing sctlog file does not exist when the access event occurs, Content Tracker creates one and uses the default protection and authorization credentials of the user who owns the event thread. Or, if the accessing user account has write permission to the data directory, the content access data is recorded in the sctlog files. Otherwise, the logging request fails and the access event details are not recorded.

To ensure that Content Tracker can properly record user access requests, the data directory must be configured to accept the account authorization credentials for all users. Granting world write permission (or the equivalent) is one method. It is recommended that the Content Tracker data directory allows unlimited write access to all possible users unless there are conditions that cannot accommodate this level of unrestricted access permissions.

8.3.5.3 Tracking Limitations with ExtranetLook Component

The ExtranetLook component allows customizations of cookie-based login forms and pages for anonymous-type users. The component uses a built-in web server plugin that monitors requests and determines whether or not a request is authenticated based on cookie settings. When a user requests access to a content item, Content Tracker must function within the authorization context of the user's account.

After collecting the access information, Content Tracker tries to record the event data in the sctlog file. If the user's account permissions allow access to Content Tracker's data directory, then the request activity is logged into the sctlog file. However, if the account does not have write authorization, the logging request will fail and the request activity is not recorded.

For more information about access permission into Content Tracker's data directory, refer to "[Tracking Limitations and Data Directory Protections](#)" on page 8-21.

8.4 Data Tracking Functions

This section covers the following topics:

- "[Data Reduction Features](#)" on page 8-22
- "[Activity Snapshots](#)" on page 8-25

- ["Service Calls"](#) on page 8-26
- ["Web Beacon Objects"](#) on page 8-27
- ["Using Content Tracker"](#) on page 8-42

8.4.1 Data Reduction Features

During the data reduction process, all of the accumulated raw data for a given date is gathered and merged making the information complete. This section describes the primary concepts of data reduction.

Note: By default, Content Tracker is configured for maximum efficiency. This is done using the [Performance Optimization Functions](#) that are set during the Content Server installation procedure. Therefore, some of the data reduction processes are directly affected by these variable settings.

This section covers the following topics:

- ["Data Reduction Cycles"](#) on page 8-22
- ["Access Modes and Data Reduction"](#) on page 8-22
- ["Reduction Sequence for Event Logs"](#) on page 8-23
- ["Reduction Schedules"](#) on page 8-24

8.4.1.1 Data Reduction Cycles

Reduced table data is moved from the primary tables to the corresponding archive tables when the associated raw data is moved from 'recent' to 'archive' status. The primary tables contain the output for reduction data in the 'new' and 'recent' cycles and the archive tables contain output for reduction data in the 'archive' cycle.

Raw data is demoted from 'new' to 'recent' when the data is reduced and it is more than one day old. Thus, the 'new' cycle indicates that the data is for the current day or is unreduced data from previous dates. The 'recent' cycle indicates that the data is from yesterday or earlier and has been reduced.

Raw data is demoted to 'archive' (and the corresponding rows in the SctAccessLog table are moved to the SctAccessLogArchive table) when the number of 'recent' sets reaches a configured threshold number and a reduction process is run, either manually or via the scheduler. For more information about configuring the threshold number for 'recent' sets, refer to the SctMaxRecentCount configuration variable in the sct.cfg table. See ["Configuration Variables"](#) on page 8-84. If a reduction process is never run, the raw data remains in the 'recent' cycle indefinitely.

8.4.1.2 Access Modes and Data Reduction

The way users access content items determines how those accesses are recorded in the SctAccessLog table. There are two basic user access modes: service accesses (viewing the actual native file) and static URL accesses (viewing the web location file). If content items are accessed via a service, the events are recorded in the SctAccessLog table in real time. In this case, the activity is recorded immediately and is not dependent on the reduction process.

However, if content items are accessed via static URLs, the web server filter records the events in a static log file. During the data reduction process, the static log files for a

specified date are gathered and the data is moved into the SctAccessLog table. In this case, if data reduction is not performed for a given date, there will be no static URL records in the SctAccessLog and no evidence that these accesses ever occurred.

Thus, the difference in the way static and service accesses are processed has implications with regard to interval counts, see "[Snapshot Tab](#)" on page A-158. For example, a user might access a content item twice on Saturday: once via the web location file (static access) and once via the native file (service access). The service access is recorded in the SctAccessLog table but the web location access is not.

Then, if Sunday's data is reduced, only the service access (not the static access) is included in the summaries of the short and long access count intervals. However, if Saturday's data is also reduced, then both the service and static accesses are recorded in the SctAccessLog table and, subsequently, included in the short and long access intervals.

8.4.1.3 Reduction Sequence for Event Logs

Generally, data sets are reduced in chronological order to ensure that the information included in generated reports is as current as possible. In particular, the order in which the raw data log files are reduced determines what specific user access data is logged and counted. During reduction, the SctAccessLog and user metadata database tables are modified with data from the raw data files.

If you are using the snapshot function to gather search relevance information, then the metadata fields associated with the activated activity metrics are also updated during data reduction. The activity metrics use custom metadata fields that are included in Content Server's DocMeta database table. For more information, see "[Snapshot Tab](#)" on page A-158.

The currentness of the information in the various database tables is dependent on the order in which you reduce the data sets. Content Tracker always changes the activity metrics values according to the applicable data in the reduction data set. Normally, data sets are reduced in calendar order to ensure that activity metrics will advance as expected. In fact, to ensure that data values are complete and current, you should perform data reduction on a daily basis.

If the data sets are reduced out of order, re-reducing the current or most recent data set will correct the counts. However, it is always preferable to consistently reduce data in calendar order.

The following scenarios show how the reduction sequence affects the stored data.

Scenario 1:

Depending on how content items are accessed, if activity on certain days (such as Saturdays and Sundays) is never reduced, then accesses that occur on those days might never be logged or counted, see "[Access Modes and Data Reduction](#)" on page 8-22. Similarly, if a content item is accessed on Tuesday and reductions are done for Monday and Wednesday, the Tuesday access is might not be counted toward the last access of that content item.

Scenario 2:

If there was a significant increase in accesses in the last few days, and you reduce data from two weeks earlier, the long and short access metrics for content items will not reflect the recent activity. Instead, the interval values from two weeks earlier override today's values. Reducing the current or most recent data set will correct the counts.

The reduction order does not adversely affect the Last Access date. The reduction process only changes the Last Access date if the most recent access in the reduction data set is more recent than the current Last Access value in Content Server's DocMeta database table.

If you have reduced a recent data set and a particular content item had been accessed, the Last Access field is updated with the most recent access date in the reduction data set. If you then re-reduce an older data set, the older access date for this content item will not overwrite the current value.

For more information about long and short activity metrics, see ["Snapshot Tab"](#) on page A-158 and the applicable check boxes and corresponding fields/intervals.

Scenario 3:

Reducing the data sets in an arbitrary order interferes with the demotion of "recent" data files to "archive" data files. The movement of the associated table records is based on the age, archive tables are intended to store the "oldest" data. If the data sets are reduced in random order, it is not apparent which data is the oldest.

For more information about recent and archive data files, see ["User Metadata"](#) on page 8-16, ["Data Reduction Cycles"](#) on page 8-22, and the Cycle column on the ["Reduction Tab"](#) on page A-156.

8.4.1.4 Reduction Schedules

Reduction runs can be configured to run on a scheduled basis. It is commonplace to use the scheduler to periodically reduce the raw data. In this case, there would be a steady flow of raw data into the 'recent' and 'archive' repositories, and a similarly steady flow of reduced data from the primary tables to the archive tables. For additional information about raw data, data statuses and primary / archive tables, see the ["Reduction Tab"](#) on page A-156.

The following are key characteristics of the Content Tracker scheduling process:

- If the Content Tracker Data Engine is disabled the day before a scheduled reduction run, no data is collected. If the Content Tracker Data Engine is enabled on the day of the scheduled reduction run, the scheduler will not run because no data is available.
- Data reductions scheduled for a given day are performed on data collected during the previous day. The previous day is defined as the 24-hour period beginning and ending at midnight (system time).

Note: Depending on various conditions of the system load, the following error may be issued if the scheduled reduction is set to run within a few minutes after midnight:

```
<date_time>: Cannot reduce data. A request is in progress to delete raw data that was generated on this date.
```

If this message is issued, try scheduling the reduction run 5 or 10 minutes later.

Tip: To conserve CPU resources, reduction runs can be scheduled for early morning hours when the system load is generally the lowest.

8.4.2 Activity Snapshots

The activity snapshots feature captures user metadata that is relevant for each recorded content item access.

Note: By default, Content Tracker collects and records only content access event data. This excludes information gathering on non-content access events like searches as well as the collection and synthesis of user profile summaries. As a result, only the SctAccessLog table is populated. Although the user data output tables exist, Content Tracker does not populate them unless the Snapshot function is activated. See "[Performance Optimization Functions](#)" on page 8-1 for more information.

This section covers the following topics:

- "[Search Relevance Metrics](#)" on page 8-25
- "[Search Relevance Metadata Fields](#)" on page 8-26

8.4.2.1 Search Relevance Metrics

When activated, the activity metrics and corresponding metadata fields provide search relevance information about user accesses of content items. An optional automatic load function allows you to update the last access activity metric to ensure that checked-in content items are appropriately timestamped.

Content Tracker fills the search relevance custom metadata fields with content item usage information that indicates the popularity of particular content items. This information includes the date of the most recent access and the number of accesses in two distinct time intervals.

Users can apply the information generated from these activity metrics functions in various ways. You can selectively use the activity metrics to subsequently order search results based on content item popularity. For example, you might want to order search results according to which content items have been recently viewed or the most viewed in the last week.

If the snapshot function is activated, the values in the search relevance metadata fields are updated during a post-reduction step. During this processing step, Content Tracker uses SQL queries to determine which content items have changed activity metrics values. Content Tracker updates the applicable database tables with the new values and initiates a re-indexing cycle. However, only the content items that have changed metadata values are re-indexed. See "[Data Reduction Process with Activity Metrics](#)" on page 8-9.

The Snapshot tab enables you to activate the snapshot function and selectively enable each of the activity metrics. Each function that you activate must have a custom metadata field associated with it.

For more information, see "[Enabling the Snapshot Function and the Activity Metrics Options](#)" on page 8-47 and "[Linking Activity Metrics Functions to Search Relevance Metadata Fields](#)" on page 8-47.

Alternatively, you can manually update the applicable configuration variables in Content Tracker's *sct.cfg* file. See "[Configuration and Customization](#)" on page 8-84.

8.4.2.2 Search Relevance Metadata Fields

Before you can link the activity metrics functions to custom metadata fields, the fields must already exist and must be of the correct type. The metadata field associated with the Last Access metric must be of type Date. The metadata fields associated with the Access Count metrics must be of type Integer. See "[Creating the Search Relevance Metadata Fields](#)" on page 8-45.

When you create custom metadata fields to use in conjunction with the activity metrics, you have the option to enable them for the search index. If the custom metadata fields are indexed (and searchable), the access values stored in them are more efficiently accessed. That is, indexed fields are more useful for selecting and/or ordering search results by relevance.

Indexing is expensive, particularly when full text search is enabled. The disadvantage of indexed metadata fields is that when the values in the search relevance metadata fields change, the affected content items must be re-indexed to update their values in the database table. Therefore, on a large instance with many content item accesses, updating the search relevance fields will adversely affect performance.

Alternatively, you can disable the indexing function of the custom metadata fields. In this case, it is possible to search on and find values for non-indexed metadata fields, but the search is more expensive.

If re-indexing the affected content items degrades the performance too severely, you can optionally deactivate the Snapshot function. Unfortunately, this means that the activity metrics information will no longer be collected. As a result, you will be unable to order current search results by usage (for example, listing accessed content items in order of decreasing popularity).

8.4.3 Service Calls

Content Tracker enables you to log Content Server service calls along with data values relevant to the associated services. Every service that you want to be logged must have a service entry in the serviced call configuration file (SctServiceFilter.hda). In addition to the services that are logged, their corresponding field map ResultSets can optionally be included in the SctServiceFilter.hda.

Note: By default, Content Tracker only logs services that have event types for content access or services that cause an entry to be made in the DocHistory table. Although this ensures maximum performance, this means that some service events will not be logged. See "[Performance Optimization Functions](#)" on page 8-1 for more information.

The service entries in the SctServiceFilter.hda file allow Content Tracker to gather event and usage information. The enabled services automatically log various general DataBinder fields, such as dUser and dDocName. Linking a field map ResultSet to a service entry enables you to use the extended service call tracking function. The field map ResultSet consists of a list of data field names, location names, and their associated general purpose table column names in the output database table (SctAccessLog).

The SctAccessLog table provides additional general purpose columns for use with the extended service call tracking function. You can fill these columns with any data values you feel are appropriate for the associated service call. When you list the data field names in the field map ResultSet, you must also list the location name that is the

source of the data field, and the table column name where the data is logged. Because the extended service tracking function logs and tracks specific data for a specific service call, you can generate customized reports for access and usage information.

Caution: In field map ResultSets, nothing prevents you from mapping data fields to existing, standard SctAccessLog table columns. The extended service mapping occurs after the standard field data values are collected. Consequently, you can override any of the standard table column fields.

For example, the service you are logging might carry a specific user name (such as, MyUserName=john) in a data field. You could use the extended tracking function to override the contents of the sc_scs_dUser column. In this case, you simply combine MyUserName and sc_scs_dUser and use them as the data field, location, and table column set in the field map ResultSet.

Therefore, it remains your responsibility to ensure that the data being logged is a reasonable fit with the SctAccessLog column type.

For more information about the SctAccessLog table and the general purpose columns, see "[Combined Output Table](#)" on page 8-12. For more detailed information about the SctServiceFilter.hda file, the extended service call tracking function, and ResultSet configuration, see "[Service Call Configuration](#)" on page 8-75.

8.4.4 Web Beacon Objects

A web beacon is a managed object that facilitates specialized tracking support for indirect user accesses to web pages or other managed content. In earlier versions, Content Tracker was unable to gather data from cached pages and pages generated from cached services. The web beacon feature involves the use of client side embedded references that are invisible references to the managed beacon objects within Content Server. This system enables Content Tracker to record and count user access requests for managed content items that have been copied by an external entity for redistribution without obtaining content directly from Content Server.

Briefly described, the web beacon feature uses specially designed web beacon references that are encoded with pseudo query parameters and embedded into managed content items or web pages. When a user requests a tagged object, the browser encounters the web beacon reference while rendering the page. To resolve the reference, the browser requests the web beacon object from Content Server and, in doing so, transmits the encoded query string. Content Tracker interprets the query parameter values and can record and count the access to the cached item or web page.

Note: The implementation requirements for the web beacon feature are highly contingent on the system configurations involved. There are many factors that cannot be addressed by Content Tracker documentation. All access records collected and processed by Content Tracker are, at best, an indication of general user activity and not exact counts.

This section covers the following topics:

- "[Use Cases for Web Beacon Referencing](#)" on page 8-28

- ["Web Beacon Operational and Implementation Overview"](#) on page 8-29
- ["Web Beacon Objects"](#) on page 8-30
- ["Web Beacon References"](#) on page 8-31
- ["Reduction Processing for Web Beacon References"](#) on page 8-33
- ["General Implementation Considerations"](#) on page 8-34
- ["Examples of Web Beacon Embedding"](#) on page 8-36

8.4.4.1 Use Cases for Web Beacon Referencing

The web beacon feature enables you to track user accesses to managed content items or web sites that originated in Content Server but are not currently being served by Content Server. When users access cached web pages and content items, Content Server and Content Tracker are unaware that these requests ever happened. Therefore, without using web beacon referencing, Content Tracker will not record and count such requests.

When cached content is served to consumers, users perceive that the requested object was served by Content Server. In actuality, however, the managed content is actually provided using non-dynamic content delivery methods. In these situations, the managed content is actually served by a static website, a reverse proxy server, or even out of a file system. To ensure that this type of activity can be tracked, you will need to implement the web beacon feature.

This section covers the following topics:

- ["Reverse Proxy Server Activity Tracking"](#) on page 8-28
- ["External Site Studio Web Site Activity Tracking"](#) on page 8-29

8.4.4.1.1 Reverse Proxy Server Activity Tracking The reverse proxy server is positioned between the users and Content Server. In this configuration, the reverse proxy server caches managed content items by making a copy of each requested object. The next time another user asks for the document, it displays its own copy from the private cache. If the reverse proxy server does not already have the requested object in its cache, it must request a copy from Content Server.

Because the reverse proxy server delivers cached content, it does not directly interact with Content Server. In such cases, Content Tracker cannot detect these requests and does not track this type of user access activity. However, when you implement the web beacon feature, Content Tracker has the ability to gather user request data from cached pages.

Note: Generally, a reverse proxy server configuration is used to improve web performance by caching or by providing controlled web access to applications and sites behind a firewall. The idea is to load balance and move copies of frequently accessed content to a web server where it is updated on a scheduled basis. This is an indirect delivery system where users work dynamically but content is delivered statically.

However, for the web beacon feature to work, each user access includes an additional, direct request to the managed beacon object that resided in Content Server. Although this adds overhead to normal requests, the web beacon object is very small and does not significantly interfere with the reverse proxy server's performance. Furthermore, it is only necessary to embed the web beacon references in objects that you specifically want to track.

8.4.4.1.2 External Site Studio Web Site Activity Tracking Site Studio is integrated with Content Server and enables users to create web sites that are stored and managed in the content server instance. When Site Studio and Content Server are located on the same server, Content Tracker is configured to automatically track the applicable user accesses. The gathered Site Studio activity data is then used in pre-defined reports. See "[Site Studio Web Site Activity Reporting](#)" on page 8-62.

If your web site is intended for an external audience, you may decide to create a copy of the site and transfer it to another server. In addition to being viewed publicly, this solution also ensures that site development remains separate from the production site. In this arrangement, however, you would need to implement the web beacon feature to make sure that Content Tracker can collect and process user activity.

Note: Currently, there are two modes of Site Studio integration with Content Tracker. One type is the existing built-in integration that automatically occurs when Site Studio is installed alongside Content Server. The other form uses the web beacon feature and Content Tracker regards Site Studio the same as any other web site generator.

8.4.4.2 Web Beacon Operational and Implementation Overview

The design point of Content Tracker is to record and count requests for objects that are currently managed by Content Server. The web beacon feature makes it possible to count requests for managed objects that have been copied by an external entity (such as a reverse proxy server or entities for redistribution without involving Content Server. See "[Reverse Proxy Server Activity Tracking](#)" on page 8-28 and "[External Site Studio Web Site Activity Tracking](#)" on page 8-29.

The following list provides a brief overview of the web beacon feature's functionality and implementation requirements. It provides general background information and is intended to help prepare you for more detailed information provided in the subsequent sections.

- Part 1 - Creating [Web Beacon Objects](#):

To begin implementing the web beacon feature, you will need to create a web beacon object. This is typically a very small object such as a 1x1 pixel transparent image. The web beacon object must then be checked into Content Server and added to Content Tracker's list of web beacon object names.

- Part 2 - Creating [Web Beacon References](#):

The next implementation step involves creating the web beacon references to the checked in web beacon object and embedding them into cached HTML pages or managed content items. These references are composed of two parts. The first part is a URL reference to the web beacon object. The second part consists of extra information that is used to identify the requested content. This information is encoded as pseudo query parameters.

When users access any managed content items or web pages that contain the embedded web beacon reference, the server (Site Studio or reverse proxy) delivers the cached item. However, to render the web page or content item, the browser must also resolve the web beacon reference. Thus, the browser requests the web beacon object from Content Server.

This access request to Content Server carries with it the encoded information from the query parameters. The information in the query parameters is sufficient to enable Content Tracker to identify the tagged web page or managed object. Generally, the web browser ignores the query parameters long enough for the Content Tracker web server filter to copy and store them for data reduction.

- Part 3 - Content Tracker's [Reduction Processing for Web Beacon References](#):

Finally, Content Tracker logs the web beacon reference to the beacon object in the usual way. See "[Data Reduction](#)" on page 8-11. During data reduction, Content Tracker checks the dDocName of each referenced object against the list of registered web beacons. See "[Web Beacon Objects](#)" on page 8-30. If the dDocName of the requested object is on the list, then the query parameters are processed in such a manner to ensure that the URL request is logged as a request for the tagged object (web page or managed content item) rather than the web beacon object.

8.4.4.3 Web Beacon Objects

When you implement the web beacon feature, you need to create one or more content items to use as the web beacon object(s). Typically, a web beacon object consists of a 1x1 pixel transparent image; anything that has low overhead and won't disrupt the page being rendered is suitable. The ideal web beacon object would have zero content. Although you can create multiple web beacon objects, most implementations will function fine using only one.

Note: When you create a web beacon object, you must ensure that it is not a file type value included in the SctIgnoreFileType configuration variable. If the web beacon object file type is one of the listed values, Content Tracker will not collect the activity data for the associated cached content items or web pages. For more detailed information about the SctIgnoreFileType configuration variable, see "[File Types for Entries in the SctAccessLog](#)" on page 8-13.

Next, your completed web beacon object(s) must be checked into Content Server. Then, you will need to update Content Tracker's SctWebBeaconIDList preference/configuration variable. During data reduction, Content Tracker checks the SctWebBeaconIDList settings to determine how the web beacon reference listings in the event logs should be processed. If the applicable web beacon object is listed, Content Tracker processes the data appropriately.

Note: When Content Tracker is installed, you have the option to enter the dDocNames of web beacon objects into the SctWebBeaconIDList preference variable. However, if you don't know the names of the web beacon objects in advance, you can also manually change the SctWebBeaconIDList settings. This is done by using the update function in the Component Manager. See ["Adding/Editing Web Beacon Object Names to the Web Beacon ID List"](#) on page 8-55.

8.4.4.4 Web Beacon References

After you have created and checked in your web beacon object(s), you need to create their corresponding web beacon reference(s). Generally, a single web beacon object will work in most systems because different query strings appended to the web beacon static URL make each reference unique. Additionally, each query parameter set consists of distinct combinations of variables that identify specific cached web pages or managed content items.

To ensure that the web beacon feature effectively tracks indirect user activity, the web beacon references for web beacons must first be properly formatted and include the necessary information. Next, the references must be appropriately embedded into cached documents or web pages and correctly executed. Finally, Content Tracker must be able to accurately capture and store the applicable data for future reduction processing.

This section covers the following topics:

- ["Format Structure for Web Beacon URL References"](#) on page 8-31
- ["Placement and Retrieval Scheme for Web Beacon References"](#) on page 8-33
- ["Data Capture and Storage for Cached Managed Content Items"](#) on page 8-33

8.4.4.4.1 Format Structure for Web Beacon URL References Web beacon URL references consist of two parts: the web beacon static URL used to access the web beacon object managed by Content Server and a pseudo query string with content item variables. The query string appended to the web beacon static URL is never actually executed. However, the set of query parameter values provides sufficient additional information for Content Tracker to be able to identify the associated managed object. See ["Data Capture and Storage for Cached Managed Content Items"](#) on page 8-33.

Note: When you create the web beacon references, you must ensure that the web beacon static URL within Content Server does not use a directory root that is included in the SctIgnoreDirectories configuration variable.

If the web beacon static URL root directory is one of the listed values, Content Tracker will not collect the activity data for the associated cached content items or web pages. For more detailed information about the SctIgnoreDirectories configuration variable, see ["File Types for Entries in the SctAccessLog"](#) on page 8-13

The query parameter set functions as a code that informs Content Tracker what the actual managed content item is that the user accessed. One of the query parameters is the item's dID. Including a unique set of query parameter values enables you to

monitor indirect user access activity for managed objects that have been copied and cached.

The following examples illustrate general format structures associated with the web beacon feature. Combined, the examples demonstrate how you can use one web beacon object while creating an unbounded number of different query strings. The same web beacon object (`dDocName = bcn_2.txt`) is used in all of the examples. However, by varying the query parameters, the requests for this web beacon object can convey to Content Tracker a 'request' for any managed object in the repository.

These examples are based on the following assumptions:

- The web beacon object (`bcn_2.txt`) is checked into Content Server and is included in the web beacon list (`SctWebBeaconIDList`). See ["Web Beacon Objects"](#) on page 8-30.
- The applicable web beacon references are embedded into the associated managed content items (`doc1`, `doc2`, and `doc3`). See ["Placement and Retrieval Scheme for Web Beacon References"](#) on page 8-33.
- To resolve the web beacon reference, the browser must request a copy of the web beacon object from Content Server. See ["Placement and Retrieval Scheme for Web Beacon References"](#) on page 8-33.
- The web beacon requests occur because users are indirectly requesting the related content items. See ["Use Cases for Web Beacon Referencing"](#) on page 8-28.

Example 8-1 Web Beacon Request Without Query Parameters

```
http://myhost.somewhere.else/idc/groups/public/documents/adacct/bcn_2.txt
```

This example begins with a static web reference to the web beacon object. Although it is a legitimate direct access to the web beacon object, there are no appended query parameters. Therefore, Content Tracker will process this access event as a request for the web beacon object itself. See ["Data Collection and Processing"](#) on page 8-8.

Example 8-2 Web Beacon Request for Tracking doc1

```
http://myhost.somewhere.else/idc/groups/public/documents/adacct/bcn_2.txt?sct_dDocName=doc1&sct_dID=1234&...
```

This example also begins with the usual static web reference to this beacon object. However, it has a pseudo query string appended to it that contains an arbitrary number of query parameters. The values contained in these query parameters convey the information about the specific managed object (`doc1`) that the user has requested.

Example 8-3 Web Beacon Request for Tracking doc2

```
http://myhost.somewhere.else/idc/groups/public/documents/adacct/bcn_2.txt?sct_dDocName=doc2&sct_Ext_2=WebSite4
```

This example is similar to [Example 8-2](#). The parameter values provide information about the user requested content item (`doc2`). However, in this example, the query string includes another parameter to convey additional information about the tagged content item. In this case, the added parameter uses an `extField` column name. Accordingly, the value `WebSite4` is copied into the `extField_2` column of the `SctAccessLog` table. (The `extField` column substitution is optional and application dependent.)

Example 8–4 Web Beacon Request for Tracking doc3

```
http://myhost.somewhere.else/idc/groups/public/documents/adacct/bcn_2.txt?sct_
dDocName=doc2&sct_Ext_2=WebSite4&sct_Ext_8=SubscriptionClass6
```

This example modifies [Example 8–3](#) by adding a second (although non-sequential) extField column name. In this case, `WebSite4` is copied into the `extField_2` column of the `SctAccessLog` table, and `SubscriptionClass6` is copied into the `extField_8` column. (Again, the extField column substitutions are optional and application dependent.)

8.4.4.4.2 Placement and Retrieval Scheme for Web Beacon References To properly facilitate the web beacon feature, the specially constructed web beacon references must be embedded in whatever managed object you want to track. Generally, web beacon references can be embedded in any HTML page. Users indirectly request access to the modified "managed" content items (via an external Site Studio web site or a reverse proxy server).

In turn, the browser encounters the web beacon reference while rendering the requested page. Each display of the managed object, regardless of how the object was obtained, causes the browser to request a copy of the web beacon object directly from Content Server. When the browser resolves the web beacon reference, Content Tracker captures the data that includes the web beacon reference along with the set of pseudo query parameters that identify the managed content item.

8.4.4.4.3 Data Capture and Storage for Cached Managed Content Items Ordinarily, query parameters in static URLs serve no function for the web browser. However, when resolving the web beacon static URL, the browser ignores the appended query parameters long enough for Content Tracker's web server filter to record them. Although the pseudo query string is never executed, Content Tracker captures the query parameter values along with other data such as the client IP address and date/time stamp. Content Tracker records the data in web access event logs (sctlog files). See "[Content Tracker Event Logs](#)" on page 8-11.

8.4.4.5 Reduction Processing for Web Beacon References

The web beacon feature enables Content Tracker to capture and record indirect user requests for managed content items. During data reduction, when these specially constructed web beacon references are processed, Content Tracker determines that the request was for a web beacon object rather than a regular content item. Content Tracker does this by comparing the web beacon's `dDocName` with the list of `dDocNames` in the `SctWebBeaconIDList`.

If there isn't a match in the list, or there are no query parameters appended to the web beacon reference, Content Tracker processes the access event normally. See "[Data Reduction](#)" on page 8-11. If the web beacon's `dDocName` is identified, Content Tracker continues to process and interpret the associated URL query parameters. Ultimately, the data reduction process treats the web beacon access request as a request for the web page or content item.

During data reduction, Content Tracker completes the processing by parsing the query parameters and performing various value substitutions for fields that are ultimately written to the `SctAccessLog`. For more detailed information about the `SctAccessLog` table and individual data fields, see "[Combined Output Table](#)" on page 8-12. The query parameter values are mapped to `SctAccessLog` fields as follows:

- `sct_dID` replaces the web beacon object's `dID`
- `sct_dDocName` replaces the web beacon object's `dDocName`

- `sct_uriStem` replaces the web beacon object's URI stem (everything preceding the '?')
- `sct_uriQuery` replaces the web beacon object's URI query portion (everything following the '?')
- `sct_Ext_n` is copied directly into the SctAccessLog Extended Field n

Example 8-5 Data Reduction Processing for Query Parameter Values

```
/idc/groups/public/documents/adacct/bcn_2.txt?sct_dDocName=WW_1_21&sct_dID=42&sct_Ext_1=WillowStreetServer&sct_Ext_2=SubscriptionTypeA
```

After data reduction processing, Content Tracker records this web beacon type request in the SctAccessLog table as an access to `WW_1_21` rather than to `bcn_2.txt`. Other data such as the username, time of access, client IP, etc., are derived from the HTTP request. Additionally, `WillowStreetServer` is copied into the `extField_1` column of the SctAccessLog table, and `SubscriptionTypeA` is copied into the `extField_2` column. (These last two field substitutions are optional and application dependent.)

8.4.4.6 General Implementation Considerations

To implement Content Tracker's web beacon feature, you will need to manually perform the following tasks:

1. Create the web beacon object.
2. Check it into Content Server.
3. Update the SctWebBeaconIDList.
4. Define the web beacon references.
5. Embed them into the cached content items and/or web sites that you want to track.

When implementing the web beacon feature, there are multiple challenges, limitations, and guidelines that you need to consider.

This section covers the following topics:

- ["Web Beacon Design Limitations"](#) on page 8-34
- ["Web Beacon Design Guidelines"](#) on page 8-35

8.4.4.6.1 Web Beacon Design Limitations Given the types of challenges that are involved in implementing the web beacon feature, the following limitations need to be considered:

- One of the challenges in implementing the web beacon feature involves determining the means by which the web beacon reference is attached to a tagged object. Also, there are situations where the requested object does not allow embedded references (for example, a PDF or Word document). In this case, the web beacon object must be requested directly from Content Server before the actual content item is requested.
- There are numerous situations in which the web beacon feature will not work such as with certain browser configurations. If the user has disabled cross-domain references in their browser, and both the web page and Content Server instance are in different domains, Then the web beacon object is never requested from Content Server and the user access is not counted.

For example:

- If the static web site is located in the `ABChost.XYZorg.com` domain,
 - And the Content Server (from which this web site was built and which stores the web beacon object) is in the `myhost.myorg.com` domain,
 - And a user has disabled cross-domain references but is accessing documents from the `ABChost.XYZorg.com` domain (thus forbidding the browser to access any link other than `ABChost.XYZorg.com`),
 - Then, when the user's browser encounters an embedded web beacon reference and requests the web beacon object from the Content Server instance in the `ABChost.XYZorg.com` domain, the request fails and the user's content item access from the `myhost.myorg.com` domain is not counted.
- The first time a managed content item is accessed via a reverse proxy server, it will be counted twice: once when the Content Server provides the item to the reverse proxy server, and a second time when the browser requests the web beacon object.
 - Depending on the specific configuration, it might be necessary to devise a method to prevent the reverse proxy server and external Site Studio from caching the web beacon object itself. Browsers also do caching. This situation would prevent Content Tracker from counting any relevant content accesses.

Tip: One way to avoid this situation would be to ensure each web beacon object request is unique. This could be done by appending a single-use query parameter to the web beacon reference that contains a random number. For example:

```
dDocName=vvvv_1_21&FoolTheProxyServer=12345654321
```

By changing the number on each request, you might fool the cache along with the web server and the browser and into thinking that the request is new.

8.4.4.6.2 Web Beacon Design Guidelines Given the types of challenges that are involved in implementing the web beacon feature, the following guidelines need to be considered:

- The `sct_dDocName` and `sct_dID` parameter values in the web beacon reference must resolve to an actual managed content item in the same Content Server instance that provides the requested web beacon object.
- Using the `ExtField` columns in the `SctAccessLog` table is optional and entirely application dependent.
- Use of `ExtField_10` is reserved for the web beacon object's `dDocName`. This allows report writers a way to determine which web beacon object was used to signal the access to the actual managed content item.
- Spelling and capitalization of the query parameter names must be exact.
- Embedded commas or spaces in the query parameter values are not allowed.
- Typically, the `dDocName` and `dID` of a managed object are included in the web beacon reference although to be considered a legitimate access request, it is not necessary to provide both. If any of the standard fields are missing, Content Tracker resolves the identification parameters as follows:
 - Given a `dID`, Content Tracker can determine the content item's `dDocName`.

- Given a dDocName, Content Tracker can determine the content item's dID with the following provision:

In this case, the dID will be the content item's most current revision. If the revision changes after the content item is cached, then the user will see the older version. However, Content Tracker counts this access request as a view of the most recent revision of the content item.
- Given a proper URI Stem, Content Tracker can determine the content item's dDocName but will assume the dID of the most recent revision.
- You must restart Content Server after you have made any changes to the web beacon list (SctWebBeaconIDList).
- Do not create a web beacon object that uses a file type or is located in a directory that Content Tracker is configured to disregard. Content Tracker's web server filter separates out file types and directories listed in the SctIgnoreFileType and SctIgnoreDirectories configuration variables. See "[Web Beacon Objects](#)" on page 8-30 and "[Format Structure for Web Beacon URL References](#)" on page 8-31.
- Content Tracker is unable to verify whether or not the cached content item was delivered.
- Content Tracker performs normal folding of static URL accesses. If a user repeatedly requests the same content item and makes no intervening requests for another document, then Content Tracker assumes that the consecutive requests are the same document. In this case, these access requests are considered to be all one access request.
- The query parameters can represent any managed object and need not necessarily be what the user is actually viewing.

8.4.4.7 Examples of Web Beacon Embedding

There are many different embedding methods to use when implementing the Content Server web beacon feature. Each technique has advantages and disadvantages and one may be more appropriate for a particular situation than another. Due to the differences in system configurations, there isn't a single technique that is optimal in all circumstances.

This section describes three techniques:

- [Embedded HTML Example](#)
- [Embedded Javascript Example](#)
- [Served Javascript Example](#)

Note: Code fragment files for all of the examples are available and included in Content Tracker's documentation directory. These examples are intended to demonstrate general approaches to tracking accesses to managed content. For your convenience, the code fragments are provided as a starting point. However, they may need to be adapted to work with your specific application and network topology.

All of the examples below use the same web beacon object: WebBeacon.bmp. This graphic file is checked into the Content Server instance IFHE.comcast.net/idc/ with a dDocName of wb_bmp. Typically, the web beacon object is a 1 x 1 pixel transparent image, but can actually be almost anything.

8.4.4.7.1 Embedded HTML Example The simplest, most direct use of a web beacon for tracking managed content access is to embed a reference to the beacon directly into the HTML source for the containing web page. When the requesting user's browser attempts to render the page, it will send a request to the Content Server instance where the web beacon object resides. The extra information appended to the beacon URL as a set of query parameters will be counted by Content Tracker as a reference to the web page, not the web beacon object.

In this example, the technique involves placing an image tag in the web page to be tracked. The `src` attribute of the image refers to the web beacon object (`wb_bmp`) which was checked into a Content Server instance named `IFHE.comcast.net/idc/`. When the user's browser loads the image from `IFHE.comcast.net/idc/`, the additional query information will be recorded, and ultimately interpreted as a reference to `dDocName BOPR`.

This approach is undoubtedly the simplest, but has the obvious disadvantage that the user's browser, and/or a reverse proxy server, might cache a copy of the web beacon object. As such, no additional requests will be posted directly to the Content Server instance `IFHE.comcast.net/idc/`. Furthermore, no additional accesses to any content tagged with this web beacon will be counted.

The HTML fragment for this method might be written as follows:

```
<!-- WebBeaconEmbeddedHtml.htm - Adjust the Web Beacon web location and managed
object identifiers in the img src attribute, then paste into your web page -->

```

8.4.4.7.2 Embedded Javascript Example The cached web beacon problem described in the [Embedded HTML Example](#) can be overcome by using Javascript instead of HTML. Using the embedded Javascript method requires two script tags:

- The `cs_callWebBeacon` function that issues the actual web beacon request.
- An unnamed block that assigns context values to certain Javascript variables, and then calls the `cs_callWebBeacon` function.

This method offers some advantages over Embedded HTML. The identifying information for the managed content object is defined in a list of variables which improves readability. Also, the web beacon request is made effectively unique by adding a random number to the pseudo query parameters.

However, there are also some disadvantages. There is more code to manage, the URL of the web beacon server is hardcoded in each web page, and the user's browser might not have Javascript enabled.

The Javascript fragment for this method might be written as follows:

```
// WebBeaconEmbeddedJavascript.js - Adjust the managed object and Web Beacon
descriptors,
and then paste this into your web page.
//
<script type="text/javascript" >

    var cs_obj_dID = " " ;
    var cs_obj_dDocName = " " ;
    var cs_obj_uriStem = " " ;
    var cs_extField_1 = " " ;
    var cs_extField_2 = " " ;
```

```
var cs_extField_3 = "" ;
var cs_extField_4 = "" ;
var cs_extField_5 = "" ;
var cs_extField_6 = "" ;
var cs_extField_7 = "" ;
var cs_extField_8 = "" ;
var cs_extField_9 = "" ;
var cs_beaconUrl = "" ;

function cs_void( ) { return ; }

function cs_callWebBeacon( ) {
    //
    var cs_imgSrc = "" ;
    var cs_inQry = false ;

    if ( cs_beaconUrl && cs_beaconUrl != "" ) {
        cs_imgSrc += cs_beaconUrl ;
    }

    if ( cs_obj_dID && cs_obj_dID != "" ) {
        if ( cs_inQry ) {
            cs_imgSrc += "&" ;
        } else {
            cs_imgSrc += "?" ;
            cs_inQry = true ;
        }
        cs_imgSrc += "sct_dID=" + cs_obj_dID ;
    }

    if ( cs_obj_dDocName && cs_obj_dDocName != "" ) {
        if ( cs_inQry ) {
            cs_imgSrc += "&" ;
        } else {
            cs_imgSrc += "?" ;
            cs_inQry = true ;
        }
        cs_imgSrc += "sct_dDocName=" + cs_obj_dDocName ;
    }

    if ( cs_obj_uriStem && cs_obj_uriStem != "" ) {
        if ( cs_inQry ) {
            cs_imgSrc += "&" ;
        } else {
            cs_imgSrc += "?" ;
            cs_inQry = true ;
        }
        cs_imgSrc += "sct_uriStem=" + cs_obj_uriStem ;
    }

    if ( cs_extField_1 && cs_extField_1 != "" ) {
        if ( cs_inQry ) {
            cs_imgSrc += "&" ;
        } else {
            cs_imgSrc += "?" ;
            cs_inQry = true ;
        }
        cs_imgSrc += "sct_Ext_1=" + cs_extField_1 ;
    }

    if ( cs_extField_2 && cs_extField_2 != "" ) {
```

```

        if ( cs_inQry ) {
            cs_imgSrc += "&" ;
        } else {
            cs_imgSrc += "?" ;
            cs_inQry = true ;
        }
        cs_imgSrc += "sct_Ext_2=" + cs_extField_2 ;
    }

<!-- and so on for the remaining extended fields -->

    if ( cs_inQry ) {
        cs_imgSrc += "&" ;
    } else {
        cs_imgSrc += "?" ;
        cs_inQry = true ;
    }

    var dc = Math.round( Math.random( ) * 2147483647 ) ;
    cs_imgSrc += "sct_defeatCache=" + dc ;

    var wbImg = new Image( 1, 1 ) ;
    wbImg.src = cs_imgSrc ;
    wbImg.onload = function( ) { cs_void( ) ; }

}

</script>

<script type="text/javascript">
    //
    var cs_obj_dID = "1" ;
    var cs_obj_dDocName = "BOPR" ;
    var cs_obj_uriStem =
"http://IFHE.comcast.net/idc/groups/public/documents/adacct/bopr.pdf" ;
    var cs_extField_1 = "Sample_Javascript_Beacon_Access" ;
    var cs_beaconUrl =
"http://IFHE.comcast.net/idc/groups/public/documents/adacct/wb_bmp.bmp" ;

    cs_callWebBeacon( ) ;

</script>

```

8.4.4.7.3 Served Javascript Example The hardcoded web beacon server problem described in the [Embedded Javascript Example](#) can be overcome by splitting the code into two fragments:

- The [Managed Code Fragment](#):

In this example, the managed code fragment contains the `cs_callWebBeacon` function. It can be checked in and managed by a Content Server instance, either the instance which manages the web beacon, or some other. The `src` attribute contained in the in-page fragment refers to the managed code fragment and causes it to be dynamically loaded into the web page.

- The [In-Page Code Fragment](#):

The in-page portion still consists of two `<script>` tags, but the first contains only a reference to the `cs_callWebBeacon` code instead of the code itself. The advantage for this is that changes to the `cs_callWebBeacon` function can be managed centrally instead of having to modify each and every tagged web page.

This solution admittedly incurs the additional network overhead of loading the managed code into the web page on the user's browser. However, the requirement for a web beacon assist to tracking implies that the network environment includes an efficient reverse proxy server, or other caching mechanism. The same cache that conceals managed object access will also minimize the impact of the code download.

Managed Code Fragment:

```
// WebBeaconServedJavascript_Checkin.js - Check this in to your Content Server,
then fixup
// the Javascript include src attribute in
WebBeaconManagedJavascriptIncludeSample.js
//
var cs_obj_dID = "" ;
var cs_obj_dDocName = "" ;
var cs_obj_uriStem = "" ;
var cs_extField_1 = "" ;
var cs_extField_2 = "" ;
var cs_extField_3 = "" ;
var cs_extField_4 = "" ;
var cs_extField_5 = "" ;
var cs_extField_6 = "" ;
var cs_extField_7 = "" ;
var cs_extField_8 = "" ;
var cs_extField_9 = "" ;
var cs_beaconUrl =
"http://IFHE.comcast.net/idc/groups/public/documents/adacct/wb_bmp.bmp" ;

function cs_void( ) { return ; }

function cs_callWebBeacon( ) {
    //
    var cs_imgSrc = "" ;
    var cs_inQry = false ;

    if ( cs_beaconUrl && cs_beaconUrl != "" ) {
        cs_imgSrc += cs_beaconUrl ;
    }

    if ( cs_obj_dID && cs_obj_dID != "" ) {
        if ( cs_inQry ) {
            cs_imgSrc += "&" ;
        } else {
            cs_imgSrc += "?" ;
            cs_inQry = true ;
        }
        cs_imgSrc += "sct_dID=" + cs_obj_dID ;
    }

    if ( cs_obj_dDocName && cs_obj_dDocName != "" ) {
        if ( cs_inQry ) {
            cs_imgSrc += "&" ;
        } else {
            cs_imgSrc += "?" ;
            cs_inQry = true ;
        }
        cs_imgSrc += "sct_dDocName=" + cs_obj_dDocName ;
    }
}
```

```

if ( cs_obj_uriStem && cs_obj_uriStem != "" ) {
    if ( cs_inQry ) {
        cs_imgSrc += "&" ;
    } else {
        cs_imgSrc += "?" ;
        cs_inQry = true ;
    }
    cs_imgSrc += "sct_uriStem=" + cs_obj_uriStem ;
}

if ( cs_extField_1 && cs_extField_1 != "" ) {
    if ( cs_inQry ) {
        cs_imgSrc += "&" ;
    } else {
        cs_imgSrc += "?" ;
        cs_inQry = true ;
    }
    cs_imgSrc += "sct_Ext_1=" + cs_extField_1 ;
}

if ( cs_extField_2 && cs_extField_2 != "" ) {
    if ( cs_inQry ) {
        cs_imgSrc += "&" ;
    } else {
        cs_imgSrc += "?" ;
        cs_inQry = true ;
    }
    cs_imgSrc += "sct_Ext_2=" + cs_extField_2 ;
}

<!-- and so on for the remaining extended fields -->

if ( cs_inQry ) {
    cs_imgSrc += "&" ;
} else {
    cs_imgSrc += "?" ;
    cs_inQry = true ;
}

var dc = Math.round( Math.random( ) * 2147483647 ) ;
cs_imgSrc += "sct_defeatCache=" + dc ;

var wbImg = new Image( 1, 1 ) ;
wbImg.src = cs_imgSrc ;
wbImg.onload = function( ) { cs_void( ) ; }

}

```

In-Page Code Fragment:

```

<script type="text/javascript"
src="http://IFHE.comcast.net/idc/groups/public/documents/adacct/wbmjcs.js" >
</script>

```

```

<script type="text/javascript">
//
var cs_obj_dID = "1" ;
var cs_obj_dDocName = "BOPR" ;
var cs_obj_uriStem =

```

```
"http://IFHE.comcast.net/idc/groups/public/documents/adacct/bopr.pdf" ;
  var cs_extField_1 = "Sample_Managed_Javascript_Beacon_Access" ;

  cs_callWebBeacon( ) ;

</script>
```

8.4.5 Using Content Tracker

This section provides information and task procedures about Content Tracker functions. This section covers the following topics:

- ["Changing the Variable Settings for the Performance Optimization Functions"](#) on page 8-42
- ["Accessing the Data Engine Control Center"](#) on page 8-43
- ["Enabling or Disabling Data Collection"](#) on page 8-43
- ["Running Data Reduction Manually"](#) on page 8-44
- ["Setting Data Reduction to Run Automatically"](#) on page 8-44
- ["Deleting Data Files in Any Cycle"](#) on page 8-45
- ["Deleting Data Files in 'Archive' Cycle"](#) on page 8-45
- ["Creating the Search Relevance Metadata Fields"](#) on page 8-45
- ["Enabling the Snapshot Function and the Activity Metrics Options"](#) on page 8-47
- ["Linking Activity Metrics Functions to Search Relevance Metadata Fields"](#) on page 8-47
- ["Setting a Checkin Time Value for the Last Access Metadata Field"](#) on page 8-48
- ["Editing the Snapshot Configuration"](#) on page 8-51
- ["Adding/Editing Service Entries"](#) on page 8-51
- ["Adding Field Map ResultSets and Linking Them to Service Entries"](#) on page 8-52
- ["Editing Field Map ResultSets"](#) on page 8-53
- ["Deleting Service Entries"](#) on page 8-54
- ["Deleting Field Map ResultSets"](#) on page 8-55
- ["Adding/Editing Web Beacon Object Names to the Web Beacon ID List"](#) on page 8-55

8.4.5.1 Changing the Variable Settings for the Performance Optimization Functions

You can change the values of the installation preference variables for the optimization functions using one of the following methods:

- ["Changing Installation Preference Variables using Content Manager Advanced"](#) on page 8-42
- ["Changing Installation Preference Variables using the config.cfg File"](#) on page 8-43

8.4.5.1.1 Changing Installation Preference Variables using Content Manager Advanced

1. Log in to Content Server as an administrator.
2. Select **Admin Server** from the Administration menu.

The Content Admin Server page is displayed.

3. Click the name of the Content Server instance whose security checks preference setting will be changed.
The Content Admin Server <*instance_name*> page is displayed.
4. Click **Component Manager Advanced**.
The advanced version of the Component Manager page is displayed.
5. In the Update Component configuration field, select **Content Tracker** from the list.
6. Click **Update**.
The Update Component Configuration page is displayed.
7. Select the installation preference variable that you want to update and enter the new setting.
8. Click **Update**.
Content Tracker Reports is successfully updated with the new setting and is effective immediately. You do not need to restart Content Server.

8.4.5.1.2 Changing Installation Preference Variables using the config.cfg File

1. In a text editor, open the config.cfg
IntradocDir/config/config.cfg
2. Scroll to locate the installation preference variable that you want to update and change the value.
3. Save and close the config.cfg file.
4. Restart Content Server to apply the changes.

8.4.5.2 Accessing the Data Engine Control Center

The Data Engine Control Center is used to enable, schedule, and monitor data collection and reduction.

To access the Data Engine Control Center:

1. Open the Content Tracker **Administration** page:
Administration tray, Content Tracker Administration.
2. Scroll down and click the **Data Engine Control Center** icon.
The Content Tracker Data Engine Control Center interface is displayed.

8.4.5.3 Enabling or Disabling Data Collection

When data collection is enabled, Content Tracker logs web traffic activity on the Content Server. By default, the Enable Data Collection check box is selected on the Collection tab of the Data Engine Control Center. Selecting this check box enables data collection. Clearing this check box disables data collection.

To enable or disable data collection:

1. Open the **Data Engine Control Center**, see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. On the Collection tab, select (to enable collection) or clear (to disable collection) the **Enable Data Collection** check box.
3. Click **OK**.

Note: After you click OK, do not immediately exit the applet. You must wait until the Updated Data Collection state confirmation message displays. Occasionally, this may take a few seconds. If you exit the applet before the confirmation message displays, the requested change(s) may not occur.

4. After the Updated Data Collection state confirmation message displays, click **OK**.
5. Restart the Content Server.

Note: Look carefully at the text above the check box to determine whether data collection is enabled or disabled.

When enabled, the text reads "Data collection is **enabled**..."

When disabled, the text reads "Data collection is **not enabled**..."

8.4.5.4 Running Data Reduction Manually

To manually reduce data:

1. Open the **Data Engine Control Center**, see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. On the Reduction tab, click (to highlight) the set of input data to reduce.
3. Click the **Reduce Data** button.

A confirmation dialog box is displayed.

4. Click **Yes** to reduce the data.

The Status will change from 'ready' to 'running,' and the Percent Done will display the progress of data reduction. When data reduction is complete, the time stamp will be displayed in When Finished, and the Cycle will display 'recent.'

Note: If you choose to reduce the current date's data, the data will be reduced, but the Cycle will continue to display the data set as 'new.'

8.4.5.5 Setting Data Reduction to Run Automatically

To set data reduction to run automatically:

1. Open the **Data Engine Control Center**, see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. On the Schedule tab, select the **Scheduling Enabled** check box.
3. Select check boxes for the days when data collection will occur.
4. Select the hour and minute when data collection will occur.
5. Click **OK**.

Note: After you click OK, do not immediately exit the applet. You must wait until the Updated reduction scheduling information confirmation message displays. Occasionally, this may take a few seconds. If you exit the applet before the confirmation message displays, the requested change(s) may not occur.

6. After the Updated reduction scheduling information confirmation message displays, click **OK**.
Data will be reduced automatically on the day(s) and time that you selected.

8.4.5.6 Deleting Data Files in Any Cycle

To delete data files in any cycle:

1. Open the **Data Engine Control Center** see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. On the Reduction tab, click (to highlight) the set of input data to delete.
3. Click the **Delete** button.
A confirmation dialog box is displayed.
4. Click **OK** to delete the data.
The selected data set is deleted, and is no longer displayed in the window

8.4.5.7 Deleting Data Files in 'Archive' Cycle

To delete data files in the archive cycle:

1. Open the **Data Engine Control Center** see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. On the Reduction tab, click the **Delete Archive** button.
A confirmation dialog box is displayed.
3. Click **OK** to delete the data.
All data sets in 'archive' cycle are deleted, and are no longer displayed in the window

8.4.5.8 Creating the Search Relevance Metadata Fields

Before you can implement the snapshot function, you must decide which custom metadata fields will be associated with each of the enabled activity metrics. Also, the custom metadata fields must already exist and must be of the correct type. Depending on which activity metrics you plan to enable, you must create one or more custom metadata fields using an applicable procedure.

This section covers the following topics:

- "[Creating the Custom Metadata Field for the Last Access Metric](#)" on page 8-45
- "[Creating the Custom Metadata Field for the Short and Long Access Metrics](#)" on page 8-46

8.4.5.8.1 Creating the Custom Metadata Field for the Last Access Metric To create custom metadata fields to assign to the last access field:

1. Open the Content Tracker **Administration** page:
Select the Administration tray, then Content Tracker **Administration**
2. Click the **Configuration Manager** icon.
The Configuration Manager interface is displayed.
3. On the Information Fields tab, click **Add**.
The Add Custom Info Field screen is displayed.

4. Enter the name of the metadata field to be assigned to the Last Access metric. For example, LastAccess.
5. Click **OK**.

The Add Custom Info Field screen is displayed.

6. Select **Date** from the Field Type menu.

Normally, you do not need to enter a value in the Default Value field. However, if you do not enter a value for this field and there is no specified default value, then the Last Access field is not populated until a content item has been checked in and a data reduction run. Some applications, however, need to have the Last Access field contain a valid value at all times. In this case, you will need to enter a value in the Default Value field that will ensure that the Last Access field is populated with the date and time of the content checkin. For more information, see ["Populating the Last Access Field Using the Default Value"](#) on page 8-48.

Field Type with a value of Date is the only required attribute for the last access custom metadata field. However, if you want the last access custom metadata field to be searchable, you must ensure that the Enable for Search Index check box is selected.

Indexing this custom metadata field is optional, although indexing makes searches on this field more efficient. Furthermore, indexing allows you to query the accumulated search relevance statistics and generate useful data. For example, you can create a list of content items ordered by their popularity, etc.

For more information about the advantages and disadvantages of indexing the search relevance metadata fields, see the ["Snapshot Tab"](#) on page A-158.

7. Click **OK**.

The custom metadata field is added to the Field Info list on the Information Fields tab.

8. Click **Update Database Design** to validate the current database and add the custom metadata field to the system.

8.4.5.8.2 Creating the Custom Metadata Field for the Short and Long Access Metrics To create custom metadata fields to assign to the short and long access fields:

1. Open the Content Tracker **Administration** page:

Select the Administration tray, then Content Tracker **Administration**

2. Click the **Configuration Manager** icon.

The Configuration Manager interface is displayed.

3. On the Information Fields tab, click **Add**.

The Add Custom Info Field screen is displayed.

4. Enter the name of the metadata field to be assigned to the Short or Long Access Count metric. For example, ShortAccess or LongAccess.

5. Click **OK**.

The Add Custom Info Field screen is displayed.

6. Select **Integer** from the Field Type menu.

Field Type with a value of Integer is the only required attribute for the Short and Long Access Count custom metadata field. However, if you want the Short and

Long Access Count custom metadata fields to be searchable, you must ensure that the Enable for Search Index check box is selected for both.

Indexing these custom metadata fields is optional, although indexing makes searched on these fields more efficient. Furthermore, indexing allows you to query the accumulated search relevance statistics and generate useful data. For example, you can create a list of content items ordered by their popularity, etc.

For more information about the advantages and disadvantages of indexing the search relevance metadata fields, see the ["Snapshot Tab"](#) on page A-158.

7. Click **OK**.

The custom metadata field is added to the Field Info list on the Information Fields tab.

8. Click **Update Database Design** to validate the current database and add the custom metadata field to the system.

8.4.5.9 Enabling the Snapshot Function and the Activity Metrics Options

By default, the snapshot function and activity metrics are disabled. To use these optional features, you must first enable the snapshot post-processing function which activates the activity metrics choices. Then, you can selectively enable the desired activity metrics and assign their preselected custom metadata fields.

To enable the snapshot function and activate the activity metrics:

1. Open the **Data Engine Control Center**, see ["Accessing the Data Engine Control Center"](#) on page 8-43.

2. Click the **Snapshot** tab.

3. Select the Enable Snapshot post-processing check box.

The snapshot function is enabled and the activity metrics options are activated.

4. Click **OK**.

A confirmation dialog box is displayed.

5. Click **OK**.

The snapshot state and Content Tracker's configuration file (sct.cfg) are updated.

To verify the snapshot function and activity metrics have been enabled, you can access the Content Tracker's sct.cfg file in the following directory:

```
<cs_root>/data/contenttracker/config/sct.cfg
```

Optionally, you can manually enable the snapshot function and activate the activity metrics options. For more detailed information about the specific snapshot configuration variables and how to manually edit them, see ["Configuration Variables"](#) on page 8-84 and ["Manually Setting Content Tracker Configuration Variables"](#) on page 8-87, respectively.

8.4.5.10 Linking Activity Metrics Functions to Search Relevance Metadata Fields

After the activity metrics options have been activated, they must be individually selected to enable them. Enabling the activity metrics also activates their corresponding custom metadata fields.

To enable the activity metrics and activate their corresponding custom metadata fields:

1. Open the **Data Engine Control Center**, see ["Accessing the Data Engine Control Center"](#) on page 8-43.

2. Click the **Snapshot** tab.

The snapshot function must be enabled; otherwise the activity metrics options are not activated. See ["Enabling the Snapshot Function and the Activity Metrics Options"](#) on page 8-47.

3. Select one or more of the activity metric check boxes.

Each selected activity metric is enabled and each corresponding custom metadata field is activated.

4. In the Field field, enter the internal name of the custom metadata field to be linked to the activity metric. For example, xLastAccess, xShortAccess, or xLongAccess.

5. For the Short and Long Access Counts, enter the applicable Interval amounts in days. For example, 7 days for the Short Access Count and 28 days for the Long Access Count.

6. Click **OK**.

A confirmation dialog box is displayed.

7. Click **OK**.

The snapshot state and Content Tracker's configuration file (sct.cfg) are updated.

Content Tracker performs minimal error checking on the activity metrics field names. Be aware that the fields on the Snapshot tab are case-sensitive. It is important that all field values are spelled and capitalized correctly. For more information about the specific Content Tracker error checks for the snapshot function, see the ["Snapshot Tab"](#) on page A-158.

To verify that the activity metrics are linked to the appropriate custom metadata fields, you can access the Content Tracker's sct.cfg file in the following directory:

```
<cs_root>/data/contenttracker/config/sct.cfg
```

Optionally, you can manually link the activity metrics to their respective custom metadata fields. For more detailed information about the specific activity metrics configuration variables and how to manually edit them, see ["Configuration Variables"](#) on page 8-84 and ["Manually Setting Content Tracker Configuration Variables"](#) on page 8-87, respectively.

8.4.5.11 Setting a Checkin Time Value for the Last Access Metadata Field

The Last Access Date field is normally updated by Content Tracker when a managed object is requested by a user and a data reduction run. Therefore, the Last Access field in Content Server's DocMeta database table may be empty (NULL) until the next data reduction is run.

However, some applications require that the date and time of content checkin be recorded immediately in the Last Access field. To accommodate this requirement, the Last Access field must be populated with an appropriate date and time value. Content Tracker provides several methods to populate the Last Access field.

This section covers the following topics:

- ["Populating the Last Access Field Using the Default Value"](#) on page 8-48
- ["Populating the Last Access Field Using the Autoload Option"](#) on page 8-49
- ["Populating the Last Access Field for Batchloads and Archives"](#) on page 8-50

8.4.5.11.1 Populating the Last Access Field Using the Default Value Normally, you do not need to enter a value in any field that has a Default value. However, if you do not

enter a value for the Last Access field, and there is no specified default value, then the field is not populated when a content item is checked in. The checkin date or most recent access date is only recorded once a data reduction has been run.

To support the requirements for particular applications, you can use the Autoload option to backfill the Last Access field for existing content, see "[Populating the Last Access Field Using the Autoload Option](#)" on page 8-49. For all future content item checkins, you can configure the Last Access custom metadata field by setting the Default Value field.

The value you enter must be a function or an expression that will cause the field to be populated with the date and time of content checkin. This ensures that the current date and time is automatically entered into the Last Access field.

To populate the Last Access field using the Default Value field:

1. Open the Content Tracker **Administration** page:
Select the Administration tray, then Content Tracker **Administration**
2. Click the **Configuration Manager** icon.
The Configuration Manager interface is displayed.
3. On the Information Fields tab, select the custom metadata field that you have linked to the Last Access metric and click **Edit**.
The Edit Custom Info Field screen is displayed.

Note: The Last Access custom metadata field must already exist. If not, you must create it and link it to the Last Access activity metric function. See "[Creating the Custom Metadata Field for the Last Access Metric](#)" on page 8-45.

4. In the Default Value field, enter an expression that will cause the field to be populated with the date and time of content checkin.
For example, you could specify a default value of `<$dateCurrent()$>` to cause the Last Access field to be populated with the current checkin date and time.
5. Click **OK**.
The Last Access custom metadata field is updated.
6. Backfill the Last Access field in for existing content, see "[Populating the Last Access Field Using the Autoload Option](#)" on page 8-49.

8.4.5.11.2 Populating the Last Access Field Using the Autoload Option The Autoload option on the Snapshot tab allows you to retroactively replace NULL values in the Last Access field with the current date and time. The only DocMeta records that are affected using the Autoload option are those where the Last Access metadata field is empty (NULL).

To populate the Last Access field using the Autoload option:

1. Open the **Data Engine Control Center**, see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. Click the **Snapshot** tab.

The snapshot function must be enabled; otherwise the activity metrics options are not activated. See ["Enabling the Snapshot Function and the Activity Metrics Options"](#) on page 8-47.

3. Select the **Enable Last Access updates** check box.
4. Link the Last Access metric to the applicable custom metadata field, see ["Linking Activity Metrics Functions to Search Relevance Metadata Fields"](#) on page 8-47.
5. Select the **Autoload** check box.
6. Click **OK**.

A confirmation dialog box is displayed and the current date and time are inserted into the applicable Last Access fields (those with NULL values) in Content Server's DocMeta database table.

Tip: By default, the Autoload query sets the Last Access metadata field to the current date and time. However, you may customize the query to set the Last Access field to dCreateDate, dReleaseDate, or any other time that meets the needs of your application. See ["Customizing the Autoload Option SQL Query"](#) on page 8-89.

8.4.5.11.3 Populating the Last Access Field for Batchloads and Archives To ensure proper retention of archived and batchloaded content, you must set the Last Access field date for the import/insert. Otherwise, the access date for these content items will be NULL, and retention based on this field will fail.

Note: The Last Access date can be used in conjunction with Retention Manager to maintain retention schedules. Ensuring that this field is set properly during batchloads and archives is important for the success of the retention. Please consider carefully what date is most reflective of when the content was last accessed. For example, an import of 1998 data is probably better tagged with that date than the date you perform the import.

The name of the Last Access field is based on the name you specified in Configuration Manager, see ["Creating the Custom Metadata Field for the Last Access Metric"](#) on page 8-45. In the case of Last Access, xLastAccess would be used in the import/insert. Refer to the Enable Last Access updates checkbox and corresponding data field on the ["Snapshot Tab"](#) on page A-158.

To populate the Last Access field using Content Server's Batch Loader:

1. Access the Batch Loader.
2. Create a file record that establishes an appropriate Last Access date. The following is an example of an applicable file record:

```
# This is a comment
Action=insert
dDocName=Sample1
dDocType=ADACCT
xLastAccess=5/1/1998
dDocTitle=Batch Load record insert example
dDocAuthor=sysadmin
dSecurityGroup=Public
primaryFile=links.doc
```


dInDate=8/15/2001
<<EOD>>

3. Run the Batch Loader to process the file record.

Note: Refer to the *Oracle Fusion Middleware System Administrator's Guide for Content Server* for more detailed information.

8.4.5.12 Editing the Snapshot Configuration

To modify the current snapshot activity metrics settings:

1. Open the **Data Engine Control Center**, see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. Click the **Snapshot** tab.

The snapshot function must be enabled; otherwise the activity metrics options are not activated. See "[Enabling the Snapshot Function and the Activity Metrics Options](#)" on page 8-47.

3. Make the necessary changes in the activity metrics fields.
4. Click **OK**.

A confirmation dialog box is displayed.

5. Click **OK**.

The snapshot state and Content Tracker's configuration file (sct.cfg) are updated.

Content Tracker performs minimal error checking on the activity metrics field names. Be aware that the fields on the Snapshot tab are case-sensitive. It is important that all field values are spelled and capitalized correctly. For more information about the specific Content Tracker error checks for the snapshot function, see the "[Snapshot Tab](#)" on page A-158.

To verify the modified values of the snapshot and activity metrics configuration variables, you can access the Content Tracker's sct.cfg file in the following directory:

```
<cs_root>/data/contenttracker/config/sct.cfg
```

Optionally, you can manually edit the configuration settings for the snapshot activity metrics. For more detailed information about the specific activity metrics configuration variables and how to manually edit them, see "[Configuration Variables](#)" on page 8-84 and "[Manually Setting Content Tracker Configuration Variables](#)" on page 8-87, respectively.

8.4.5.13 Adding/Editing Service Entries

To add or edit a service:

1. Open the **Data Engine Control Center**, see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. Click the **Services** tab.
3. Click **Add** to create a new service entry.

Or, select an existing service entry from the Service Name list and click **Edit**.

The Extended Service Tracking screen is displayed. The fields are empty if you are adding a new service entry.

If you are editing an existing service entry, the fields are populated with those values. In this case, the Service Name field is deactivated.

4. Enter or modify the applicable field values (except in the Field Map field).

If you want to link this service entry to a field map ResultSet, enter the applicable name in the Field Map field. Then, see the procedure for "[Adding Field Map ResultSets and Linking Them to Service Entries](#)" on page 8-52.

5. Click **OK**.

A confirmation dialog box is displayed.

6. Click **OK**.

The Extended Service Tracking screen closes and the Services tab on the Data Engine Control Center is displayed.

If you added a new service entry, it is included in the Services list. If you edited an existing service entry, the updated field values are included in the Services list.

The services state and Content Tracker's SctServiceFilter.hda are updated.

Content Tracker does not perform error checking (such as field type or spelling verification) for the extended services tracking function in the Data Engine Control Center. Errors are not generated until you perform a reduction. These fields are case-sensitive. Therefore, if you are adding new services or editing existing services, be careful to enter the proper service call names. Ensure that all field values are spelled and capitalized correctly.

To verify that the service entry's values are added to the SctServiceFilter.hda file or that the existing service entry's values are properly modified, you can access Content Tracker's SctServiceFilter.hda file in the following directory:

```
<cs_root>/data/contenttracker/config/SctServiceFilter.hda
```

Optionally, you can manually add or edit services. For more detailed information about service entries in the SctServiceFilter.hda file and how to manually edit them, see "[About the Service Call Configuration File](#)" on page 8-75 and "[Manually Editing the SctServiceFilter.hda File](#)" on page 8-82, respectively.

8.4.5.14 Adding Field Map ResultSets and Linking Them to Service Entries

To implement the extended service call tracking function, you need to link service entries to field map ResultSets in the SctServiceFilter.hda file.

To add a field map ResultSet and link it to a service entry:

1. Open the **Data Engine Control Center**, see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. Click the **Services** tab.
3. Select the desired service entry from the Service Name list.

If you need to add a new service entry, refer to the procedure for "[Adding/Editing Service Entries](#)" on page 8-51.

4. Click **Edit**.

The Extended Service Tracking screen is displayed and the fields are populated with the selected service entry's values. In this case, the Service Name field is deactivated. If necessary, you can edit this service entry's values now in addition to adding the field map ResultSet.

If this service is already linked to a field map ResultSet, the name is listed in the Field Map field and one or more data field, location, and table column set are listed in the Field Name, Field Location, and Column Name fields. If you want to edit or delete existing data field, location, and table column sets, see the procedure for ["Editing Field Map ResultSets"](#) on page 8-53.

5. If the selected service is already linked to a field map ResultSet, skip this step. However, if the selected service is not linked to a secondary ResultSet, the Field Map field is empty. Enter the name of the field map ResultSet.

6. Click **Add**.

The Field Map screen is displayed.

7. Enter the appropriate values in the fields.

8. Click **OK**.

The Field Map screen closes and the values are added to the Field Name and Column Name fields.

Note: If you need to add more than one data field, location and table column set, repeat Steps 6 through 8 as necessary.

9. Click **OK**.

A confirmation dialog box is displayed.

The Extended Service Tracking screen closes and the Services tab on the Data Engine Control Center is displayed.

The services state and Content Tracker's SctServiceFilter.hda file are updated.

10. Click **OK**.

Content Tracker does not perform error checking (such as field type or spelling verification) for the extended services tracking function in the Data Engine Control Center. Errors are not generated until you perform a reduction. These fields are case-sensitive. Therefore, if you are adding new field map ResultSets or editing existing field map ResultSets, be careful to enter the proper DataBinder field names and SctAccessLog table column names. Ensure that all field values are spelled and capitalized correctly.

To verify that the field map ResultSet values are added to the service call configuration file or that the values are properly modified, you can access the Content Tracker's SctServiceFilter.hda file in the following directory:

```
<cs_root>/data/contenttracker/config/SctServiceFilter.hda
```

Optionally, you can manually add field map ResultSets and manually link them to service entries. For more detailed information about service entries and field map ResultSets in the SctServiceFilter.hda file and how to manually edit them, see ["About the Service Call Configuration File"](#) on page 8-75 and ["Manually Editing the SctServiceFilter.hda File"](#) on page 8-82, respectively.

8.4.5.15 Editing Field Map ResultSets

To edit a field map ResultSet:

1. Open the **Data Engine Control Center**, see ["Accessing the Data Engine Control Center"](#) on page 8-43.

2. Click the **Services** tab.
3. Select the desired service entry from the Service Name list.
4. Click **Edit**.

The Extended Service Tracking screen is displayed and the fields are populated with the selected service entry's values. In this case, the Service Name field is deactivated. If necessary, you can also edit the other field values for this service entry in addition to editing the field map ResultSet.

5. To edit the Field Map ResultSet, you can either:
 - Add one or more data field, location, and table column sets. Refer to the procedure for "[Adding Field Map ResultSets and Linking Them to Service Entries](#)" on page 8-52.
 - Delete one or more data field, location, and table column sets as follows:
 - Select the field, location, and table column set to be deleted.
 - Click Delete
1. Click **OK**.

A confirmation dialog box is displayed.

2. Click **OK**.

The Extended Service Tracking screen closes and the Services tab on the Data Engine Control Center is displayed. The services state and Content Tracker's SctServiceFilter.hda file are updated.

Content Tracker does not perform error checking (such as field type or spelling verification) for the extended services tracking function in the Data Engine Control Center. Errors are not generated until you perform a reduction. These fields are case-sensitive. Therefore, if you are editing field map ResultSets by adding one or more data field, location, and table column sets, be careful to enter the proper data field names, location names, and SctAccessLog table column names. Ensure that all field values are spelled and capitalized correctly.

To verify the modified values of the data field, location, and table column sets in field map ResultSets, you can access the Content Tracker's SctServiceFilter.hda file in the following directory:

```
<cs_root>/data/contenttracker/config/SctServiceFilter.hda
```

Optionally, you can manually modify the values of the data field, location, and table column sets in field map ResultSets. For more detailed information about field map ResultSets in the SctServiceFilter.hda file and how to manually edit them, see "[About the Service Call Configuration File](#)" on page 8-75 and "[Manually Editing the SctServiceFilter.hda File](#)" on page 8-82, respectively.

8.4.5.16 Deleting Service Entries

To delete a service:

1. Open the **Data Engine Control Center**, see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. Click the **Services** tab.
3. In the Services list, select the service entry that you want to delete.
4. Click **Delete**.

You are asked to verify your request to delete service logging for this service entry.

5. Click **Yes**.

The selected service entry is deleted from the Services list and removed from the SctServiceFilter.hda file.

To verify that the service entry has been deleted, you can access the Content Tracker's SctServiceFilter.hda file in the following directory:

```
<cs_root>/data/contenttracker/config/SctServiceFilter.hda
```

Optionally, you can manually delete specific service entries. For more information, see "[Manually Editing the SctServiceFilter.hda File](#)" on page 8-82.

8.4.5.17 Deleting Field Map ResultSets

To delete a field map ResultSet:

1. Open the **Data Engine Control Center**, see "[Accessing the Data Engine Control Center](#)" on page 8-43.
2. Click the **Services** tab.
3. In the Services list, select the service entry that is linked to the field map ResultSet that you want to delete.
4. Click **Edit**.

The Extended Service Tracking screen is displayed and the fields are populated with the selected service entry's values.

5. Remove the field map ResultSet name from the Field Map field.
6. Select a data field, location, and table column set and click **Delete**.

The data field, location, and table column set is removed from the list. Repeat this step for each data field, location, and table column set (as necessary).

7. Click **OK**.

The field map ResultSet is removed from the SctServiceFilter.hda file. It is no longer linked to the service entry.

To verify that the field map ResultSet has been deleted, you can access the Content Tracker's SctServiceFilter.hda file in the following directory:

```
<cs_root>/data/contenttracker/config/SctServiceFilter.hda
```

Optionally, you can manually delete field map ResultSets. For more information, see "[Manually Editing the SctServiceFilter.hda File](#)" on page 8-82.

8.4.5.18 Adding/Editing Web Beacon Object Names to the Web Beacon ID List

To set or edit the preference setting for the list of web beacon objects:

1. Log in to Content Server as an administrator.
2. Select **Admin Server** from the Administration menu.

The Content Admin Server page is displayed.

3. Click the name of the Content Server instance whose web beacon preference setting will be changed.

The Content Admin Server *<instance_name>* page is displayed.

4. Click **Component Manager**.
The Component Manager page is displayed.
5. In the Update Component configuration field, select **Content Tracker** from the list.
6. Click **Update**.
The Update Component Configuration page is displayed.
7. In the SctWebBeaconIDList preference field, enter the applicable web beacon object dDocNames separated by commas.
8. Click **Update**.
9. Restart Content Server to apply the changes.

8.5 Report Generation

Content Tracker Reports uses the captured and reduced data to generate reports that outline the usage history of particular pieces of content. You can use the pre-defined reports that are provided or create custom queries for the information to be tracked. Optionally, you can use any external commercial reporting tool. See "[External Report Generator](#)" on page 8-61.

Note: By default, Content Tracker is configured for maximum performance using several optimization functions (see "[Performance Optimization Functions](#)" on page 8-1). As such, Content Tracker collects and records only content access event data. This excludes information gathering on non-content access events like searches as well as the collection and synthesis of user profile summaries.

Because non-content event data is not gathered, various pre-defined report options are not displayed on the Content Tracker Report Generator main page. However, all of the pre-defined report options can be available if you reconfigure Content Tracker. This is done by changing the settings of the optimization functions (see "[Changing the Variable Settings for the Performance Optimization Functions](#)" on page 8-42).

Note: The user reports are only visible if the Content Access Only operating mode is disabled. See "[Performance Optimization Functions](#)" on page 8-1.

Reports can be derived from a variety of criteria, including specific users, groups of users, and any set of content that can be defined by a query or group of metadata values. Based on the variables in the system (such as number of users, amount of content, metadata count, etc.), Content Tracker Reports enables hundreds of key metrics to be included in reports. Specialized reports enable you to understand and disclose which content is most relevant to users.

This section covers the following topics:

- "[Oracle and DB2 Case Sensitivity](#)" on page 8-57
- "[Access Control Lists and Content Tracker Reports Secure Mode](#)" on page 8-57
- "[Pre-Defined Reports](#)" on page 8-58

- ["Custom Reports"](#) on page 8-60
- ["External Report Generator"](#) on page 8-61
- ["User Authentication/Authorization and Auditing"](#) on page 8-62
- ["Site Studio Web Site Activity Reporting"](#) on page 8-62
- ["Security Checks and Query Results"](#) on page 8-63
- ["Using Content Tracker Reports"](#) on page 8-69

8.5.1 Oracle and DB2 Case Sensitivity

If Oracle or DB2 is used as the Content Server database, metadata values are case sensitive and care must be used when entering the content metadata values in the applicable query report criteria. As a result, depending on how a value is entered in the corresponding field, Content Tracker Reports may not return all possible matching files.

With either an Oracle or DB2 Content Server database, values must be entered exactly as they are entered in the Content Server. Therefore, depending on the lettering structure of the values in the Content Server, the values entered in the query metadata fields will need to be entered in all lowercase letters, all uppercase letters or mixed-case letters. Otherwise, Content Tracker Reports will not return all of the matching files.

For example, if the content type in the Oracle or DB2 Content Server database is *AdAcc* but the user enters it in the query field as *adacc*, *ADACC*, or *Adacc*, Content Tracker Reports will not return any results. In this case, the content type metadata value must be entered using mixed-case letters. This is true for all of the metadata fields in each of the pre-defined query reports.

8.5.2 Access Control Lists and Content Tracker Reports Secure Mode

The security checks preference variable (`SctrEnableSecurityChecks`) is set when you install the Content Tracker Reports component. Essentially, this preference variable enables you to select one of two security modes: secure and non-secure. The security checks preference provides the option to employ individual user role and account information to restrict the visibility of content item information in report results.

This means that you control what content items (and, subsequently, the metadata) that users can see in their generated reports. Ideally, users should not be able to see anything through Content Tracker Reports that they couldn't find via a Content Server search. Therefore, if you select the secure mode, the information in any generated report will be filtered based on the user's role and account privileges.

However, if you have enabled Access Control Lists (ACLs) on your Content Server instance, the secure mode option in Content Tracker Reports does not work. During installation, you must leave the security checks preference check box blank. This means that on an ACL-based system, the secure mode must be disabled. In this case, it is possible for users other than a system administrator to see information about content items that they would not otherwise be authorized to access and view.

Note: For more detailed information about the security checks installation preference and how it will affect the report queries and report results, see ["Security Checks and Query Results"](#) on page 8-63.

8.5.3 Pre-Defined Reports

Content Tracker Reports provides many pre-defined report options that you can use to generate reports for the most commonly requested topics.

This section covers the following topics:

- ["Default Report Format"](#) on page 8-58
- ["Content Dashboard Feature"](#) on page 8-59
- ["Drill Down Report Feature"](#) on page 8-59

8.5.3.1 Default Report Format

Each report produced using the Content Tracker Report Generator main page has the same general format and visual layout. The following is the Top Content Items report that is selected by default when the Content Tracker Report Generator main page is accessed. The information provided by the reports is extracted from the reduced data in the SctAccessLog database table and other Content Server database tables, as necessary.

Only users that actually request and open content item are included in the Content Tracker Report Generator's compiled results. The opened content item can be the web location file (the absolute path to the content item), an HTML version (by using Dynamic Converter), or the actual native file. Users that open only the Content Information page are not included in the tracked data.

There is generally a one-day delay from the time that a user accesses a content item until that information is included in the Content Tracker Report Generator's access history results. The information must first be accumulated by Content Tracker and then undergo a data reduction cycle. Thus, the content item access history results are derived from the reduced data in the SctAccessLog and other Content Server database tables. Manually reducing the data immediately updates the database tables and, subsequently, the generated query reports will also display the updated information. For more information about the reduction process, see the ["Reduction Tab"](#) on page A-156.

<i>Content Tracker Report</i>				
Report Name: Top Content Items				
Dates: 12/25/2005 to 1/25/2006				
Doc Name	Doc Title	Accesses	Doc Type	Actions
0001	ladybugs	8	ADACCT	i
0008	all strings	3	ADACCT	i
Printer-friendly Version				

Field	Description
Report Name field	The name of the selected query report.
Dates field	The dates entered in the Start Date and End Date fields. If you did not enter specific dates, the default dates are used for the query.
Results table columns	Provide the relevant information for the selected report.
Printer-friendly Version link	Opens a new browser window and displays the report without the navigation trays.

8.5.3.2 Content Dashboard Feature

When a generated query report contains an active link to a specific content item, clicking the link displays the corresponding Content Dashboard. The content dashboard in the following screen capture shows that two versions of a particular content item were each accessed three times. In this view, the revision access results are shown individually.

[Content Access Report](#) [Content Dashboard](#)

Content Access Details for dDocName: 0012

[\[Versions Separated\]](#) [\[All Versions Together\]](#)

Title	Author	Revision	Revision Date	Accesses	Users
E-Search Administration Guide	sysadmin	3	12/14/04 10:28 AM	3	1
E-Search Administration Guide	sysadmin	2	11/22/04 1:16 PM	3	1

[Printer-friendly Version](#)

If you click the All Versions Together link on the Content Dashboard, the access results for both versions are combined.

[Content Access Report](#) [Content Dashboard](#)

Content Access Details for dDocName: 0012

[\[Versions Separated\]](#) [\[All Versions Together\]](#)

Title	Author	Last Rev Date	Accesses	Users
E-Search Administration Guide	sysadmin	12/14/04 10:28 AM	6	1

[Printer-friendly Version](#)

8.5.3.3 Drill Down Report Feature

There are various levels of report results that are generated for each pre-defined report. Depending on the search criteria you enter on the Content Tracker Report Generator main page, the results are filtered accordingly. The top level reports are summary reports and provide very general information. You can use the links on the top level reports to drill down to more specific information.

Content Tracker Report
 Report Name: **Top Content Items by Application Type**
 Dates: 12/01/05 to 12/25/05

Application Type	Accesses
application/msword	28
Application/bmp	10
application/vnd.ms-excel	7
Application/zip	
Application/pdf	
application/vnd.ms-powerp	
Application/fm	
Application/vsd	

Top Content Items by Application Type: Application/bmp
 Dates: 12/01/05 to 12/25/05

Doc Name	Doc Title	Accesses	Doc Type	Actions
0001	ladybugs	6	ADACCT	(i)
0039	paint links	2	ADACCT	(i)
0040				

Content Access Details for dDocName: 0001
 Dates: 12/01/05 to 12/25/05

[Versions Separated] [All Versions Together]

Title	Author	Revision	Revision D	Accesses	Users
ladybugs	sysadmin	2	12/19/05 2:	6	1

Accesses by Day for dID: 2
 Dates: 12/01/05 to 12/25/05

Day	Accesses	User Count
12/22/05	3	1
12/21/05	1	1
12/20/05	2	1

8.5.4 Custom Reports

In addition to the sample reports provided with Content Tracker Reports, you also have the option to create custom queries to track information. However, before you begin creating your custom report query, you should be aware of some issues that may affect how you design your query.

This section covers the following topics:

- "Custom Report Queries and Oracle" on page 8-60
- "Custom Report Queries and Extended Service Tracking" on page 8-61
- "Custom Report Query Display Results" on page 8-61

8.5.4.1 Custom Report Queries and Oracle

If you are using Oracle and aliases to display the column names in the generated report, you must add the aliases to the following file:

/shared/config/resources/upper_clmns_map.htm

Example:

If your column headers are:

- Name
- Access_Date_GMT

Then, you must enter the following lines to the upper_clmns_map.htm file:

```
<tr>
<td>NAME</td>
<td>Name</td>
</tr>
<tr>
<td>ACCESS_DATE_GMT</td>
<td>Access_Date_GMT</td>
</tr>
```

8.5.4.2 Custom Report Queries and Extended Service Tracking

If you are using the extended service tracking function, you must be aware of what data values are written to specific columns in the SctAccessLog table before designing your SQL queries. In particular, you must be aware that the name of the service will always be logged to the sc_scs_idcService column. Therefore, you should include it as a qualifier in any query that uses the contents of the extended fields.

For more information about the extended service tracking function, see "[About the Service Call Configuration File](#)" on page 8-75 and the "[Services Tab](#)" on page A-161.

8.5.4.3 Custom Report Query Display Results

After you have successfully added the custom report query to the report query file, you can use it and view the resulting:

Figure 8–1 Custom Report Link



Figure 8–2 Generated Custom Report

Content Access Report

Report Name: **Deanna's First Report**
Dates: **01/01/1996 to 01/01/2049**

dName	dFullName	dEmail	dPas:	dPassv	dUserT:	dUserAu'	dUserC	dUser:	dUserS
sysadmin	System Administrator			idc		LOCAL			0
user1	Contributor			idc		LOCAL			0

[Printer-friendly Version](#)

Figure 8–3 Drill-Down Report

Content Access Report

Deanna's First Report: **sysadmin**
Dates: **01/01/1996 to 01/01/2049**

Doc Name	Doc Title	Access Count	Doc Type	Actions
0001	Admin Guide 6.1	1	ADACCT	i
0002	Provider Info	1	ADENG	i
0011	Content Categorizer Administration Guide	1	ADACCT	i

[Printer-friendly Version](#)

8.5.5 External Report Generator

Commercial report generation tools can be used to produce basic text reports or more sophisticated graphics such as bar graphs or pie charts from the data collected by Content Tracker.

Note: This guide assumes that users have a comprehensive working knowledge of or competent familiarity with the external reporting tool they are using to create custom reports. For this reason, this section is intentionally written to provide only very basic guidelines that can be applicable to most commercially available reporting products.

8.5.6 User Authentication/Authorization and Auditing

Content Tracker Reports provides an auditing feature that enables you to monitor unsuccessful attempts to access the system or permission-protected content items. Two reports are available that can help you analyze attempted security breaches that include failed user logons and unsuccessful attempts to access secure content items. This information is essential to safeguard system and content security as well as to maintain proper maintain audit trails and records.

The available auditing reports include:

- **Authorization Failures by User**

This report provides access authorization denial information that includes user names and their IP addresses. Although these users have system access privileges, their role/account memberships may restrict them from accessing particular content items (such as access to payroll content).

- **Login Failures**

This report provides login/authentication failure information that includes user names and their IP addresses. The logged data does not distinguish between external, internal, and global users because, without a successful login, it is impossible to differentiate user types.

8.5.7 Site Studio Web Site Activity Reporting

If you are using Site Studio, then Content Tracker is automatically configured to track Site Studio activity. Content Tracker Reports uses the logged data to generate the pre-defined reports that summarize the Web site access results.

This section covers the following topics:

- ["Main Page Site Studio Report Links"](#) on page 8-62
- ["Site Studio Pre-Defined Reports"](#) on page 8-62

8.5.7.1 Main Page Site Studio Report Links

The Site Studio-specific Web access reports are included on the Content Tracker Report Generator main page if you have installed Site Studio.



8.5.7.2 Site Studio Pre-Defined Reports

The Site Studio pre-defined reports use the default Content Tracker Reports formatting and provide drill-down report capabilities. The top level reports for both are summary reports that use Site ID and Accesses as their general criteria. The drill-down reports provide the relevant statistics.

- **Web Site Content Accesses**

This report is ID based at the top level and in subsequent drill-down reports, the results are listed by Content ID and Relative URL. The information shows what URLs are being used to access a Web site. However, there are cases where many different URLs will actually display the same page. Therefore, the results of this report also provide the total number of hits on the nodes, regardless of how the user got there.

Content Tracker Report	
Report Name: Web Site Content Accesses by Site ID Dates: 2/11/2005 to 2/11/2006	
Site ID	Accesses
TrackerTests	10
75releaseASPTtest	5
75HcspTestSite	2
Printer-friendly Version	
Web Site Content Accesses for Site ID: TrackerTests Dates: 2/11/2005 to 2/11/2006	
Content ID	Accesses
ProductWidget1Data	5
ProductWidget2Data	
ProductWidget3Data	
Web Site Content Accesses to Content ID: ProductWidget1Data Dates: 2/11/2005 to 2/11/2006	
Relative URL	Accesses
/Products/ProductWidget1Data	5

- **Web Site Accesses by URL**

This report provides summaries of the Web site relative URLs and the relevant activity sums.

Content Tracker Report	
Report Name: Web Site Accesses by URL Dates: 2/11/2005 to 2/11/2006	
Site ID	Accesses
TrackerTests	81
75releaseASPTtest	9
75HcspTestSite	8
	3
Printer-friendly Version	
Web Site Accesses by URL for Site ID: TrackerTests Dates: 2/11/2005 to 2/11/2006	
Relative URL	Accesses
/Products/index.htm	30
/Products/ProductWidget1Data	15
/index.htm	8
/Products/ProductWidget2Data	6
/Products/ProductWidget3Data	6
/Services/index.htm	6
/TrackerReportsPage/index.htm	6
/AboutUs/index.htm	4

8.5.8 Security Checks and Query Results

During the installation process for Content Tracker Reports, you have the option to employ individual user role and account information to restrict the visibility of content item information in report results. This means that you control what content items (and, subsequently, the metadata) that users can see in their generated reports. Ideally, users should not be able to see anything through Content Tracker Reports that they couldn't find via a Content Server search.

Caution: If you have enabled Access Control Lists (ACLs) on your Content Server instance, the secure mode option in Content Tracker Reports does not work. For more information, see "[Access Control Lists and Content Tracker Reports Secure Mode](#)" on page 8-57.

This section covers the following topics:

- "[Security Checks Preference Variable](#)" on page 8-64
- "[Report Queries and Security Modes](#)" on page 8-65
- "[Security Mode Selection](#)" on page 8-67
- "[Customization for Report Query Security](#)" on page 8-68

8.5.8.1 Security Checks Preference Variable

The security checks preference variable (SctrEnableSecurityChecks) is set when you install the Content Tracker Reports component. This preference variable enables you to select one of two security modes: secure and non-secure. The secure mode takes into account which user is running the report queries and the non-secure mode does not.

Note: During installation, you decide which mode is used by selecting the security checks checkbox or leaving it blank. After installation, you also have the option to change the setting using the Component Manager, see "[Changing the Security Checks Preference Setting](#)" on page 8-72.

This section covers the following topics:

- "[Values for the Security Checks Preference Variable](#)" on page 8-64
- "[Security Mode Examples](#)" on page 8-65

8.5.8.1.1 Values for the Security Checks Preference Variable The values for the security checks preference variable include:

- `SctrEnableSecurityChecks=True` (selected checkbox) enables the security checks installation preference and configures Content Tracker Reports to operate in secure mode.

In secure mode, the same security criteria (role and account qualifications) that are used to limit Content Server search results are also applied to the Content Tracker Report Generator's queries and the generated reports. Thus, it is possible that two different users running the Top Content Items report may see different results. See the secure mode example in the section of "[Security Mode Examples](#)" on page 8-65.

- `SctrEnableSecurityChecks=False` (blank checkbox) disables the security checks installation preference and configures Content Tracker Reports to operate in non-secure mode. This is the default setting.

In non-secure mode, the additional role and account criteria used to restrict Content Server search results are not applied to Content Tracker Report Generator's queries and the generated reports. Thus, it is possible for a user other than a system administrator to see information about content items that they would not be authorized to access and view. See the non-secure mode example in the section of "[Security Mode Examples](#)" on page 8-65.

8.5.8.1.2 Security Mode Examples A user might have admin, contributor, guest, and sysmanager privileges (a semi-admin user) but does not have the proper role/account membership to see a particular content item (such as the payroll report). The assigned privileges allow this user to access the Content Server Admin page, and therefore, the Content Tracker Report Generator main page. However, when this user performs a standard search in Content Server, the results page would not reveal that the payroll report exists.

If the security checks preference variable is enabled, Content Tracker Reports enforces the same role/account membership checks. Then, depending on the user requesting a specific report, the role/account matching activity determines what content item usage data is included.

As demonstrated in the following examples, the report results generated for a specific user (the semi-admin user described above) are contingent upon whether the preference variable is enabled or not.

- **Secure mode example:**

When the security checks preference is enabled, Content Tracker Reports is running in secure mode and checks for role/account matches. In this case, the semi-admin user is not entitled to retrieve and view confidential data. Due to the restrictions associated with this user's role/account privileges, the payroll content item remains completely invisible. The data is not included in report results and the user is unaware of its existence.

- **Non-secure mode example:**

When the security checks preference is disabled, Content Tracker Reports is running in non-secure mode and does not check for role/account matches. In this case, although the semi-admin user is not entitled to access or view the payroll report, some confidential information associated with the payroll content item can nevertheless be retrieved.

At the very least, the user can discover the payroll report's existence and view some of its metadata. The danger in this situation depends on what kind of information the metadata contains. In some cases, even knowing the content item exists could be a serious breach of security.

Note: This kind of security breach is not limited to semi-admin users. For example, a non-privileged user (that is, someone not ordinarily authorized to view a particular content item on a search results page) might gain access to the Content Tracker Report Generator main page. This could occur either by reaching the Admin page or by guessing a URL. In this case, the user would see a report containing some of the metadata describing the prohibited content item.

8.5.8.2 Report Queries and Security Modes

The contenttrackerreports_query.htm file contains all the Content Tracker Report Generator's queries that produce the pre-defined and custom reports. To support non-secure and secure modes, this file contains two sets of queries. One set takes into account which user is running the query (secure mode) and the other set does not (non-secure mode). The security checks preference setting determines which set of queries is used, see "[Security Checks Preference Variable](#)" on page 8-64.

Note: For localization support, the word "document" was changed to "content item" in the pre-defined report names. However, the corresponding report queries still include an abbreviation for the word document (doc). The report query names have not been changed in the contenttrackerreports_query.htm file.

For example, the "Top Content Items" report is one of the pre-defined reports listed on the Content Tracker Report Generator main page. The corresponding report queries in the contenttrackerreports_query.htm file use the pre-existing naming conventions:

qSctrTopDocs (non-secure version)

qSctrTopDocs_SEC (secure version)

This section covers the following topics:

- ["Pre-Defined Reports and Security Modes"](#) on page 8-66
- ["Custom Reports and Security Modes"](#) on page 8-66

8.5.8.2.1 Pre-Defined Reports and Security Modes Almost all the pre-defined report queries have both secure and non-secure forms included in the contenttrackerreports_query.htm file. Generally, if the search results of a query can be affected by user role and account privileges, then secure variants of the non-secure queries are included. And, if the security checks preference variable is enabled, then the secure forms of queries take precedence and are executed instead of the corresponding non-secure queries.

It is not possible to selectively enable or disable the security checks preference variable for individual report queries. However, it is possible to manage secure and non-secure queries by customizing the contenttrackerreports_query.htm file. In effect, you can disable security checks (account matching) for a particular query by deleting or renaming the secure form of the query. Thus, if the security checks preference variable is enabled, but a secure form of a given query is not found in the contenttrackerreports_query.htm file, then the non-secure form of the query is used to generate the report.

For more information about using security checks for a particular pre-defined query, see ["Enabling/Disabling Security Checks for Report Queries"](#) on page 8-73. For more information about collectively enabling or disabling security checks for all report queries, see ["Changing the Security Checks Preference Setting"](#) on page 8-72.

8.5.8.2.2 Custom Reports and Security Modes In addition to the pre-defined reports, you can also create custom reports that are based on search queries tailored to your particular needs. In addition to creating custom reports, you can also selectively implement security checks for them. That is, if you want security checks performed for your new custom report, then you can include both the non-secure and secure forms of the query in the contenttrackerreports_query.htm file.

For example, you can add a custom report with both query forms. If the non-secure query name is qMyTopTwenty, then the secure query name would be qMyTopTwenty_SEC. If the security checks preference variable is enabled, the report is generated using the secure query (qMyTopTwenty_SEC). If the security checks preference variable is not enabled, the report is generated using the non-secure query (qMyTopTwenty).

Note: The secure form of a custom query should follow the specific pattern of the existing secure queries in the contenttrackerreports_query.htm file. For more information, see "[Creating Secure Report Queries](#)" on page 8-73.

For more information about using security checks for a particular custom query, see "[Enabling/Disabling Security Checks for Report Queries](#)" on page 8-73. For more information about collectively enabling or disabling security checks for all report queries, see "[Changing the Security Checks Preference Setting](#)" on page 8-72.

8.5.8.3 Security Mode Selection

To generate a requested report, Content Tracker Reports must select and execute the applicable non-secure or secure query.

This section covers the following topics:

- "[Query Type Selection Process](#)" on page 8-67
- "[Report Query Selection Example](#)" on page 8-68

8.5.8.3.1 Query Type Selection Process Content Tracker Reports chooses a report query based on the following process:

- When a user submits a report request, the name of that report query is fed to a dedicated Content Tracker Reports service.
- The Content Tracker Reports service enforces the security checks setting as follows:
 - **If the security checks preference is disabled:**
Content Tracker Reports is running in non-secure mode and does not perform role/account matching (user role and account privilege verification). The Content Tracker Reports service searches for the non-secure version of the query and uses it to generate the requested report. It is irrelevant whether there is a secure version of the report query.

In non-secure mode, only non-secure queries are used to generate reports. As a result, all users see the same report results regardless of their individual role and account memberships.

- **If the security checks preference is enabled:**

Content Tracker Reports is running in secure mode and performs role/account matching (user role and account privilege verification).

To begin processing:

The Content Tracker Reports service appends the "_SEC" suffix to the submitted query name and searches the contenttrackerreports_query.htm file for this variant of the requested query.

During the search:

- * If the secure form of the query is found, then it is used to generate the requested report.

This means that the security checks to enforce role/account matching are performed and the query results are limited by the role and account privileges of the user requesting the report. Accordingly, different users may see different data results.

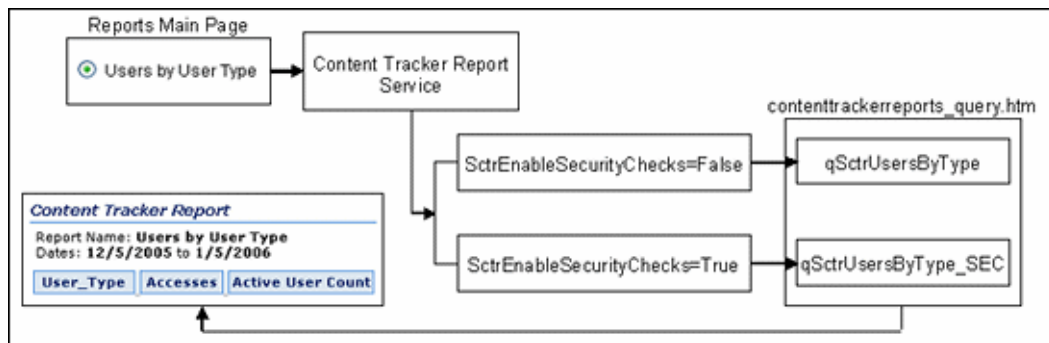
- * If the secure form of the query is not found, then the non-secure variant is used.

This actually produces the same result as if the security checks preference was disabled. This means, role/account permissions are not authenticated and the content item data is not filtered. Consequently, the results included in reports are identical for all users. It is possible for users without proper permissions to view confidential information.

8.5.8.3.2 Report Query Selection Example

When a user requests the User Type report:

1. The report query name (qSctrUsersByType) is passed to the Content Tracker Reports service.
2. The Content Tracker Reports service evaluates the request based on the security checks preference variable:
 - a. If security checks are disabled (set to false), then the service finds the qSctrUsersByType query in the contenttrackerreports_query.htm file.
 - b. If security checks are enabled (set to true), then the service adds a security suffix to the query name (qSctrUsersByType_SEC) and searches for this variant in the contenttrackerreports_query.htm file.
3. Depending on the security checks status, Content Tracker Reports uses the applicable query to generate the Users by User Type report.



8.5.8.4 Customization for Report Query Security

In secure mode, Content Tracker Reports always gives priority to the secure forms of queries. This means that if a secure form of a query is found in the contenttrackerreports_query.htm file, then it is used to generate the report instead of the corresponding non-secure query.

It is not possible to selectively enable or disable the security checks preference variable for individual report queries. However, it is possible to manage secure and non-secure queries by customizing the contenttrackerreports_query.htm file. Depending on your security requirements for report data, you may optionally want to customize the report query file.

Customizing the report query file involves:

- Selectively enabling or disabling security checks (account matching) for specific report queries.
- Creating one or more non-secure custom report queries and, depending on the security requirements of the information, selectively including the corresponding secure version.

8.5.9 Using Content Tracker Reports

This section provides information and task procedures about Content Tracker Reports functions.

This section covers the following topics:

- ["Generating Reports"](#) on page 8-69
- ["Accessing Drill Down Reports"](#) on page 8-69
- ["Accessing Reports from the Information Page"](#) on page 8-69
- ["Viewing Access Results by Revision"](#) on page 8-70
- ["Viewing Access Results for All Versions Combined"](#) on page 8-70
- ["Creating Custom Report Queries"](#) on page 8-70
- ["Changing the Security Checks Preference Setting"](#) on page 8-72
- ["Enabling/Disabling Security Checks for Report Queries"](#) on page 8-73
- ["Creating Secure Report Queries"](#) on page 8-73
- ["Using an External Report Generator"](#) on page 8-74

8.5.9.1 Generating Reports

To generate a pre-defined or custom report:

1. Open the Content Tracker Report Generator main page by clicking the **Content Tracker Reports** link in the Administration tray.
2. Select the radio button of the desired report type.
3. Enter any desired search and filtering criteria in the applicable fields.
4. Click **Submit**.

The selected report type is displayed.

8.5.9.2 Accessing Drill Down Reports

To access one or more drill down reports:

1. Generate a pre-defined or custom report. See ["Generating Reports"](#) on page 8-69.
2. After generating a pre-defined report, certain line item results contain an active drill down report link. Click on the desired link.

The selected drill-down report is displayed.

Note: Some reports contain multiple levels of drill down reports. For example, the Top Content Items report contains a DocName drill down report link. Clicking this link generates another report that displays the applicable content access details for the selected content item. In this report, two additional drill down reports are available: one for Accesses and another for Users.

8.5.9.3 Accessing Reports from the Information Page

The Access History Report for any content item can be generated from the Information page of that content item as follows:

1. Search for a content item and click the associated Info icon.

The Content Information page is displayed.

2. Select **View Access History Report** from the Global Actions list.

The most current Content Access Report for the content item is displayed.

3. On the Content Access Report, click the live **Accesses** link.

The most current Accesses by Day report for the content item is displayed.

4. On the Content Access Report, click the live **Users** link.

The most current Accesses by User report for the content item is displayed.

8.5.9.4 Viewing Access Results by Revision

By default, the access results for multiple versions of a single content item are displayed individually on the Content Dashboard. To see the separated access results view of the Content Dashboard report:

1. Generate a content item-based query report from the Content Tracker Report Generator main page. See "[Generating Reports](#)" on page 8-69. For example, select the Top Content option on the [Content Tracker Report Generator Main Page](#) to generate the applicable report.
2. Select a content item from the results report and click the content identification number listed in the DocName column.

The Content Dashboard for the selected content item is displayed. By default, this view shows the access results for each revision of the selected content item that was accessed. For more information, see "[Content Dashboard Feature](#)" on page 8-59.

8.5.9.5 Viewing Access Results for All Versions Combined

To see the combined access results view of the content dashboard report:

1. Generate a content item-based query report from the Content Tracker Report Generator main page. See "[Generating Reports](#)" on page 8-69. For example, select the Top Content option on the [Content Tracker Report Generator Main Page](#) to generate the applicable report.
2. Select a content item from the results report and click the content identification number listed in the DocName column.

The Content Dashboard for the selected content item is displayed.

3. Click the **All Versions Together** link.

The resulting content dashboard view shows the combined access results for both versions.

8.5.9.6 Creating Custom Report Queries

This section provides an example that demonstrates how to create a non-secure custom report query. This particular query generates a report that lists users and their personal attributes. The data is derived from the Content Server's Users database table.

Note: The example in this section uses a non-secure query. Therefore, the generated report results can be viewed by any user regardless of their role and account privileges. All of the reports are generated using either non-secure or secure queries. The query selection is dependent on the security mode. For more detailed information about the optional security checks preference variable, see "[Security Checks and Query Results](#)" on page 8-63. If you want to create a secure report query, see "[Creating Secure Report Queries](#)" on page 8-73.

To create the custom users report:

1. Design your SQL report query.
2. Enter the custom report query into the query file of Content Tracker Reports:
 - a. In a text editor, open the *contenttrackerreports_query.htm* file:

IntradocDir/custom/ContentTrackerReports/resources/contenttrackerreports_query.htm

- b. Enter the custom report name, number of columns, and the source database table.

For example, the following excerpt from the query file illustrates that the custom query report will extract the information from all columns in the Users database table.

```
<tr>
  <td>qCustomUsers</td>
  <td>
    SELECT *
    FROM Users
  </td>
</tr>
```

3. Enter a link to the custom report in the Content Tracker Report Generator main page file:

- a. Open the following directory:

IntradocDir/custom/ContentTrackerReports/templates

- b. In a text editor, open the following file:

contenttrackerreports_main_page.htm

- c. Enter the attributes to display the link on the Content Tracker Report Generator main page.

For example, the following excerpt from the main page file illustrates that the custom report link is presented as a selectable radio button and is listed as "Custom Users Report" on the page. See the custom report link in the section about "[Custom Report Query Display Results](#)" on page 8-61.

```
<h4 class=xuiSubheading>Custom Reports</h4>
<table width=80% border=0>
  <tr>
    <td> <span class="tableEntry"><input type="radio" name="radiobutton"
value="qCustomUsers">
    Custom Users Report </span></td>
  </tr>
```

```
</table>
```

4. Enter the formatting requirements in the template resource file of Content Tracker Reports:

- a. Open the following directory:

```
IntradocDir/custom/ContentTrackerReports/resources
```

- b. In a text editor, open the following file:

```
contenttrackerreports_template_resource.htm
```

To view the resulting custom report format, see the generated custom report in the section about "[Custom Report Query Display Results](#)" on page 8-61.

- c. Enter the display features to use for the generated custom report as well as any desired drill-down reports, see the drill-down report in the section about "[Custom Report Query Display Results](#)" on page 8-61.

For example, the following excerpt from the template resource file illustrates that in addition to the link listing, the report title is "Deanna's First Report" and a drill-down report is provided that is based on the content items seen by user report.

```
<!-- Custom Template -->
<@dynamichtml qCustomUsers_vars@>
  <$reportWidth = "100%"$>
  <$title = "<i>Content Access Report</i>"$>
  <$reportTitle="Deanna's First Report"$>
  <$column1Width="35%"$>
  <$column0Drill="qSctrDocsSeenByUser_Drill"$>
<@end@>
```

5. Restart the Content Server to apply the changes.

8.5.9.7 Changing the Security Checks Preference Setting

You can manually enable or disable the `ScrtEnableSecurityChecks` preference setting:

1. Log in to Content Server as an administrator.
2. Select **Admin Server** from the Administration menu.
The Content Admin Server page is displayed.
3. Click the name of the Content Server instance whose security checks preference setting will be changed.
The Content Admin Server *<instance_name>* page is displayed.
4. Click **Component Manager**.
The Component Manager page is displayed.
5. In the Update Component configuration field, select **Content Tracker Reports** from the list.
6. Click **Update**.
The Update Component Configuration page is displayed.
7. In the `ScrtEnableSecurityChecks` preference field, enter the new setting (true or false).
8. Click **Update**.

Content Tracker Reports is successfully updated with the new setting and is effective immediately. You do not need to restart Content Server.

8.5.9.8 Enabling/Disabling Security Checks for Report Queries

If the security checks preference variable is enabled, and a secure version of a query exists in the `contenttrackerreports_query.htm` file, then Content Tracker Reports will use the secure query to generate the requested report. However, you may decide that certain reports do not need to be generated using security checks. Accordingly, you can selectively disable the secure version of any report query.

To disable security checks (account matching) for particular report queries:

1. In a text editor, open the `contenttrackerreports_query.htm` file:

```
IntradocDir/custom/ContentTrackerReports/resources/contenttrackerreports_query.htm
```

2. Locate the secure version of the query that you want to disable.
3. Rename the query. For example, if you want to disable the `qSctrUsersByType_SEC` query, you can add the suffix `"_disabled"` to the query name:

```
qSctrUsersByType_SEC_disabled
```

Renaming the query ensures that the Content Tracker Reports service can not find the secure query in the `contenttrackerreports_query.htm` file. Instead, the non-secure version (`qSctrUsersByType`) will be used.

Note: Renaming a secure query is a temporary disabling solution. Later, if you decide that you prefer to use the secure version of a query, you can easily re-enable it by restoring its original name.

Alternatively, you can delete the secure version of the query. However, if you subsequently reconsider, you would need to recreate the entire secure version of the query.

4. Save and close the `contenttrackerreports_query.htm` file.
5. Restart the Content Server to apply the changes.

8.5.9.9 Creating Secure Report Queries

For most of the pre-defined report queries, there are both non-secure and secure versions in the `contenttrackerreports_query.htm` file. Optionally, you can create a secure version for any query that does not currently have one. In particular, this includes any non-secure custom queries that you have added.

To create a secure version of a non-secure report query:

1. In a text editor, open the `contenttrackerreports_query.htm` file:

```
IntradocDir/custom/ContentTrackerReports/resources/contenttrackerreports_query.htm
```

2. Locate the query for which you want to create a secure version. For consistency, you should add your secure query immediately following the corresponding non-secure version.
3. Design your secure SQL report query: It might be helpful to review Step 2 in the procedure for "[Creating Custom Report Queries](#)" on page 8-70.

4. Adjust your query to ensure that it follows the pattern of the existing secure queries:
 - a. In the FROM clause, include the Revisions table.
 - b. In the WHERE clause, include the %SCTR_SECURITY_CLAUSE% token. This acts as a placeholder for the WHERE clause that the Content Tracker Reports service inserts.
 - c. Complete the query following the established pattern in the existing secure queries.

The [Figure 8-4](#) illustrates a typical report query pairing.

5. Save and close the contenttrackerreports_query.htm file.
6. Restart the Content Server to apply the changes.

Figure 8-4 Examples of Non-Secure and Secure Report Query Versions

<p>Non-Secure Version</p> <pre><td>qSctrUsersByType</td> <td>SELECT u.dUserType AS wwSctrCHUser_Type, COUNT(s.sc_scs_dID) AS wwSctrCHAcc, COUNT(DISTINCT s.comp_username) AS wwSctrCHact_Usr_Cnt FROM SctAccessLog s, Users u WHERE (s.comp_validRef IS NOT NULL) AND (SctDateStamp >= ?) AND (SctDateStamp <= ?) AND s.comp_username = u.dName GROUP BY u.dUserType ORDER BY wwSctrCHAcc DESC <td> SctFmtFromDate date SctFmtToDate date</pre>
<p>Secure Version</p> <pre><td>qSctrUsersByType_SEC</td> <td>SELECT u.dUserType AS wwSctrCHUser_Type, COUNT(s.sc_scs_dID) AS wwSctrCHAcc, COUNT(DISTINCT s.comp_username) AS wwSctrCHact_Usr_Cnt FROM SctAccessLog s, Users u, Revisions WHERE %SCTR_SECURITY_CLAUSE% s.sc_scs_dID = Revisions.dID AND (s.comp_validRef IS NOT NULL) AND (SctDateStamp >= ?) AND (SctDateStamp <= ?) AND s.comp_username = u.dName GROUP BY u.dUserType ORDER BY wwSctrCHAcc DESC <td> SctFmtFromDate date SctFmtToDate date</pre>

8.5.9.10 Using an External Report Generator

To generate custom reports from an external reporting tool:

1. Open the external reporting tool application
2. Set up an ODBC connection (if appropriate) to the Content Server database.
3. Select the database tables that you want to use in your report.
4. Link together the selected tables based on key IDs or fields that are common within the files. Ideally, each selected table could be linked using the same key ID or field if it is common to each table.

5. Choose and integrate the desired fields from each table into the report form. In most cases, the fields can be selected, dragged, and dropped onto the form.

In this step, you design the customized report. The specific fields that you select will display as columns on the final, basic text report that the external reporting application generates.

6. Optionally, you may want to create custom parameters and/or criteria if the external reporting application supports these options.

For example, one type of custom parameter would allow you to either have queried information hard-coded into the final report or use a prompt to obtain input directly from the end user. Additionally, creating specific sort criteria can strategically restrict and optimize the aggregate data included in the final report.

7. Specify the sorting order of the selected fields and format the final report output.
8. Preview the final report (optional).
9. Check the report into a delivery mechanism.

Generally, the final report can be formatted and delivered as web-viewable pages or as a printable file. The external reporting application can also use the data results to create attractive graphics such as bar graphs or pie charts.

Additionally, the saved file can be imported into other products such as Microsoft Excel or Word files.

8.6 Service Call Configuration

This section covers the following topics:

- ["About the Service Call Configuration File"](#) on page 8-75
- ["About the Content Tracker Logging Service"](#) on page 8-81
- ["Managing Service Call Information"](#) on page 8-82

8.6.1 About the Service Call Configuration File

The Content Tracker service handler filter makes it possible to gather information about Content Server activity other than content requests. Service request details are collected by the service handler filter and stored in the SctAccessLog table in real time. The details are obtained from the DataBinder that accompanies the service call. For a Content Server service call to be logged, it must have an entry in the service call configuration file (SctServiceFilter.hda).

The SctServiceFilter.hda file is a user-modifiable configuration file that is used to limit the number of service calls that are logged. This enables you to selectively control which services will be logged. Additionally, you can optionally expand the data logging function for any service call included in the SctServiceFilter.hda file. That is, you can also log and track data values of specific DataBinder fields that are relevant to a particular service. See ["Extended Service Call Tracking Function"](#) on page 8-76.

Service tracking is limited to top-level services that are called via the server socket port. Sub-services, or services that are called internally, cannot be tracked.

The purpose of the SctServiceFilter.hda file is to define which parts of Content Server are of particular interest to users. If a Content Server service is not listed in the SctServiceFilter.hda file, it is ignored by Content Tracker. Additionally, if a service is not listed in this file, it can only be logged by the Content Tracker logging service. See ["About the Content Tracker Logging Service"](#) on page 8-81.

There are two ways to make changes to the SctServiceFilter.hda file. You can add new services and edit the existing service call parameters in the file from the Data Engine Control Center, see ["Services Tab"](#) on page A-161. Or, you can manually edit the SctServiceFilter.hda file, see ["Manually Editing the SctServiceFilter.hda File"](#) on page 8-82.

Tip: You can control the services that you want to log by including or excluding them from the SctServiceFilter.hda file. This is an effective method to control logging for particular services or for all services. Also, the extended service call tracking function enables you to customize the type of data that is logged for a specific service.

This section covers the following topics:

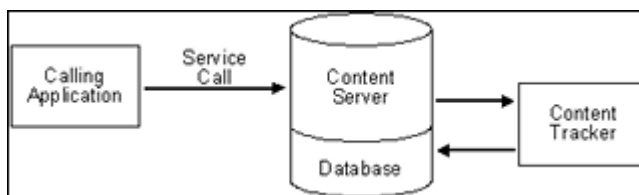
- ["General Service Call Logging"](#) on page 8-76
- ["Extended Service Call Tracking Function"](#) on page 8-76
- ["Service Call Configuration File Contents"](#) on page 8-78
- ["ResultSet Examples"](#) on page 8-79

8.6.1.1 General Service Call Logging

Services listed in the SctServiceFilter.hda file are detected by the Content Tracker service handler filter and the values of selected data fields are captured. Content Tracker then logs the named service calls. The information along with the timestamps, etc. are written dynamically into the SctAccessLog table.

For each enabled service, Content Tracker automatically logs certain standard DataBinder fields, such as dUser, dDocName, etc. Also, DataBinder fields associated with the extended service call tracking function are logged to the general purpose columns in the SctAccessLog table.

Data is inserted into the SctAccessLog table in real time using Content Tracker-specific services sequence numbers and a type designation of "S" for service. ("W" designations indicate static URL event types). Manual and/or scheduled reductions are only required to process the static URL access information gathered by the web server filter. See ["Web Server Filter"](#) on page 8-11 for details.



8.6.1.2 Extended Service Call Tracking Function

The extended service call tracking function enables you to log Content Server service calls and, optionally, supplement this information by also logging relevant data values from one or more additional DataBinder fields other than the standard DataBinder fields logged by each configured service call.

This section covers the following topics:

- ["Service Call ResultSet Combinations"](#) on page 8-77
- ["General Purpose Columns in the Output Table"](#) on page 8-77

8.6.1.2.1 Service Call ResultSet Combinations Each service that Content Tracker logs must have an entry in the ServiceExtraInfo ResultSet that is contained in the SctServiceFilter.hda file. Content Tracker automatically logs various standard DataBinder fields, such as dUser and dDocName. However, the service-related data logged by Content Tracker can be expanded by logging and tracking relevant data values from supplementary DataBinder fields.

The extended service call tracking function is implemented by linking the entries in the ServicesExtraInfo ResultSet to field map ResultSets. Each field map ResultSet contains one or more sets of data field names, the source location, and the destination table column name in the SctAccessLog table. This grouping allows you to select data fields that are relevant to the associated service call and have the data values logged into the specified column in the SctAccessLog table.

Since more than one expanded service can be logged using the extended tracking function, the contents of the general purpose columns in the SctAccessLog table cannot be properly interpreted without knowing which service is being logged. The service name is always logged in the sc_scs_idcService column. Your queries should match this column with the desired service name.

Caution: In field map ResultSets, nothing prevents you from mapping data fields to existing, standard SctAccessLog table columns. The extended service mapping occurs after the standard field data values are collected. Consequently, you can override any of the standard table column fields.

For example, the service you are logging might carry a specific user name (such as, MyUserName=john) in a data field. You could use the extended tracking function to override the contents of the sc_scs_dUser column. In this case, you simply combine MyUserName and sc_scs_dUser as the data field, location, and table column set in the field map ResultSet.

Therefore, it remains your responsibility to ensure that the data being logged is a reasonable fit with the SctAccessLog column type.

For examples of linked service entries and ResultSets, see "[Linked Service Entries and Field Map ResultSets](#)" on page 8-80. For more information about the contents of the SctAccessLog table and the general purpose columns that are intended to be mapped to data fields, see the "[Combined Output Table](#)" on page 8-12. For more information about the service call user interface, see the "[Services Tab](#)" on page A-161.

8.6.1.2.2 General Purpose Columns in the Output Table In the field map ResultSets for extended service tracking, you must map the DataBinder fields to columns in the SctAccessLog table. The general purpose columns (extField_1 through extField_10) are available for mapping. These columns may be filled with any data values you consider appropriate for logging and tracking for a particular service. It is recommended and expected that you use these columns to avoid overwriting the standard table columns.

Tip: The name of the service will always be logged to the sc_scs_idcService column. Therefore, you should include it as a qualifier in any query that uses the contents of the extended fields. For more information about custom reports that include specific SQL queries involving SctAccessLog table columns, see "[Creating Custom Report Queries](#)" on page 8-70.

8.6.1.3 Service Call Configuration File Contents

The initial contents of the service call configuration file (SctServiceFilter.hda) are the commonly used content access, search, and user authentication services native to Content Server. This file contains a ResultSet structure with one entry for each service to be logged. Optionally, to support the extended service call tracking function, this file may also include field map ResultSets that are linked to the service entries contained in the ServiceExtraInfo ResultSet.

You can add new entries and/or edit existing entries in the SctServiceFilter.hda file with the Services user interface accessed through the Data Engine Control Center. Or, you can optionally change entries in the file manually. See the "[Services Tab](#)" on page A-161 or "[Manually Editing the SctServiceFilter.hda File](#)" on page 8-82.

Note: You can review the set of initial services that Content Tracker logs into the SctAccessLog table by accessing the SctServiceFilter.hda file in the following directory:

```
<cs_root>/data/contenttracker/config/SctServiceFilter.hda
```

The following tables provide details of the service call configuration file result set schema. The values are copied directly to the corresponding columns in the SctAccessLog table.

ServiceExtraInfo ResultSet Contents:

Feature	Description
Service Name (sctServiceName)	The name of the service to be logged. For example, GET_FILE. If no row is present in the ResultSet for a given service, the service will not be logged.
Calling Product (sctCallingProduct)	An arbitrary string. It is generally set to "Core Server" for all standard Content Server entries.
Event Type (sctEventType)	An arbitrary string. It is generally set to "Content Access" for all standard Content Server entries.
Reference (sctReference)	Used to set the sc_scs_reference field in the SctAccessLog table. If blank, the internal getReference logic is used.
Field Map (sctFieldMap)	The name of the field map ResultSet that is added to the SctServiceFilter.hda file. This field is only required if you plan to use the extended service call tracking function. This function enables you to log DataBinder field information to one or more of the general purpose columns in the SctAccessLog table.

Field Map ResultSet Contents:

Feature	Description
Field Map Link	The name of the field map ResultSet. To help you create your field map, a configuration variable can be set that writes out the service DataBinder object. This enables you to see what data is available at the time the event is recorded.
DataBinder Field (dataFieldName)	The name of the DataBinder field name whose data values are logged to a general purpose column in the SctAccessLog table. See also the Field Name field on the Field Map Screen .

Feature	Description
Data Location (dataLocation)	The section in the Content Server service DataBinder where the field to be logged is located. See also the Field Location field on the Field Map Screen .
Access Log Column (accessLogColumnName)	The specific general purpose column in the SctAccessLog table where data values from a specified DataBinder field are logged. See also the Column Name field on the Field Map Screen .

The fields copied from the DataBinder and inserted into the SctAccessLog table include: dID, dDocName, IdcService, dUser, SctCallingProduct, SctEventType, and SctReference. If the values for the latter three fields are included in a service's entry in the SctServiceFilter.hda file, they will override the corresponding values in the data field.

There should be no duplication or conflicts between services logged via the service handler filter and those logged via the Content Tracker logging service. If a service is named in the Content Tracker service handler filter file then such services are automatically logged so there is no need for the Content Tracker logging service to do it.

Tip: Adding desired service calls to the SctServiceFilter.hda file and using this method to log specific activity allows you the advantage of providing values for the CallingProduct, EventType, and Reference fields. The assigned values are copied directly to the corresponding columns in the SctAccessLog table.

8.6.1.4 ResultSet Examples

The default SctServiceFilter.hda file includes various common service calls.

Note: You can review the initial set of services that Content Tracker logs into the SctAccessLog table along with the service entries and field map ResultSets by accessing the SctServiceFilter.hda file in the following directory:

```
<cs_root>/data/contenttracker/config/SctServiceFilter.hda
```

For more detailed information about these services or any others that you may want to include in the service call configuration file, see the *Oracle Fusion Middleware Services Reference Guide for Universal Content Management*

This section covers the following topics:

- ["ServiceExtraInfo ResultSet Entries"](#) on page 8-79
- ["Linked Service Entries and Field Map ResultSets"](#) on page 8-80

8.6.1.4.1 ServiceExtraInfo ResultSet Entries The following list provides examples of several service entries contained in the SctServiceFilter.hda file's ServiceExtraInfo ResultSet.

- GET_FILE_BY_NAME
Core Server

- Content Access
- GET_DYNAMIC_URL
 - Core Server
 - Content Access
- GET_DYNAMIC_CONVERSION
 - Core Server
 - Content Access
- GET_EXTERNAL_DYNAMIC_CONVERSION
 - Core Server
 - Content Access
- GET_ARCHIVED_FILE
 - Core Server
 - Content Access
- COLLECTION_GET_FILE
 - Folders
 - Content Access

8.6.1.4.2 Linked Service Entries and Field Map ResultSets The following table lists several examples of service entries that are linked to field map ResultSets. These examples, or other similar ones, are included in the initial SctServiceFilter.hda file.

Service Entries	Field Map ResultSets
GET_SEARCH_RESULTS	@ResultSet SearchFieldMap
Core Server	3
Search	dataFieldName 6 255
	dataLocation 6 255
SearchFieldMap	accessLogColumnName 6 255
	MiniSearchText
	LocalData
	extField_1
	TranslatedQueryText
	LocalData
	extField_2
	IsSavedQuery
	LocalData
	extField_7
	@end

Service Entries	Field Map ResultSets
PNE_GET_SEARCH_RESULTS Core Server Search SearchFieldMap	@ResultSet SearchFieldMap 3 dataFieldName 6 255 dataLocation 6 255 accessLogColumnName 6 255 MiniSearchText LocalData extField_1 TranslatedQueryText LocalData extField_2 IsSavedQuery LocalData extField_7 @end
GET_FILE Core Server Content Access GetFileFieldMap	@ResultSet GetFileFieldMap 3 dataFieldName 6 255 dataLocation 6 255 accessLogColumnName 6 255 RevisionSelectionMethod LocalData extField_1 Rendition LocalData extField_2 @end

8.6.2 About the Content Tracker Logging Service

The Content Tracker logging service is a single service call (SCT_LOG_EVENT) that allows an application to log a single event to the SctAccessLog table. The service may be called directly via a URL or as an action in a service script. It may also be called from IdocScript using the executeService() function. The calling application is responsible for setting any and all fields in the service DataBinder that are to be recorded, including the descriptive fields listed in the Content Tracker SctServiceFilter.hda configuration file.

The SCT_LOG_EVENT service copies information out of the service DataBinder. This data is inserted into the SctAccessLog table in real time using the Content Tracker specific services sequence numbers and a type designation of "S" for service. Manual and/or scheduled reductions are only required to process the static URL access information gathered by the web server filter. See "[Web Server Filter](#)" on page 8-11.

Note: There should be no duplication or conflicts between services logged via the service handler filter and those logged via the Content Tracker logging service. If a service is named in the Content Tracker service handler filter file then such services are automatically logged so there is no need for the Content Tracker logging service to do it. However, Content Tracker will make no attempt to prevent such duplication.

8.6.3 Managing Service Call Information

This section provides information and task procedures for mapping and logging data from Content Server services to the combined output database table (SctAccessLog).

This section covers the following topics:

- ["Manually Editing the SctServiceFilter.hda File"](#) on page 8-82
- ["Setting Required DataBinder Fields to Call the Content Tracker Logging Service"](#) on page 8-83
- ["Calling the Content Tracker Logging Service from an Application"](#) on page 8-84
- ["Calling the Content Tracker Logging Service from IdocScript"](#) on page 8-84

8.6.3.1 Manually Editing the SctServiceFilter.hda File

To add or change entries in the SctServiceFilter.hda file:

1. In a text editor, open the SctServiceFilter.hda file:

```
<cs_root>/data/contenttracker/config/.../SctServiceFilter.hd
```

2. Edit an existing entry or add a new service entry. For example, to add the GET_FILE_FORM service, enter the following service entry to the ServiceExtraInfo ResultSet in the file:

```
GET_FORM_FILE
Threaded Discussion
Content Access
<optional_reference_value>
<optional_field_map_link_value>
```

where the *optional_field_map_link_value* is used if you are implementing the extended service call tracking function. In this case, you must also add or edit the corresponding field map ResultSet. Otherwise, if you are implementing extended service tracking, skip Step 3.

3. If you use extended service tracking, you must add or edit the corresponding field map ResultSet. For example, to add the SS_GET_PAGE service and track additional data field values, enter the following service entry and corresponding field map ResultSets to the file:

Service Entry	Field Map ResultSet
SS_GET_PAGE	@ResultSet SSGetPageFieldMap
Site Studio	3
Web Hierarchy Access	dataFieldName 6 255
web	dataLocation 6 255
SSGetPageFieldMap	accessLogColumnName 6 255
	<DataBinder_field_name>
	<data_field_location_name>
	<access_log_column_name>
	@end

Note: Include as many sets of DataBinder field, location, and table column names as necessary.

4. Save and close the file.

5. Restart the Content Server to apply the new definitions.

Note: Search request events are logged into the SctAccessLog table in real time and do not need to be reduced. Optionally, you can add or edit services with the user interface included in the Data Engine Control Center. For more information, see the "[Data Engine Control Center](#)" on page A-154 and the "[Services Tab](#)" on page A-161.

8.6.3.2 Setting Required DataBinder Fields to Call the Content Tracker Logging Service

The following table provides the SctAccessLog column names and the corresponding DataBinder fields that Content Tracker looks for when the Content Tracker logging service (SCT_LOG_EVENT) is called. When an application calls the Content Tracker logging service, the application is responsible for setting the necessary fields in the service DataBinder for Content Tracker to find. For more detailed information about the SctAccessLog fields, see the "[Combined Output Table](#)" on page 8-12.

SctAccessLog Column Name	Service DataBinder LocalData Field
SctDateStamp	[computed]
SctSequence	SctSequence
SctEntryType	"S"
eventDate	[computed]
SctParentSequence	SctParentSequence
c_ip	REMOTE_HOST
cs_username	HTTP_INTERNETUSER
cs_method	REQUEST_METHOD
cs_uriStem	HTTP_CGIPATHROOT
cs_uriQuery	QUERY_STRING
cs_host	SERVER_NAME
cs_userAgent	HTTP_USER_AGENT
cs_cookie	HTTP_COOKIE
cs_referer	HTTP_REFERER
sc_scs_dID	dID
sc_scs_dUser	dUser
sc_scs_idcService	IdcService (or SctIdcService)
sc_scs_dDocName	dDocName
sc_scs_callingProduct	sctCallingProduct
sc_scs_eventType	sctEventType
sc_scs_status	StatusCode
sc_scs_reference	sctReference (also ...)
comp_username	[computed - HTTP_INTERNETUSER or ...]
sc_scs_isPrompt	n/a
sc_scs_isAccessDenied	n/a

SctAccessLog Column Name	Service DataBinder LocalData Field
sc_scs_inetUser	n/a
sc_scs_authUser	n/a
sc_scs_inetPassword	n/a
sc_scs_serviceMsg	StatusMessage

8.6.3.3 Calling the Content Tracker Logging Service from an Application

You can call the SCT_LOG_EVENT service from an application. This can be done by the application developer, or by a user willing to modify the application service scripts. The application can call SCT_LOG_EVENT from Java. Or, the application can include calls to SCT_LOG_EVENT in the service script.

8.6.3.4 Calling the Content Tracker Logging Service from IdocScript

You can call the SCT_LOG_EVENT service indirectly from IdocScript, using the executeService() function. This is the same as calling the SCT_LOG_EVENT service from an application except that it occurs from IdocScript instead of the application Java code. Content Tracker cannot distinguish whether the SCT_LOG_EVENT service is called from Java or from IdocScript.

8.7 Configuration and Customization

This section covers the following topics:

- ["Configuration Variables"](#) on page 8-84
- ["Manually Setting Content Tracker Configuration Variables"](#) on page 8-87
- ["Activity Metrics SQL Queries"](#) on page 8-87
- ["External Users and Content Item Tracking"](#) on page 8-89

8.7.1 Configuration Variables

The following table lists the default values of the configuration settings used in the current version of Content Tracker. These configuration variables are contained in the Content Tracker configuration file:

<cs_root>/data/contenttracker/config/sct.cfg

Config. Setting	Default Value	Remarks
SctAutoTruncateDataStrings	FALSE	Used by: JAVA Determines whether the reduction process will truncate data strings to fit into the corresponding table column.
SctComponentDir	<cs_root>/data/contenttracker/	Used by: JAVA Path to the directory where Content Tracker is installed.
SctDebugLogEnabled	FALSE	Used by: JAVA Set TRUE to enable Java code execution trace. Used with SctDebugLogFilePath.

Config. Setting	Default Value	Remarks
SctDebugLogFilePath	<cs_root>/data/contenttracker/log/SCT_DEBUG_TRACE.log	Used by: JAVA Directory for Java code execution trace. Used with SctDebugLogEnabled.
SctDebugServiceBinderDumpEnabled	FALSE	Used by: JAVA Set TRUE to enable diagnostic output of Service DataBinder objects during Service logging.
SctExternalUserLogEnabled	TRUE	Used by: JAVA Set TRUE to enable replication of External user account and role information to UserSecurityAttributes table.
SctFilterPluginLogDir	<cs_root>/data/contenttracker/data/	Used by: filter plugin Path to the directory where filter plugin will store the event logs.
SctIdcAuthExtraConfigParams		List of Content Tracker configuration parameters that are passed along to the filter plugin, merged programmatically into idcAuthExtraConfigParams by the Content Tracker startup filter.
SctIgnoreDirectories	DomainHome/ucm/cs/resources;/DomainHome/ucm/cs/common/	Used by: filter plugin Directs filter plugin to disregard URLs contained within the listed directory roots.
SctIgnoreFileTypes	gif,jpg,js,css	Used by: filter plugin Directs filter plugin to disregard URLs with the listed filetypes.
SctLogDir	<cs_root>/data/contenttracker/data/	Used by: JAVA Path to the directory(s) where Content Tracker looks for the raw event logs - sctLog, etc. May be multi-valued, e.g. dir1;dir2;...;dirn.
SctLogEnabled	TRUE	Used by: filter plugin, JAVA If False, directs service handler filters and web server filter plugin to ignore all events and create no logs. This is the Content Tracker Master On/Off switch.
SctLogSecurity	TRUE	Used by: filter plugin, JAVA If true, directs filter plugin to record IMMEDIATE_RESPONSE_PAGE events in the sctSecurityLog event log, and the reduction process to read the event log.
SctMaxRecentCount	5	Used by: JAVA Maximum number of days worth of reduced data kept in the "Recent" state. Overflow from Recent is moved to Archive state.
SctMaxRereadTime	3600	Used by: JAVA Maximum number of seconds that can occur between consecutive references by a particular user to a particular content item, e.g. a PDF file, and have the adjacent references be considered a single sustained access. Consecutive references which occur further apart in time count as separate accesses.
SctReductionAvailableDatesLookback	0	Used by: JAVA Used with SctReductionRequireEventLogs to limit Available Dates range. Unit = Days. Zero = unlimited.
SctReductionLogDir	<cs_root>/data/contenttracker/log/	Used by: JAVA Path to the directory where the Content Tracker reduction logs are stored.

Config. Setting	Default Value	Remarks
SctReductionRequireEventLogs	TRUE	Used by: JAVA Used in Detached configurations. FALSE means proceed with Reduction even if no event logs are found.
SctScheduledReductionEnable	TRUE	Used by: JAVA Used in Multi-JVM configurations to select which Content Server instance performs the reduction.
SctSnapshotEnable	FALSE	Used by: JAVA Set TRUE to enable Snapshot functions. Set from Data Engine Control Center.
SctSnapshotLastAccessEnable	FALSE	Used by: JAVA Set TRUE to enable Last Access Date Snapshot function. Set from Data Engine Control Center.
SctSnapshotLastAccessField	[none]	Used by: JAVA Metadata field name for Last Access Date, e.g. xLastAccessDate. Set from Data Engine Control Center.
SctSnapshotLongCountEnable	FALSE	Used by: JAVA Set TRUE to enable "Long" interval access count Snapshot function. Set from Data Engine Control Center.
SctSnapshotLongCountField	[none]	Used by: JAVA Metadata field name for Long Interval Count, e.g. xAccessesInLast90Days. Set from Data Engine Control Center.
SctSnapshotLongCountInterval	[none]	Used by: JAVA Number of days for "Long" Interval. Set from Data Engine Control Center.
SctSnapshotShortCountEnable	FALSE	Used by: JAVA Set TRUE to enable "Short" interval access count Snapshot function. Set from Data Engine Control Center.
SctSnapshotShortCountField	[none]	Used by: JAVA Metadata field name for Short Interval Count, e.g. xAccessesInLast10Days. Set from Data Engine Control Center.
SctSnapshotShortCountInterval	[none]	Used by: JAVA Number of days for "Short" Interval. Set from Data Engine Control Center.
SctUseGMT	FALSE	Used by: filter plugin, JAVA Set TRUE for logged event times to be converted to Universal Coordinated Time. FALSE uses local time.

The following variables are not available in the sct.cfg file. You can access them only via the Component Manager:

Config. Setting	Default Value	Remarks
SctPostReductionExec	[none]	Used by: JAVA Path to Post Reduction Executable (assumed to be in <i>IntradocDir/custom/ContentTracker/bin/</i>)

Config. Setting	Default Value	Remarks
SctProxyNameMaxLength	50	Used by: JAVA Maximum number of characters in the name of any Content Server proxy server in the configuration. Used to increase the size of user name fields in Content Tracker table creation.
SctUrlMaxLength	3000	Used by: JAVA Maximum expected length (characters) for URL fields. Used to determine column widths when creating tables. There may be several such columns in a given table.
SctWebBeaconIDList	[none]	Used by: filter plugin List of zero or more web beacon objects. Required to add the ability to feed data to Content Tracker using client-side tags. Enables Content Tracker to gather data from cached pages and pages generated from cached services.

8.7.2 Manually Setting Content Tracker Configuration Variables

To set or edit any of the Content Tracker configuration variables:

1. In a text editor, open the *sct.cfg* file:
`<cs_root>/data/contenttracker/config/sct.cfg`
2. Locate the configuration variable to be edited.
3. Enter the applicable value.
4. Save and close the *sct.cfg* file.
5. Restart Content Server to apply the changes.

Optionally, you can add or edit the configuration variables for the activity metrics metadata fields with the user interface included in the Data Engine Control Center. These include the following variables:

- SctSnapshotEnable
- SctSnapshotLastAccessEnable
- SctSnapshotLastAccessField
- SctSnapshotLongCountEnable
- SctSnapshotLongCountField
- SctSnapshotLongCountInterval
- SctSnapshotShortCountEnable
- SctSnapshotShortCountField
- SctSnapshotShortCountInterval

For more information about the user interface and the activity metrics functions, see the "[Data Engine Control Center](#)" on page A-154 and the "[Snapshot Tab](#)" on page A-158.

8.7.3 Activity Metrics SQL Queries

The snapshot feature enables you to log and track search relevance custom metadata fields. Content Tracker fills these fields with content item usage and access information that reflects the popularity of particular content items. The information

includes the date of the most recent access and the number of accesses in two distinct time intervals. For more information about the snapshot feature, see the "[Snapshot Tab](#)" on page A-158.

If the snapshot feature and activity metrics are enabled, the values in the custom metadata fields are updated following the reduction processing phase. When users access content items, the values of the applicable search relevance metadata fields change accordingly. Subsequently, Content Tracker runs three SQL queries as a post-reduction processing step to determine which content items were accessed during the reporting period. For more information about the post-processing reduction step, see "[Data Reduction Process with Activity Metrics](#)" on page 8-9.

This section covers the following topics:

- "[Customizing the Activity Metrics SQL Queries](#)" on page 8-88
- "[Customizing the Autoload Option SQL Query](#)" on page 8-89

8.7.3.1 Customizing the Activity Metrics SQL Queries

The SQL queries are available as a resource and can be customized to fulfill your specific needs. You may want to filter out certain information from the final tracking data. For example, you might want to exclude accesses by certain users in the tabulated results. The SQL queries are included in the `sctQuery.htm` file:

`IntradocDir/custom/ContentTracker/resources/SctQuery.htm`

Note: In general, you should feel free to modify the WHERE clause in any of the SQL queries. However, it is recommended that you leave everything else as is.

The following SQL queries are used for the search relevance custom metadata fields:

- "[qSctLastAccessDate](#)" on page 8-88
- "[qSctAccessCountShort and qSctAccessCountLong](#)" on page 8-88

This section covers the following topics:

- "[qSctLastAccessDate](#)" on page 8-88
- "[qSctAccessCountShort and qSctAccessCountLong](#)" on page 8-88

8.7.3.1.1 qSctLastAccessDate For the last access function, the `qSctLastAccessDate` SQL query uses the `SctAccessLog` table. It checks for all content item accesses on the reduction date and collects the latest timestamp for each dID. The parameter for the query is the reduction date. In this case, dates may be reduced in random order because the comparison test for the last access date will only signal a change if the existing `DocMeta` value is older than the proposed new value.

For more information about the last access field, see the "[Snapshot Tab](#)" on page A-158.

8.7.3.1.2 qSctAccessCountShort and qSctAccessCountLong For the short and long access count functions, the `qSctAccessCountShort` and `qSctAccessCountLong` SQL queries are identical except for the "column name" for the count. They use the `SctAccessLog` table to calculate totals for all accesses for each dID across the time intervals specified (in days) for each. The parameters are the beginning and ending dates for the applicable rollups.

For more information about the short and long access count fields, see the "[Snapshot Tab](#)" on page A-158.

8.7.3.2 Customizing the Autoload Option SQL Query

The Autoload option on the Snapshot tab of the Data Engine Control Center enables you to backfill the Last Access field for all existing content. When invoked, Autoload runs the `qSctLastAccessDateAutoload` query which fills the empty (NULL) Last Access fields in Content Server's DocMeta database table with the current date and time.

However, the `qSctLastAccessDateAutoload` query is available as a resource and can be customized to fulfill your specific needs. For example, you may want to set the Last Access field to `dCreateDate`, `dReleaseDate`, or any other time that meets the requirements of your application. The `qSctLastAccessDateAutoload` query is included in the `sctQuery.htm` file:

IntradocDir/custom/ContentTracker/resources/SctQuery.htm

For more information about the last access field and the Autoload option, see the "[Snapshot Tab](#)" on page A-158.

8.7.4 External Users and Content Item Tracking

You have the option to control whether Content Tracker includes data about external user accesses in the applicable reports. These authenticated users are qualified based on their user roles and accounts. By default, the configuration parameter `SctExternalUserLogEnabled` is set to true (enabled). This allows Content Tracker to monitor external user logons and automatically propagate their role and account information to the `UserSecurityAttributes` table.

Regardless of whether the `SctExternalUserLogEnabled` configuration variable is enabled or disabled, all of the content item access information for external users is tracked and recorded. But when it is enabled, this variable ensures that this data is included in reports that explicitly correlate externally authenticated user names with their associated user roles and accounts. Specifically, the Top Content Items by User Role report and the Users by User Role report will include all of the content item access activity by external users. See the "[Content Tracker Report Generator Main Page](#)" on page A-164.

Note: Optionally, you can manually disable the `SctExternalUserLogEnabled` configuration variable. If you choose to do so, however, content item accesses by externally authenticated users will be included in the more general reports, such as Top Content Items. This data is omitted from reports that use document access counts qualified by user role and account information.

To manually disable the `SctExternalUserLogEnabled` configuration variable, see "[Manually Setting Content Tracker Configuration Variables](#)" on page 8-87.

8.8 Troubleshooting

Content Tracker has two execution trace mechanisms: the web server filter and the Java code. These are intended for diagnosing problems at customer installations and are not to be used in production.

This section covers the following topics:

- ["Web Server Filter Debugging Support"](#) on page 8-90
- ["Setting the Debug Plugin"](#) on page 8-90
- ["Java Code Debugging Support"](#) on page 8-90
- ["DataBinder Dump Facility"](#) on page 8-90
- ["Accessing the DataBinder Object Dump File"](#) on page 8-92
- ["Setting the Debugging Configuration Variables"](#) on page 8-92

8.8.1 Web Server Filter Debugging Support

The web server filter honors `PLUGIN_DEBUG`. Enable `PLUGIN_DEBUG` on the Content Server Filter Administration page and the Content Tracker web server filter will issue execution trace information. The trace is only meaningful to someone with access to the source. Customers with a problem are expected to enable `PLUGIN_DEBUG`, run the test scenario, and then send the log segments to Customer Service for evaluation. Otherwise, `PLUGIN_DEBUG` should be left turned off.

8.8.2 Setting the Debug Plugin

To set `PLUGIN_DEBUG`:

1. In Content Server, click the **Admin Applets** link in the Administration tray.
The Administration page is displayed.
2. Click the **Filter Administration** icon or link.
The Configure Web Server Filter page is displayed.
3. Select the `PLUGIN_DEBUG` option check box.
4. Click Update.

8.8.3 Java Code Debugging Support

You can use the System Audit functionality in Content Server for debugging support. See "System Audit Information" in the *Oracle Fusion Middleware System Administrator's Guide for Content Server* for more details. Add `contenttracker` to the Active Sections list. When the list is updated, the Content Tracker execution trace information appears with the other active sections.

8.8.4 DataBinder Dump Facility

This section covers the following topics:

- ["Values for the DataBinder Dump Facility"](#) on page 8-90
- ["About DataBinder Object Dump Files"](#) on page 8-91
- ["Location of the DataBinder Object Dump Files"](#) on page 8-91
- ["Names of the DataBinder Object Dump Files"](#) on page 8-91

8.8.4.1 Values for the DataBinder Dump Facility

The values for this configuration variable include:

- `SctDebugServiceBinderDumpEnabled=False` prevents the Content Tracker service handler filter from writing out the DataBinder objects into dump files. This is the default value.

- **SctDebugServiceBinderDumpEnabled=True** configures the Content Tracker service handler filter to write out the DataBinder objects into dump files. Consequently, you can use a dump file as a diagnostic aid when you are developing field maps for extended service logging. If you are creating field maps for services, the dump files enable you to see what data is available at the time the service events are recorded.

8.8.4.2 About DataBinder Object Dump Files

As soon as Content Tracker records a specific service in the log file, the contents of that service's DataBinder object are written to a serialized dump file. The contents of these files are useful for debugging when you are creating field maps to use the extended service call tracking function. These dump files allow you to see the available LocalData fields for the recorded service.

The Content Tracker service handler filter only creates dump files for DataBinder objects if the associated services are defined in the SctServiceFilter.hda file. For more information about this file, see "[About the Service Call Configuration File](#)" on page 8-75.

Caution: The dump files for DataBinder objects will continue to accumulate until you manually delete them. Therefore, it is recommended that you are careful to use the SctDebugServiceBinderDumpEnabled configuration variable only as necessary.

8.8.4.3 Location of the DataBinder Object Dump Files

The serialized DataBinder objects are written to:

IntradocDir/data/ContentTracker/DEBUG_BINDERDUMP/<dump_file_name>

8.8.4.4 Names of the DataBinder Object Dump Files

The dump file of DataBinder Objects are text files and their names consist of three parts as follows:

<service_name>_<filter_function>_<serial_number>.hda

Where:

- *service_name* is the name of the logged service (such as, GET_FORM_FILE).
- *filter_function* is one of the following:
 - End: Filter Event 'on EndServiceRequestActions' - Normal end-of-service event.
 - EndSub: FilterEvent 'on EndScriptSubServiceActions' - Normal end-of-service for service called as SubService.
 - Error: Filter Event 'on ServiceRequestError' - End of service where an error occurred. May happen in addition to End.
- *serial_number* is the unique identification number assigned to the file. This enables Content Tracker to create more than one DataBinder object dump file for a given service.

Example:

GET_SEARCH_RESULTS_End_1845170235.hda

8.8.5 Accessing the DataBinder Object Dump File

To access the DataBinder object dump file for a specific logged service:

1. In a text editor, open the specific data binder file in the following directory:
`<cs_root>/data/contenttracker/DEBUG_BINDERDUMP/`
2. Review the contents.

The dump files for DataBinder objects will continue to accumulate indefinitely. Therefore, it is recommended that you manually delete them when you are finished.

8.8.6 Setting the Debugging Configuration Variables

See "[Manually Setting Content Tracker Configuration Variables](#)" on page 8-87 for more detailed information about setting any of the Content Tracker configuration variables.

Managing Content Categorizer

This section covers the following topics:

- ["About Content Categorizer"](#) on page 9-1
- ["Setting Up Content Categorizer"](#) on page 9-6
- ["Search Rules"](#) on page 9-8
- ["Sample doc_config.htm Page"](#) on page 9-21
- ["XSLT Transformation"](#) on page 9-22

9.1 About Content Categorizer

Content Categorizer (CC) is an optional component that is automatically installed with Content Server. When enabled, Content Categorizer suggests metadata values for new documents being checked into Content Server, and for existing documents into Content Server that may or may not already have metadata values. These metadata values are determined according to search rules provided by the System Administrator.

The Batch utility that is included with the component can search a large number of files and create a Batch Loader control file containing appropriate metadata field values. The Batch utility can be used to recategorize existing content (already checked into the content server repository).

Content Categorizer suggests metadata values for new documents being checked into Content Server, and for existing documents into Content Server that may or may not already have metadata values. These metadata values are determined according to search rules provided by the System Administrator.

This section covers the following topics:

- ["Search Rules"](#) on page 9-1
- ["XML Conversion"](#) on page 9-2
- ["Operating Requirements"](#) on page 9-3
- ["Operating Modes"](#) on page 9-3

9.1.1 Search Rules

Content Categorizer executes its search rules depending on the type of rule defined:

- **Pattern Matching and Abstract Rules:** Content Categorizer scans a content document looking for "landmarks". A landmark can be specific text, or it can be

based on structural properties of the source document, such as styles, fonts, and formatting.

- **Option List Rule:** Content Categorizer searches for keywords whose cumulative score determines which option of an option list is selected. It does not look for either landmarks or specific XML tags.
- **Categorization Engine Rule:** Content Categorizer invokes a 3rd-party categorizer engine and taxonomy to categorize a content item.
- **Filetype Rule:** Content Categorizer looks for the document file type (the filename extension).

Search Rule Override

Normally, a user-entered value on the Content Check In Form prevents Content Categorizer from applying the search rules for that field. This is also true for option list fields that have a default value, such as the Type field.

Important: It is important to instruct contributors to leave blank any fields they want to have filled by search rules.

- The current version of Content Server automatically inserts a blank value as the default value in a custom option list field. In this case, the first value (by default, a blank value) will not be considered a user-entered value, and the Option List search rule will be applied. If you do not want the Option List search rule to override the first value in a custom option list field, you must provide a default value for that option list on the Configuration Manager Applet.
- To have Content Categorizer ignore the default value and apply the search rules to the Type field, you can edit the Content Server configuration file. See "[Applying Rules to the Type Field](#)" on page 9-21.

9.1.2 XML Conversion

For Content Categorizer to recognize structural properties, the content must be converted to XML (eXtensible Markup Language). The conversion method is a user-defined runtime configuration setting. The variable name is `sccXMLConversion` and its possible values include `Flexiondoc`, `SearchML` and `None`. The `None` value is used for files that are already XML.

The `CC_Sample` directory that was installed with Content Categorizer includes a sample source file named `Wellington_WordStyle.doc` that is "artificially rich" with document properties and styles. The directory also contains sample XML files (`Wellington_WordStyle_flexion.xml` and `Wellington_WordStyle_searchml.xml`) that demonstrate the XML that results when the source document is converted by each of the available XML converters.

Important: There is a problem with the XSLT transformation used to post-process PDF content converted using the Flexiondoc schema. When Flexiondoc schema are used, single words are assigned to individual XML elements, making the final XML unusable. It is therefore necessary to use SearchML for categorizing PDF content.

Regardless of which XML converter is specified, the XML intermediate files are used only by Content Categorizer, so they are discarded after use, and documents are

checked into Content Server in their original source form. The only exception is content that is already in XML format, which is not subjected to the translation process.

This section covers the following topics:

- ["Flexiondoc XML Converter"](#) on page 9-3
- ["SearchML XML Converter"](#) on page 9-3

9.1.2.1 Flexiondoc XML Converter

The OutsideIn XML Export technology is used in combination with a custom XSLT style sheet (*flexiondoc_to_scc.xsl*) to produce XML in a two-stage process. In the first stage, the native document is converted to Flexiondoc-formatted XML. In the second stage, the style sheet is used to further refine the XML so that it is searchable by Content Categorizer. Native document properties and text segments are isolated in XML elements, which are named after the corresponding document property, paragraph style, or character style.

9.1.2.2 SearchML XML Converter

The OutsideIn technology is used in combination with a custom XSLT style sheet (*searchml_to_scc.xsl*) to produce XML in a two-stage process. In the first stage, the native document is converted to SearchML-formatted XML. In the second stage, the style sheet is used to further refine the XML so that it is searchable by Content Categorizer. Native document properties and text segments are isolated in XML elements, which are named after the corresponding document property or paragraph style. Character styles are not supported by SearchML.

9.1.3 Operating Requirements

To run Content Categorizer, these settings are required:

- Define the XML Conversion method in Content Categorizer as one of these:
 - `sccXMLConversion=Flexiondoc`
 - `sccXMLConversion=SearchML`

See ["Setting XML Conversion Method"](#) on page 9-6.

- Define search rules in the Content Categorizer Admin applet. See ["Defining Search Rules"](#) on page 9-19.
- **Optional:** Define field properties, including default values for the metadata fields in the Content Categorizer Admin Applet. See ["Defining Field Properties \(Optional\)"](#) on page 9-7 for more information.

Important: To use the CATEGORY search rule, you must install, set up and register a categorizer engine before you can define the CATEGORY rule for any metadata fields.

9.1.4 Operating Modes

Content Categorizer can operate in either Interactive mode or Batch mode. All modes require conversion of the source documents into XML intermediate form. However, the process flows of the modes are distinctly different.

- **Interactive** mode integrates Content Categorizer with the Content Check In Form and Info Update Form in Content Server. Users click the **Categorize** button on the form to run Content Categorizer on a single content item. Any value that is returned by Content Categorizer is a "suggested" value, because the contributor can edit or replace the returned value.
- **Batch** mode is used when recategorizing large numbers of documents that are already in the content server repository. The system administrator uses a stand-alone Batch Categorizer utility to run Content Categorizer, and then either performs a "live update" of content metadata or uses the output file from Batch Categorizer as input to the Batch Loader.

This section covers the following topics:

- ["Interactive Mode Process"](#) on page 9-4
- ["Batch Mode: Process"](#) on page 9-5

9.1.4.1 Interactive Mode Process

The following steps occur during the checkin process:

1. A contributor displays the Content Check In Form or the Info Update Form, selects a primary file (only on Content Check In Form), and clicks the **Categorize** button.
2. The Content Check In Form copies the primary file to the Content Server host and calls the Content Categorizer service.
3. Content Categorizer locates the source content.
4. If the content is already in XML format, no translation occurs, and the process continues at step 6.
5. If the content is not already in XML format, it will be converted using the specified conversion method:
 - Flexiondoc
 - The content is converted into Flexiondoc-formatted XML.
 - The XML is translated into "Content Categorizer-friendly" XML, using `flexiondoc_to_scc.xsl`.
 - SearchML
 - The content is converted into SearchML-formatted XML.
 - The XML is translated into "Content Categorizer-friendly" XML, using `searchml_to_scc.xsl`.
6. Content Categorizer applies the search rules to the XML and obtains suggested values for the specified metadata fields.
7. Content Categorizer inserts the suggested metadata values into the Content Check In Form or Update Info Form, and returns the form to the contributor.
8. The contributor can check in or submit the document with the suggested values, revise the metadata values, or cancel the checkin or update.

If the optional `AddCCToNewCheckin` component is installed and enabled, clicking Check In on the Content Check In Form performs steps 2 through 6, above, and automatically completes the check in process, provided the properties for `dDocTitle` are set to *Override Contents*. If the properties of `dDocTitle` are not set to *Override Contents*, then an alert is displayed requesting that the required field is completed.

Field properties are set using the CC Admin Applet. See "[Defining Field Properties \(Optional\)](#)" on page 9-7.

9.1.4.2 Batch Mode: Process

The system administrator performs the following steps during this process:

1. Run the Batch Categorizer application. The application may also be started in Windows by clicking **Start, Programs, Content Server, <instance_name>**, and **Batch Categorizer**. See the *Oracle Fusion Middleware System Administrator's Guide for Content Server* for details about running applications on UNIX systems.

The [Batch Categorizer Screen](#) is displayed.

2. On the Batch Categorizer screen, define filters and release date information to display a list of content to be categorized. Options on the Batch Categorizer screen (as described in the following steps) enable you to further define the exact content to be categorized.

3. Click **Categorize**.

The [Categorize Existing Screen](#) is displayed.

4. Select Live Update or Batch Loader.

- Use Live Update option to update the data in the repository immediately.
- Use Batch Loader option to create a control file, which is the output of the Content Categorizer process. The file contains an entry for each source document, and contains the values for each metadata field based on the search rules defined in Content Categorizer.

Tip: You can edit/filter this file before submitting it to Batch Loader, or submit it directly to Batch Loader; see next step.

5. To run the Batch Loader utility automatically after the Content Categorizer process is complete, select the **Run Batch Loader** check box.
6. Enter the location and file name for the log file. The log file will contain error information about the Content Categorizer process.
7. Choose **Categorize All** or **Categorize Selected**.
 - Use the Categorize All option to categorize all the content items displayed in the content list.
 - Use the Categorize Selected option to categorize only the selected (highlighted) content items displayed in the content list.
8. Choose to categorize **Latest Revision** or **All Revisions**.
 - Use the Latest Revision option to categorize only the most recent revision of the content items displayed in the content list.
 - Use the All Revisions option to categorize all revisions of the content items displayed in the content list.
9. Choose to continue or discontinue the categorization process when Batch Categorizer encounters an error.
10. Click **OK**. The Progress bar shows the progress as the batch process moves through its steps:

- a. Content Categorizer locates the source content.
 - b. If the content is already in XML format, no translation occurs, and the process continues at step d.
 - c. If the content is not already in XML format, conversion into XML occurs using the selected XML conversion method: Flexiondoc or SearchML.
 - d. Content Categorizer applies the search rules to the XML and obtains values for the specified metadata fields.
 - e. If Live Update was specified, database records are updated immediately. If Batch Loader was specified, an output control file is created, and the Batch Loader utility is run, if the option to do so after processing was specified.
11. When the batch process is complete, review the error logs. Errors encountered by Batch Categorizer are displayed on the console and also recorded in the batch categorizer log (if specified). Errors encountered by Batch Loader are displayed on the console and also recorded in the Content Server system log.

If the optional AddCCToArchiveCheckin component is installed and enabled, all content loaded into content server using the Batchloader utility is categorized automatically, based on predefined rule sets. For more information about defining rule sets, see.

9.2 Setting Up Content Categorizer

Before using Content Categorizer, you must install and configure the necessary software.

This section covers the following topics:

- ["Setting XML Conversion Method"](#) on page 9-6
- ["Defining Field Properties \(Optional\)"](#) on page 9-7
- ["Configuration Variable"](#) on page 9-7

9.2.1 Setting XML Conversion Method

When operating in Interactive mode or Batch mode, the method that Content Categorizer uses to convert native documents into XML is set as a runtime configuration parameter.

To set the XML conversion method in Content Categorizer:

1. Log into the Content Server as the system administrator.
2. Click the **Administration** link.
3. Click the **Content Categorizer Administration** link (under Administration Pages for *instance_name*).

The [Content Categorizer Admin Applet Page](#) is displayed.

4. On the Configuration tab, select the **sccXMLConversion** property and click **Edit**, or double-click the property.

The [Property Config Screen](#) is displayed.

5. From the drop-down list, select the desired XML conversion method:
 - Flexiondoc
 - SearchML

6. Click **OK**.
7. Click **Apply** to save the changes, or click **OK** to save the changes and close the CC Admin Applet, Defining Field Properties

9.2.2 Defining Field Properties (Optional)

When any rule for a field succeeds, the found value is used (in either Batch Loader operations or Live Update operations). However, depending on how the Override value is set, the found value will not override the existing value (Override is set to false).

When all rules for a field fail, no value is assigned to the field. This is applicable unless a default value is defined for the field and Use Default is set to true.

Important: The Content Server Batch Loader utility will fail any insert action that does not have a value for a required field.

To define field properties for the metadata fields in your system:

1. Open the Content Categorizer Admin Applet.
2. Click the Field Properties tab.
3. Select a metadata field to be edited and click **Edit**, or double-click the field.

The [Field Properties Screen](#) is displayed.

4. Enter a default value for the field.

The default value for an option list field must match one of the values available for that field.

5. Select the Override check box if you want the value returned by the categorization process to override an existing value for the field.
6. Select the Use Default check box if you want the field's default value to be used if all rules fail (or are not defined) when the categorization process runs.
7. Click **OK**.
8. Repeat steps 3 through 7 for each field to be edited.
9. Click **Save Settings** to save the changes.

9.2.3 Configuration Variable

The MaxQueryRows variable is a Content Server configuration variable and is used to specify the maximum number of documents that can be included in a single batch load process. As such, it affects how many documents a user will see in BatchCategorizer.

The default setting for this configuration variable is 200 but can be decreased or increased as necessary. Increasing the value will slow the response time for loading a large list of documents. Although the impact of setting MaxQueryRows to something in the range of 1000 to 2000 is minor, setting it in the area of 100,000 would probably produce an unacceptable performance level.

The format for this variable is as follows:

```
MaxQueryRows=2000
```

9.3 Search Rules

This section covers the following topics:

- ["Understanding Search Rules"](#) on page 9-8
- ["Pattern Matching Search Rules"](#) on page 9-9
- ["Abstract Search Rules"](#) on page 9-12
- ["Option List Search Rule"](#) on page 9-14
- ["Categorization Engine Search Rule"](#) on page 9-17
- ["Filetype Search Rule"](#) on page 9-18
- ["Defining Search Rules"](#) on page 9-19

9.3.1 Understanding Search Rules

Search rules define how Content Categorizer determines metadata values to return to the Content Check In Form or Info Update Form (for Interactive mode) or the batch file (for Batch mode).

Every search rule is defined by:

- A **rule type**, which determines the method that Content Categorizer uses to search the XML document.
- A **key**, which defines the XML element, phrase, or keyword that Content Categorizer looks for in the document, or the categorization engine/taxonomy that Content Categorizer uses to classify the document.
- A **count**, which is used to refine the search criteria.

Keys and counts are explained in more detail in the Help topics for each search rule type.

This section covers the following topics:

- ["Search Rule Types"](#) on page 9-8
- ["Search Rule Guidelines"](#) on page 9-9

9.3.1.1 Search Rule Types

Metadata values can be derived using these methods:

- A Pattern Matching search rule looks for specific text or a specific XML element and returns an associated value.
- An Abstract search rule looks for an XML element and returns a descriptive sentence or paragraph from that element.
- An Option List search rule looks for keywords within the source document, applies a score for each keyword found, and returns the option list value that has the highest keyword score.
- A Categorization Engine search rule uses a third-party categorization engine and a defined taxonomy to determine appropriate metadata values.
- A Filetype search rule examines the filename extension of the primary file and returns a term associated with that filename extension.

9.3.1.2 Search Rule Guidelines

- Search rules can be applied to any custom metadata field.
- Search rules can be applied to the Title, Comments, and Type standard metadata fields. Search rules cannot be defined for any other standard metadata fields (such as Author, Security Group, and Account).
- Multiple search rules can be defined for a metadata field. (For a single metadata field, however, multiple CATEGORY rules that refer to different taxonomies are not supported.)
- Multiple search rules are run in the order specified, so that if a search rule does not result in a suggested value, the next rule is run. The list should be arranged from most to least specific.
- Search rule types can be mixed within a metadata field. For example, you can define an Option List rule, a Pattern Matching rule, and an Abstract rule for the same metadata field.
- If none of the search rules specified for a metadata field can be satisfied, the field is left blank.

9.3.2 Pattern Matching Search Rules

Pattern Matching search rules look for specific text or a specific XML element and return an associated value. For example, the *Invoice #* metadata field can be filled by the value that follows an *Invoice:* or *Invoice Number:* label in the source document, or it can be filled by the value that is within the `<Invoice>` tag in the XML document.

This section covers the following topics:

- ["Rule Types"](#) on page 9-9
- ["Key"](#) on page 9-10
- ["Count"](#) on page 9-10
- ["Examples"](#) on page 9-10

9.3.2.1 Rule Types

There are two general types of Pattern Matching rules: Tag Search and Text Search.

- Tag Search searches for an XML element that exactly matches the key. If such an element is found, the text contained in the element is returned as the result.
- Text Search searches for text that matches the key. If such text is found, the text near or following the key is returned as the result.

Tag Searches are case sensitive. Text Searches are not case sensitive.

Sub-Types

Within each of the two general types of Pattern Matching search rules, there are several sub-types. These sub-types are explained in more detail in the Examples section below.

Tag Search

- TAG_TEXT
- TAG_ALLTEXT

Text Search

- TEXT_REMAINDER
- TEXT_ALLREMAINDER
- TEXT_FULL
- TEXT_ALLFULL
- TEXT_NEXT
- TEXT_ALLNEXT

9.3.2.2 Key

The key for a Pattern Matching search rule is either an XML element (for a Tag Search) or a text phrase (for a Text Search).

9.3.2.3 Count

The count for a Pattern Matching search rule defines the number of tags or text phrases that must be matched before the rule returns results. For example, a count of 4 will look for the fourth occurrence of the key. If only three occurrences of the key are found in the document, the rule fails.

The default count of 1 returns the first occurrence of the key.

9.3.2.4 Examples

The following examples illustrate the use of the Pattern Matching search rules.

This section covers the following topics:

- ["TAG_TEXT"](#) on page 9-10
- ["TAG_ALLTEXT"](#) on page 9-10
- ["TEXT_REMAINDER"](#) on page 9-11
- ["TEXT_ALLREMAINDER"](#) on page 9-11
- ["TEXT_FULL"](#) on page 9-11
- ["TEXT_ALLFULL"](#) on page 9-11
- ["TEXT_NEXT"](#) on page 9-12
- ["TEXT_ALLNEXT"](#) on page 9-12

9.3.2.4.1 TAG_TEXT TAG_TEXT searches for an XML element name that matches the key exactly (including case). If such an element is found, all text that belongs to the element is concatenated and returned as the result.

- **Content:** <TAG_A>Title: The Big <TAG_B>Bad</TAG_B> Wolf</TAG_A>
<TAG_C>Subtitle: A <TAG_D>Morality</TAG_D> Play</TAG_C>
- **Rule:** TAG_TEXT
- **Key:** TAG_A
- **Returns:** Title: The Big Wolf

9.3.2.4.2 TAG_ALLTEXT TAG_ALLTEXT searches for an XML element name that matches the key exactly (including case). If such an element is found, all text that belongs to the element, and to all children of the element, is concatenated and returned as the result.

- **Content:** <TAG_A>Title: The Big <TAG_B>Bad</TAG_B> Wolf</TAG_A>
<TAG_C>Subtitle: A <TAG_D>Morality</TAG_D> Play</TAG_C>
- **Rule:** TAG_ALLTEXT
- **Key:** TAG_A
- **Returns:** Title: The Big Bad Wolf

9.3.2.4.3 TEXT_REMAINDER TEXT_REMAINDER searches for text that matches the key exactly (except for case). If such text is found, any text following the key that belongs to the same XML element is returned as the result.

- **Content:** <TAG_A>Title: The Big <TAG_B>Bad</TAG_B> Wolf</TAG_A>
TAG_C>Subtitle: A <TAG_D>Morality</TAG_D> Play</TAG_C>
- **Rule:** TEXT_REMAINDER
- **Key:** Title
- **Returns:** The Big Wolf

9.3.2.4.4 TEXT_ALLREMAINDER TEXT_ALLREMAINDER searches for text that matches the key exactly (except for case). If such text is found, any text following the key that belongs to the same XML element, and to all children of the element, is returned as the result.

- **Content:** TAG_A>Title: The Big <TAG_B>Bad</TAG_B> Wolf</TAG_A>
<TAG_C>Subtitle: A <TAG_D>Morality</TAG_D> Play</TAG_C>
- **Rule:** TEXT_ALLREMAINDER
- **Key:** Title:
- **Returns:** The Big Bad Wolf

9.3.2.4.5 TEXT_FULL TEXT_FULL searches for text that matches the key exactly (except for case). If such text is found, any text that belongs to the same XML element, including the key text, is returned as the result.

- **Content:** <TAG_A>Title: The Big <TAG_B>Bad</TAG_B> Wolf</TAG_A>
<TAG_C>Subtitle: A <TAG_D>Morality</TAG_D> Play</TAG_C>
- **Rule:** TEXT_FULL
- **Key:** Title:
- **Returns:** Title: The Big Wolf

9.3.2.4.6 TEXT_ALLFULL TEXT_ALLFULL searches for text that matches the key exactly (except for case). If such text is found, any text that belongs to the same XML element, including the key text and any text belonging to children of the element, is returned as the result.

- **Content:** <TAG_A>Title: The Big <TAG_B>Bad</TAG_B> Wolf</TAG_A>
<TAG_C>Subtitle: A <TAG_D>Morality</TAG_D> Play</TAG_C>
- **Rule:** TEXT_ALLFULL
- **Key:** Title:
- **Returns:** Title: The Big Bad Wolf

9.3.2.4.7 TEXT_NEXT TEXT_NEXT searches for text that matches the key exactly (except for case). If such text is found, any text that belongs to the next non-blank XML element is returned as the result. Blank elements and elements composed of non-printing characters will not be selected as the return value.

- **Content:** <TAG_A>Title: The Big <TAG_B>Bad</TAG_B> Wolf</TAG_A>
<TAG_C>Subtitle: A <TAG_D>Morality</TAG_D> Play</TAG_C>
- **Rule:** TEXT_NEXT
- **Key:** Title:
- **Returns:** Subtitle: A Play

9.3.2.4.8 TEXT_ALLNEXT TEXT_ALLNEXT searches for text that matches the key exactly (except for case). If such text is found, any text that belongs to the next non-blank XML element, and to all children of the element, is returned as the result. Blank elements and elements composed of non-printing characters will not be selected as the return value.

- **Content:** <TAG_A>Title: The Big <TAG_B>Bad</TAG_B> Wolf</TAG_A>
<TAG_C>Subtitle: A <TAG_D>Morality</TAG_D> Play</TAG_C>
- **Rule:** TEXT_ALLNEXT
- **Key:** Title:
- **Returns:** Subtitle: A Morality Play

9.3.3 Abstract Search Rules

Abstract search rules look for an XML element and return a descriptive sentence or paragraph from that element. For example, the *Summary* metadata field could be filled by a returned value of "Germany is a large country in size, culture, and worldwide economics. One of Germany's largest industries includes the manufacturing of world class automobiles like BMW, Mercedes, and Audi."

The Abstract rule type is useful where there is no readily identifiable or explicitly tagged block of text in the content item. Typically, these rules are used to suggest summary or topic information about the document.

This section covers the following topics:

- ["Rule Types"](#) on page 9-12
- ["Key"](#) on page 9-13
- ["Count"](#) on page 9-13
- ["Examples"](#) on page 9-13

9.3.3.1 Rule Types

There are two Abstract search rules: First Paragraph and First Sentence.

- **First Paragraph** searches for an XML element that exactly matches the key. The entire paragraph of the first such element that meets the size criteria (specified by the count) is returned as the result.
- **First Sentence** searches for an XML element that exactly matches the key. If such an element is found, the first sentence of the element is returned as the result.

9.3.3.2 Key

The key for an Abstract search rule is an XML element.

9.3.3.3 Count

The count is interpreted differently for the First Paragraph and First Sentence search rules.

First Paragraph

For a First Paragraph search rule, the count is a size threshold measured in percent:

1. The rule searches the document for all paragraphs that match the key.
2. The rule calculates the average size (based on character count) of the paragraphs that match the key.
3. The rule multiplies the average size by the count percentage (0 = 0%, 100 = 100%).
4. The rule looks for the first paragraph larger than the resulting number.

For example, if the count is set to 75 and the average paragraph size is 100 characters, the rule returns the first paragraph larger than 75 characters that matches the key.

If the count is set to the default of 1, the rule is likely to return the first paragraph that matches the key.

First Sentence

For a First Sentence search rule, the count is the number of elements that have their first sentences returned.

For example, if the count is set to 3, the rule returns the first sentence from each of the first three elements that match the key.

9.3.3.4 Examples

The following examples illustrate the use of the Abstract search rules:

- ["FIRST_PARAGRAPH"](#) on page 9-13
- ["FIRST_SENTENCE"](#) on page 9-14

9.3.3.4.1 FIRST_PARAGRAPH This example returns the first <Text> element that exceeds one-half the average <Text> element paragraph size. Note that the <Title> element does not match the key value, so it is ignored for both the search and for the average length calculation.

- **Content:** <Title>Poem</Title>
<Text>Mary had</Text>
<Text>a little Lamb</Text>
<Text>The fleece was white as snow</Text>
<Text>And everywhere that Mary went the lamb was sure to go</Text>
- **Rule:** FIRST_PARAGRAPH
- **Key:** Text
- **Count:** 50
- **Returns:** The fleece was white as snow.

9.3.3.4.2 FIRST_SENTENCE This example returns the first sentence of the first two <Text> elements. Note that the <Title> element does not match the key value, so it is excluded from the search.

- **Content:** x<Title>Barefoot in the Park</Title>
<Text>See Dick run. See Jane run. See Dick and Jane.</Text>
<Text>See Spot run. See Puff chase Spot.</Text>
<Text>See Dick chase Spot and Puff.</Text>
- **Rule:** FIRST_SENTENCE
- **Key:** Text
- **Count:** 2
- **Returns:** See Dick run. See Spot run.

9.3.4 Option List Search Rule

The Option List search rule, named `OPTION_LIST`, looks for keywords within the source document, applies a score for each keyword found, and returns the option list value that has the highest keyword score. For example, if the keywords *margin*, *SEC filing*, or *invoice* were found in a document, the suggested value for the *Department* field would be *Accounting*, while the keywords *tolerance*, *assembly*, or *inventory* would return *Manufacturing* as the suggested value.

- The Option List search rule will usually be applied to metadata fields that have an option list defined in the Configuration Manager. See the Content Server online help for information on creating option lists for custom metadata fields.
- Option list names and values (called **categories** in Content Categorizer) appear in Content Categorizer as specified in the Configuration Manager. If you create or change a custom option list field while the CC Admin Applet is open, you will need to close and reopen the applet to see the changes.
- The current version of Content Server automatically inserts a blank value as the default value in a custom option list field. In this case, the first value (by default, a blank value) will not be considered a user-entered value, and the Option List search rule will be applied. If you do not want the Option List search rule to override the first value in a custom option list field, you must provide a default value for that option list on the Configuration Manager Applet.

This section covers the following topics:

- ["Rule Types"](#) on page 9-14
- ["Key"](#) on page 9-15
- ["Count"](#) on page 9-15
- ["Examples"](#) on page 9-15

9.3.4.1 Rule Types

There is one type of Option List search rule, which searches for keywords (single words or phrases) that exactly match the keywords defined in the key.

- Keywords may be single words (for example, *dog*) or multiple-word phrases (for example, *black dog*).
- Keywords may use the following defined set of operators to further refine a search:

- \$\$AND\$\$
- \$\$OR\$\$
- \$\$AND_NOT\$\$
- \$\$NEAR\$\$
- Keywords are pre-assigned to each category (value) in the option list, and each keyword has a weight assigned to it. See "[Defining Option List Keywords](#)" on page 9-20.
- The number of occurrences of each keyword found in the document is multiplied by its weight, resulting in a keyword score.
- The keyword scores for each category are added together, resulting in a category score.
- The category with the highest score is returned as the suggested value.
- If there is a tie between categories, the category earliest in the option list is returned as the suggested value.
- The weights *Always* and *Never* can be used to override the scores and count threshold.
 - An occurrence of a keyword with the *Always* weight forces the category to be returned as the suggested value, regardless of score.
 - An occurrence of a keyword with the *Never* weight disqualifies the category from being returned as the suggested value, regardless of score.
 - If two categories have keywords that are assigned the *Always* weight, and both keywords occur in the document, the keyword first found in the document takes precedence.

Important: Option List searches are case sensitive and must match exactly. For example, *Invoice*, *Invoices*, *invoice*, and *invoices* must be defined to retrieve all instances of this keyword.

9.3.4.2 Key

The key for an Option List search rule is the Option List name, as shown on the Option Lists tab of the CC Admin Applet.

9.3.4.3 Count

The count for an Option List search rule sets a minimum threshold score for the rule to return results. For example, if the count is set to 50, and the highest accumulated keyword score is 45, the rule fails.

9.3.4.4 Examples

This section provides examples about the Option List search rule.

Example 1

In this example, the score for *Dick* and *Spot* is 30 (3 occurrences x 10), and the score for *Jane* and *Puff* is 20 (2 occurrences x 10). *Dick* is returned as the suggested value because it is earlier in the option list than *Spot*:

- **Content:** <Title>Barefoot in the Park</Title>

<Text>See Dick run. See Jane run. See Dick and Jane.</Text>

<Text>See Spot run. See Puff chase Spot.</Text>

<Text>See Dick chase Spot and Puff.</Text>

- **Rule:** OPTION_LIST
- **Key:** MainCharacter
- **Count:** 10
- **Option List Categories, Keywords, and Weight:** Dick: Dick=10, boy=5, Richard=2
Jane: Jane=10, girl=5, Janie=2
Spot: Spot=10, dog=5
Puff: Puff=10, cat=5
- **Returns:** Dick

Example 2

In this example, *Spot* is returned as the suggested value because its score of 60 (3 occurrences x 20) is higher than the other categories:

- **Content:** <Title>Barefoot in the Park</Title>
<Text>See Dick run. See Jane run. See Dick and Jane.</Text>
<Text>See Spot run. See Puff chase Spot.</Text>
<Text>See Dick chase Spot and Puff.</Text>
- **Rule:** OPTION_LIST
- **Key:** xMainCharacter
- **Count:** 10
- **Option List Categories, Keywords, and Weight:** Dick: Dick=10, boy=5, Richard=2
Jane: Jane=10, girl=5, Janie=2
Spot: Spot=20, dog=10
Puff: Puff=10, cat=5
- **Returns:** Spot

Example 3

In this example, the rule fails because none of the scores is above the Count threshold of 50:

- **Content:** <Title>Barefoot in the Park</Title>
<Text>See Dick run. See Jane run. See Dick and Jane.</Text>
<Text>See Spot run. See Puff chase Spot.</Text>
<Text>See Dick chase Spot and Puff.</Text>
- **Rule:** OPTION_LIST
- **Key:** MainCharacter
- **Count:** 50
- **Option List Categories, Keywords, and Weight:** Dick: Dick=10, boy=5, Richard=2

Jane: Jane=10, girl=5, Janie=2

Spot: Spot=10, dog=5

Puff: Puff=10, cat=5

- **Returns:** Fail

Example 4

In this example, *Puff* is returned as the suggested value because the keyword "Puff" has a weight of Always:

- **Content:** <Title>Barefoot in the Park</Title>

<Text>See Dick run. See Jane run. See Dick and Jane.</Text>

<Text>See Spot run. See Puff chase Spot.</Text>

<Text>See Dick chase Spot and Puff.</Text>

- **Rule:** OPTION_LIST
- **Key:** MainCharacter
- **Count:** 10
- **Option List Categories, Keywords, and Weight:** Dick: Dick=10, boy=5, Richard=2

Jane: Jane=10, girl=5, Janie=2

Spot: Spot=10, dog=5

Puff: Puff=Always, cat=5

- **Returns:** Puff

9.3.5 Categorization Engine Search Rule

The Categorization Engine search rule, named CATEGORY, uses a 3rd-party categorizer engine and defined taxonomy to determine and return a value that represents a category within the specified taxonomy, for example, News/Technology/Computers.

This section covers the following topics:

- ["Rule Types"](#) on page 9-17
- ["Key"](#) on page 9-17
- ["Count"](#) on page 9-18

9.3.5.1 Rule Types

There is one type of Categorization Engine search rule, which uses the categorizer engine and taxonomy specified in the Key to return a value for the field.

9.3.5.2 Key

The key for a Categorization Engine search rule is the name of the categorizer engine followed by the name of the taxonomy. For example, *EngineName/TaxonomyName*.

If you do not specify an engine name in the Key field, Content Categorizer defaults to the first engine displayed in the Categorizer Engines list. Therefore, if you have defined only one engine, you would only need to enter the taxonomy name in the Key field.

9.3.5.3 Count

The count for a Categorization Engine search rule sets a minimum confidence level threshold for the returned results.

When a categorization engine returns a category (or set of categories) for a given query, a confidence level is also returned, which is often expressed as a percentage for each category. The Category rule always accepts the highest-confidence category, **unless** the confidence level is below the count value specified for the rule, in which case the rule fails. For example, if the count is set to 50, and the highest-confidence category returned is 45, the rule fails.

The default count of 1 would always accept the highest-confidence category returned by the categorizer engine.

The actual range for the Count value depends on the categorizer engine that is being used.

9.3.6 Filetype Search Rule

The Filetype search rule, named FILETYPE, looks at the filename extension of a document and returns a term, usually a file type description associated with the filename extension.

This section covers the following topics:

- ["Rule Types"](#) on page 9-18
- ["Key"](#) on page 9-18
- ["Count"](#) on page 9-18
- ["Examples"](#) on page 9-19

9.3.6.1 Rule Types

There is one type of Filetype search rule, which uses the filename extension of the primary (native) file to return a value for the field.

When the Filetype search rule is defined for a metadata field, the filename extension of the content item is matched against all values in the Content Server's DocFormatsWizard table. This table is found in the file doc_config.htm, which is located in the *IntradocDir*/shared/config/resources/ directory.

If a match is found, the associated value in the Description column is extracted and translated. The resulting string is returned as the suggested metadata value for the field.

If the primary file path has no extension, or if the extension does not match any of the "extensions" values in the DocFormatsWizard table, the rule fails and the next rule in the list for the metadata field is executed.

9.3.6.2 Key

The key for a FILETYPE search rule is not used when determining a metadata value. **The Key field should be left blank.**

9.3.6.3 Count

The count for a FILETYPE search rule is not used when determining a metadata value. **The Count field should be left blank.**

If a FILETYPE rule is created with non-blank Key or Count fields, a warning message is displayed indicating that these fields are not supported by the rule.

9.3.6.4 Examples

This section provides examples about the Filetype Search rule.

Example 1

- **Primary File:** policies.doc
- **Rule:** FILETYPE
- **Key:** blank
- **Count:** blank
- **Returns:** Microsoft Word Document

Example 2

- **Primary File:** procedures.wpd
- **Rule:** FILETYPE
- **Key:** blank
- **Count:** blank
- **Returns:** Corel WordPerfect Document

9.3.7 Defining Search Rules

This section covers the following topics:

- ["Defining Search Rules"](#) on page 9-19
- ["Defining Option List Keywords"](#) on page 9-20
- ["Applying Rules to the Type Field"](#) on page 9-21

9.3.7.1 Defining Search Rules

During Content Server startup, Content Categorizer takes a snapshot of the current metadata field configuration including field names and lengths. If your metadata field configuration changes, you must restart Content Server before running the Content Categorizer Admin Applet to add or modify any search rules.

To define search rules for any metadata field:

1. Log into the Content Server as the system administrator.
2. Click the **Administration** link.
3. Click the **Content Categorizer Administration** link (under Administration Pages for *instance_name*).

The [Content Categorizer Admin Applet Page](#) is displayed.

4. Click the Rule Sets tab.
5. Click on the Ruleset drop-down list and select the desired ruleset, or click Add to add a new ruleset.
6. Select a metadata field from the **Field** choice list.
7. Click **Add**.

The [Add/Edit Rule for Field Screen](#) is displayed.

8. Select the rule type from the **Rule** choice list.
9. Enter the search rule key in the **Key** field. For an OPTION_LIST search rule, keywords for the option list must be defined on the Option List tab. See "[Defining Option List Keywords](#)" on page 9-20.
10. Enter the count in the **Count** field.
11. Click **OK**.
12. Add search rules to each metadata field as desired.
 - To delete a rule, select the rule in the **Rules List** and click **Delete**.
 - To edit a rule, select the rule in the **Rules List** and click **Edit**.
 - To adjust the order of the rules, select the rule in the **Rules List** and click **Move Up** or **Move Down**. Rules are applied in the order listed. If the first rule succeeds, no other rules are applied. If the first rule fails, then the next rule is applied, and so forth.

Important: If you have added, edited, or deleted a CATEGORY rule, a dialog will prompt you to apply the changes and build, rebuild, or check for orphaned query trees for this rule on the Query Trees tab.

13. Click **Apply** to save the changes, or click **OK** to save the changes and close the CC Admin Applet screen.

9.3.7.2 Defining Option List Keywords

To define the keywords and weights for an option list:

1. Log into the Content Server as the system administrator.
2. Click the **Administration** link.
3. Click the **Content Categorizer Administration** link (under Administration Pages for *instance_name*).

The [Content Categorizer Admin Applet Page](#) is displayed.
4. Click the Option Lists tab.
5. Select an option list from the **Option List** choice list.

Caution: When an option list metadata field is deleted from the Configuration Manager, the field is removed from the Rule Sets tab, but it still appears in the Option List choice list on the Option Lists tab. Be careful not to select an obsolete option list.

6. Select a value from the **Category** choice list.
7. Enter a keyword or phrase in the **Keyword** field. Option List searches are case sensitive and must match exactly.
 - Keywords may be single words or multiple-word phrases.
 - Keywords may include Boolean-type expressions, where the following set of binary operators are valid: \$\$AND\$\$, \$\$OR\$\$, \$\$AND_NOT\$\$, \$\$NEAR\$\$

8. Select a weight for the keyword.
 - **Always** = If the keyword is found, the selected category will be returned as the suggested value, regardless of the score.
 - **Weight** = This number multiplied by the number of occurrences of the keyword is the category's score. The category with the highest score is returned as the suggested value for the option list field.
 - **Never** = If the keyword is found, the selected category will not be returned as the suggested value, regardless of the score.
9. Click **Add**.
10. Enter keywords for each category in the selected option list.
 - To delete a keyword, select the keyword in the **Keywords** list and click **Delete**.
 - To edit a keyword, select the keyword in the **Keywords** list, click **Edit**, edit the keyword and/or the weight, and click **Update**.
11. Click **Apply** to save the changes, or click **OK** to save the changes and close the CC Admin Applet screen.

9.3.7.3 Applying Rules to the Type Field

You can edit the content server configuration file so that Content Categorizer ignores the **Type** default value and applies search rules to the **Type** field.

This procedure applies only to the **Type** (dDocType) field. Search rules cannot be applied to the other standard option list fields (Security Group, Author, and Account).

To apply search rules to the Type field:

1. Open the config.cfg file located in the *IntradocDir*/config/ directory in a text-only editor such as WordPad.
2. Add the following line to the file:


```
ForceDocTypeChoice=true
```
3. Save and close the file.
4. Stop and restart the Content Server.

9.4 Sample doc_config.htm Page

The following is a sample doc_config.htm page.

```
<@table DocFormatsWizard@>
```

dFormat	Extensions	dConversion	dDescription
application/ corel-wordperfect, application/wordperfect	wpd	WordPerfect	apWordPerfectDesc
application/ vnd.frameMaker	fm	FrameMaker	apFramemakerDesc
application/ vnd.framebook	bk, book	FrameMaker	apFrameMakerDesc

dFormat	Extensions	dConversion	dDescription
application/vnd.mif	mif	FrameMaker	apFrameMakerInterchangeDesc
application/lotus-1-2-3	123, wk3, wk4	123	apLotus123Desc
application/lotus-freelance	prz	Freelance	apLotusFreelanceDesc
application/lotus-wordpro	lwp	WordPro	apLotusWordProDesc
application/msword, application/ms-word	doc, dot	Word	apMicrosoftWordDesc
application/vnd.ms-excel, application/ms-excel	xls	Excel	apMicrosoftExcelDesc
application/ vnd.ms-powerpoint, application/ms-powerpoint	ppt	PowerPoint	apMicrosoftPowerPointDesc
application/vnd.ms-project, application/ms-project	mpp	MSPProject	apMicrosoftProjectDesc
application/ms-publisher	pub	MSPub	apMicrosoftPublisherDesc
application/write	wri	Word	apMicrosoftWriteDesc
application/rtf	rtf	Word	apRtfDesc
application/vnd.visio	vsd	Visio	apVisioDesc
application/vnd.illustrator	ai	Illustrator	apIllustratorDesc
application/vnd.photoshop	psd	PhotoShop	apPhotoshopDesc
application/vnd.pagemaker	p65	PageMaker	apPageMakerDesc
image/gif	drw, igx, flo, abc, igt	iGrafX	apiGrafXDesc
text/postscript	ps	Distiller	apDistillerDesc
application/hangul	hwp	Hangul97	apHangul97Desc
application/ichitaro	jtd, jtt	Ichitaro	apIchitaroDesc
image/graphic	gif, jpeg, jpg, png, bmp, tiff, tif	ImageThumbnail	apThumbnailsDesc
image/application	txt, eml, msg	NativeThumbnail	apNativeThumbnailsDesc

<@end@>
<@table PdfConversions@>

dFormat	Extensions	dConversion	dDescription
application/pdf	pdf	PDFOptimization	apPdfOptimization
application/pdf	pdf	ImageThumbnail	apPdfThumbnailsDesc

<@end@>

9.5 XSLT Transformation

Content Server uses a two-step process for categorizing content. The first step translates content into an XML format, the second step transforms the XML file into another XML file useful to Content Categorizer. The process is transparent in that the

original content is not modified, and both the translated and transformed XML files are discarded after use.

This section covers the following topics:

- "Translation" on page 9-23
- "Transformation Using XSLT Stylesheets" on page 9-23
- "SearchML Transformation" on page 9-24
- "Flexiondoc Transformation" on page 9-25
- "Example Files" on page 9-27

9.5.1 Translation

The translation step uses the OutsideIn XML Export filters to output the XML in either SearchML or Flexiondoc XML format, depending on the type of content being translated and whether the format is available for the platform being used. This translation process enables Categorizer to support a large number of different source document formats.

The transformation step uses eXtensible Stylesheet Language Transformations (XSLT) to transform the initial XML output into an XML equivalent that can be easily searched and analyzed by Content Categorizer, based on search rules defined by the user.

An overview of the transformation process may be useful to anyone interested in the categorization process, and serve as a starting point for users who would like to define their own XSLT stylesheets to accommodate their specific document processing needs.

Translation Using OutsideIn XML Export Filters

A runtime version of the OutsideIn XML Export product is integrated and installed with Content Server, and it filters content checked in for categorization. The Export filters convert content to XML for transformation using Categorizer's XSLT stylesheets. The transformation is necessary because the Export XML schemas, Flexiondoc and SearchML, are not in a form easily searched by Content Categorizer rules.

9.5.2 Transformation Using XSLT Stylesheets

Two stylesheets are included with Content Categorizer and applied based on the initial translation format provided by the OutsideIn XML Export filter. The stylesheets are located in the following directory.

```
/<cs_root>/data/contentcategorizer/stylesheets/
```

For content items output in SearchML, *searchml_to_scc.xsl* is applied. For content items output in Flexiondoc, *flexiondoc_to_scc.xsl* is applied. SearchML and Flexiondoc both reproduce style designations found in the source content, but they do so differently, in ways not detectable by Content Categorizer rules. The appropriate stylesheet can recognize the necessary style information in each format and use that information as the basis for transforming the final output tags into an XML document useful to Content Categorizer.

The similarity between SearchML and Flexiondoc depends on the degree to which internal styles or metadata are used in the content. When working with content using named styles, such as Microsoft Word, the resultant output will be similar. When working with content in formats such as PDF or text, results come out with more generic tagging.

Important: There is a problem with the XSLT transformation used to post-process PDF content that is output in Flexiondoc format. When Flexiondoc is used, single words are assigned to individual XML elements, making the final XML unsuitable for most Categorizer search rules. It is therefore recommended that you use SearchML for categorizing PDF content.

9.5.3 SearchML Transformation

When the OutsideIn XML Export filter translates content into SearchML XML format, it identifies the properties of the content item, such as title, subject, and author, and tags them as a `<doc_property>` element. It distinguishes the properties by a `type` attribute. It also identifies document text and tags it as a `<p>` element. It distinguishes styles within text by an `s` attribute.

Document Properties and Text Style Examples

For example, using the *Wellington_WordStyle.doc* example found in the *IntradocDir/custom/ContentCategorizer/CC_Sample/* directory, the file's author property, "Duke of Wellington," is tagged in the SearchML XML output as:

```
<doc_property type="author">Duke of Wellington</doc_property>
```

The first paragraph of the item, listing the date, would be tagged as:

```
<p>Date: August 24, 1812</p>
```

Note that no style attribute is defined.

Applying the *searchml_to_scc.xsl* stylesheet to the translated XML file searches the XML for all `<doc_property>` tags and uses the `type` attribute as the suffix for the transformed output tag used as a key in a Content Categorizer rule.

For example, the following code in the *searchml_to_scc.xsl* stylesheet would take the tag:

```
<doc_property type="author">Duke of Wellington</doc_property>
```

and output

```
<scc_author>Duke of Wellington</scc_author>
```

```
<xsl:template match="sml:doc_property[@type]">
  <xsl:variable name="typeValue">
    xsl:value-of select="@type"/>
  </xsl:variable>
  <xsl:element name="scc_{translate($typeValue, $translateFrom, $translateTo)}">
    <xsl:value-of select="."/>
  </xsl:element>
</xsl:template>
```

Similarly, the *searchml_to_scc.xsl* stylesheet also causes the XML file to be searched for all `<p>` tags and uses the `s` attribute as the suffix for the transformed output tag used as a key in a Content Categorizer rule. Where no style attribute is defined, the transformation passes the `<p>` tag through.

9.5.4 Flexiondoc Transformation

When the OutsideIn XML Export filter translates content into Flexiondoc XML format, it identifies the properties of the content item, such as title, subject, and author, and tags them as a `<doc_property>` element, just like SearchML. However, it distinguishes the properties by a name attribute, instead of type.

This section covers the following topics:

- ["Document Properties Example"](#) on page 9-25
- ["Text Style Example"](#) on page 9-25

9.5.4.1 Document Properties Example

For example, using the *Wellington_WordStyle.doc* example found in the *IntradocDir/custom/ContentCategorizer/CC_Sample/* directory, the file's author property, "Duke of Wellington," is tagged in the Flexiondoc XML output as:

```
<doc_property name="author">Duke of Wellington</doc_property>
```

Applying the *flexiondoc_to_scc.xsl* stylesheet to the translated XML file searches the XML for all `<doc_property>` tags and uses the name attribute as the suffix for the transformed output tag used as a key in a Content Categorizer rule.

For example, the following code in the *flexiondoc_to_scc.xsl* stylesheet would take the tag,

```
<doc_property name="author">Duke of Wellington</doc_property>
```

and output

```
<scc_author>Duke of Wellington</scc_author>
```

```
<xsl:template match="fld:doc_property">
  <xsl:variable name="propName">
    <xsl:choose>
      <xsl:when test="@name">
        <xsl:value-of select="@name" />
      </xsl:when>
      <xsl:when test="@user_defined_name">
        <xsl:value-of select="@user_defined_name" />
      </xsl:when>
      <xsl:otherwise>NAMELESS_DOC_PROPERTY_WITH_ID_<xsl:value-of select="@id" />
    </xsl:otherwise>
  </xsl:variable>
  <xsl:element name="scc_{translate($propName, $translateFrom, $translateTo)}">
    <xsl:value-of select="." />
  </xsl:element>
</xsl:template>
```

9.5.4.2 Text Style Example

Where Flexiondoc differs from SearchML is in how it identifies styles. Paragraph styles are tagged with `<tx.p>` tags, and character styles are tagged with `<tx.r>` tags, but each have an attribute based on a unique style `id`, in addition to a name attribute.

All styles are defined in child elements of the `<style_tables>` element of the Flexiondoc XML file, and given an `id` attribute, which is called when referencing the style, and which the template file uses to define a style key with a name attribute.

For example, in the Flexiondoc XML output of the *Wellington_WordStyle.doc* example, character styles are defined in the `<tx.char_style_table>` child of the `<style_tables>` parent element. Notice the `id` attribute:

```
<tx.char_style_table>
  <tx.char_style id="ID16d" auto_kern_above="0.1111in" auto_kerning="false"
back_brush="ID168" font="ID16f" kerning="0in" text_brush="ID16e" text_
effect="normal" text_hidden="false" text_position="normal" text_protected="false"
text_strikethrough="none" underline="ID170"/>
  <tx.char_style id="ID178" back_brush="ID176" font="ID177" text_
brush="ID176"/><tx.char_style id="ID187" font="ID186"/><tx.char_style id="ID1d6"
font="ID1d5"/>
  <tx.char_style id="ID1e5" font="ID1e4"/>
  <tx.char_style id="ID1e8" name="Default Paragraph Font" predefined="default"/>
  <tx.char_style id="ID1ec" font="ID1eb"/>
</tx.char_style_table>
```

When the *flexiondoc_to_scc.xsl* stylesheet is applied, it causes the output XML file to be searched for all character styles, `<tx.char_style>`. It uses the `id` attribute of the style to define unique `<xsl:key>` elements with a name attribute based on the `id` of each `<tx.char_style>` tag:

```
<xsl:key name="charStyleKey" match="fld:tx.char_style" use="@id" />
<xsl:template match="fld:tx.r[@style]">
  <xsl:variable name="charStyleName">
    <xsl:value-of select="key('charStyleKey', @style)/@name" />
  </xsl:variable>
  <xsl:choose>
    <xsl:when test="string-length($charStyleName) > 0">
      <xsl:element name="scc_{translate($charStyleName, $translateFrom,
$translateTo)}">
        <xsl:apply-templates />
      </xsl:element>
    </xsl:when>
    <xsl:otherwise>
      <xsl:value-of select="." />
    </xsl:otherwise>
  </xsl:choose>
</xsl:template>
```

Similarly, when the stylesheet is applied, it causes the output XML file to be searched for all paragraph styles, `<tx.para_style>`. It then uses the `id` attribute of the style to define unique `<xsl:key>` elements with a name attribute based on the `id` of each `<tx.para_style>` tag:

```
<xsl:key name="paraStyleKey" match="fld:tx.para_style" use="@id" />
<xsl:template match="fld:tx.p[@style]">
  <xsl:variable name="styleValue">
    <xsl:value-of select="@style" />
  </xsl:variable>
  <xsl:variable name="paraStyleName">
    <xsl:value-of select="key('paraStyleKey', $styleValue)/@name" />
  </xsl:variable>
  <xsl:choose>
    <xsl:when test="string-length($paraStyleName) > 0">
      <xsl:element name="scc_{translate($paraStyleName, $translateFrom,
$translateTo)}">
        <xsl:apply-templates />
      </xsl:element>
    </xsl:when>
    <xsl:otherwise>
```

```
<xsl:element name="p" >
<xsl:value-of select="." />
</xsl:element>
  </xsl:otherwise>
</xsl:choose>
</xsl:template>
```

9.5.5 Example Files

For more detailed study of examples, sample files are located here:

IntradocDir/data/components/ContentCategorizer/CC_Sample

For more detailed study of the XSLT style sheets, they are located here:

IntradocDir/data/components/ContentCategorizer/stylesheets

The stylesheets located in the directory listed above are used by Content Categorizer. Make duplicates for study.

User Interface

This appendix provides information about the user interface screens for Content Server administration applications. It contains the following topics:

- ["Content Repository Interface"](#) on page A-1
- ["Workflows User Interface"](#) on page A-87
- ["PDF Watermark Interface"](#) on page A-133
- ["Folders Interface"](#) on page A-141
- ["Folios Interface"](#) on page A-147
- ["Content Tracker Interface"](#) on page A-154
- ["Content Categorizer Interface"](#) on page A-167
- ["Web Layout Editor Interface"](#) on page A-194

A.1 Content Repository Interface

This section provides information about the interfaces used with Content Server repository.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

It contains the following topics:

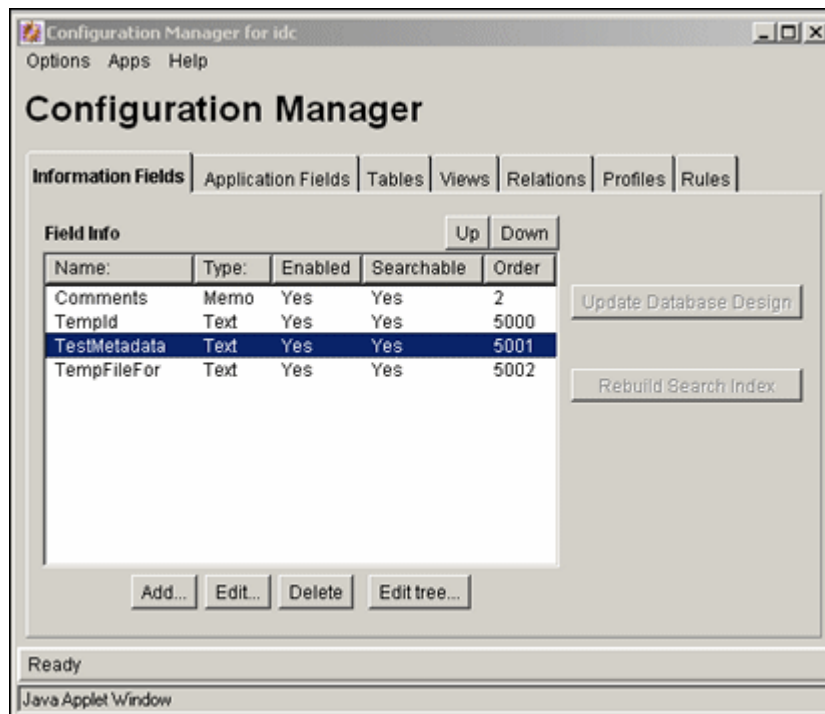
- ["Configuration Manager Application Page"](#) on page A-2
- ["Content Type Interface Screens"](#) on page A-10
- ["Native File Format Interface Screens"](#) on page A-11
- ["Custom Fields Interface Screens"](#) on page A-13
- ["Repository Manager Interface Screens"](#) on page A-26
- ["Content Interface Screens"](#) on page A-29
- ["Revision Interface Screens"](#) on page A-31
- ["Workflow Revision Interface Screens"](#) on page A-35
- ["Subscription Interface Screens"](#) on page A-37

- "Schema Interface Screens" on page A-45
- "Content Profile Interface Screens" on page A-58
- "Profile Rules Interface Screens" on page A-67

A.1.1 Configuration Manager Application Page

The Configuration Manager application is an administration application used to manage content types, file formats, and custom metadata fields. To access this page, log in as an administrator or subadministrator, and click the **Administration** tray in the portal navigation bar. Click **Admin Applets**, then click **Configuration Manager**.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.



Note: Only administrators can work with Configuration Manager. Subadministrators do not have access to this application.

Element	Description
Options menu	Opens additional administrative applications to manage information fields and file format. Also provides options to republish schema, set up trace programs, and exit the Configuration Manager application. Many of these options are also available on the Actions shortcut menu under the Administration tray link in the portal navigation bar

Element	Description
Apps menu	Used to open other administration applications. The other applications will open in the same mode (applet or stand-alone) as the current application.
Help menu	Contents: Displays the content server online help. About Content Server: Displays version, build, and copyright information for the content server.
Information Fields tab	Used to add, edit, and delete custom metadata fields. See " Configuration Manager: Information Field Tab " on page A-14 for details.
Application Fields tab	Used to add, edit, and delete fields that are used to customize Content Server forms.
Tables tab	Used to add and define tables for schemas. See " Configuration Manager: Tables Tab " on page A-46.
Views tab	Used to add and define views to schemas. See " Configuration Manager: Views Tab " on page A-49.
Relations tab	Used to add and define relationships between tables and columns. See " Configuration Manager: Relations Tab " on page A-56.
Profiles tab	Used to create and define content profiles. See " Configuration Manager: Profiles Tab " on page A-58.
Rules tab	Used to create and define the rules to include in profiles. See " Configuration Manager: Rules Tab " on page A-67

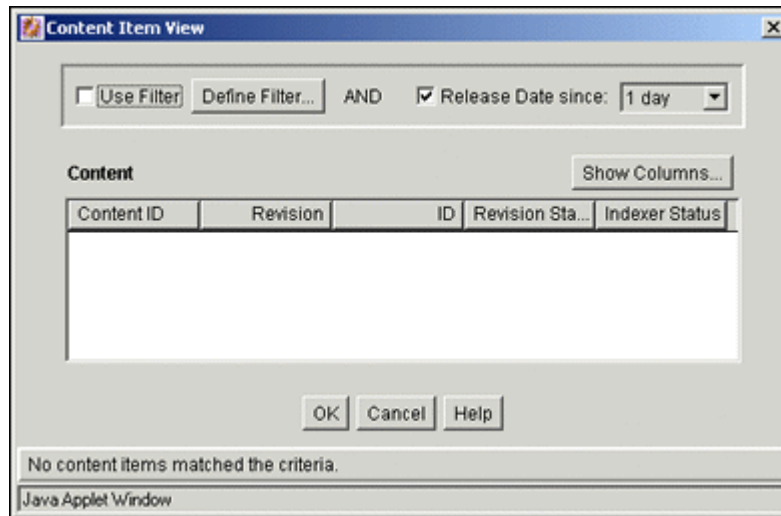
Multi-Use Screens

The following screens are used in many administration applications for a variety of detailed purposes; however, their basic use remains the same:

- [Content Item View Screen](#)
- [User View Screen](#)
- [Define Filter Screen](#)
- [Show Columns Screen](#)

A.1.1.1 Content Item View Screen

The Content Item View screen is used to select content to use when previewing different content profile scenarios. To access this screen, click the **Select** button that corresponds to the Content ID field on the [Preview Profile Screen](#). The Content Item View screen is also accessed from the following content profile screens:

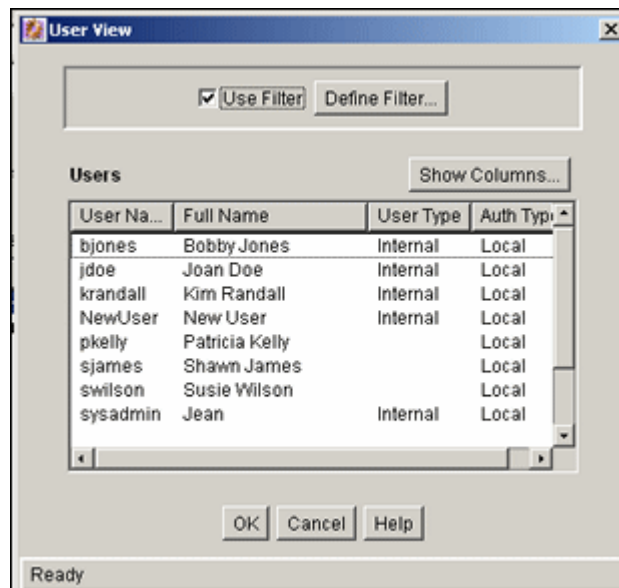


- Edit Activation Condition: see ["Edit Activation Condition Screen Tabs"](#) on page A-72
- Edit Default Value: see ["Edit Default Value: Conditions Tab"](#) on page A-82
- Edit Derived Value: see ["Edit Derived Value: Conditions Tab"](#) on page A-85

Element	Description
Use Filter check box	Used to narrow the list of content items that are included in the Content pane. Selected: Enables filtering of content items in the list based on any selected and defined filter fields and release date since filter (if specified). Clear: Disables filtering of content items in the list.
Define Filter button	Displays the Define Filter Screen , from which selections for filters can be made. Selected items activate those filter fields.
Release Date since check box/ date list	Selected: Enables filtering of content items in the list based on their respective release date since the specified elapsed time period of 1 day, 1 week, or 4 weeks. Clear: Disables filtering of content items in the list.
Show Columns button	Displays the Show Columns Screen . This screen is used to select the property columns that are displayed for each content item included in the Content list. Selected items activate those property columns.
Content pane	Displays the applicable values of the selected display columns for each content item included in the Content items list.

A.1.1.2 User View Screen

The User View screen is used to select users to include when previewing profile scenarios. To access this screen, click the **Select** button that corresponds to the User Name field on the [Preview Profile Screen](#).



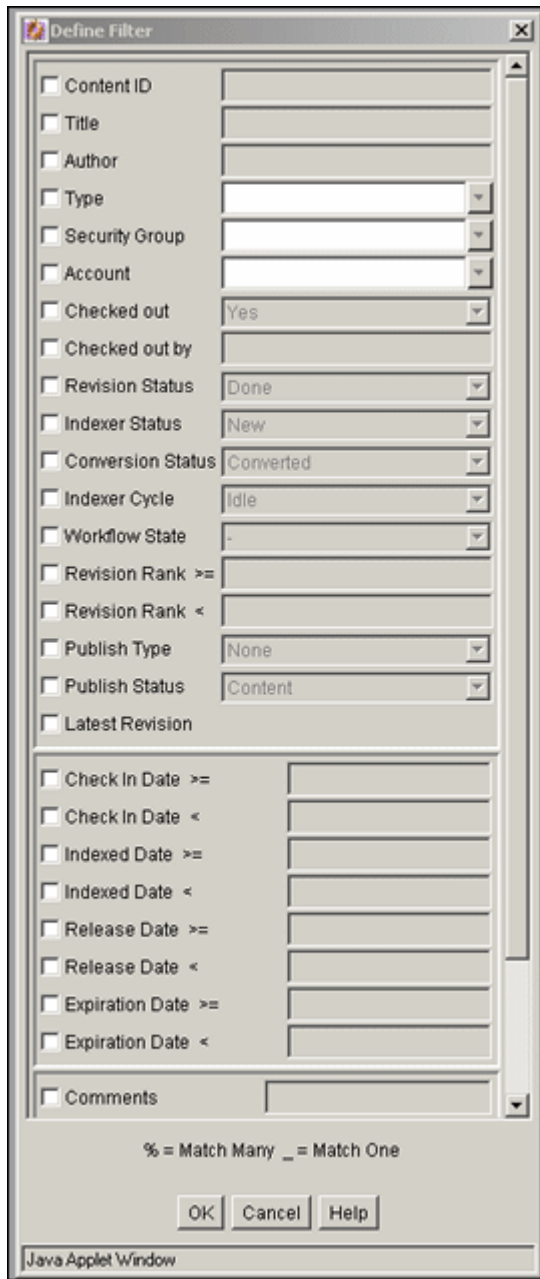
Element	Description
Use Filter check box	Used to narrow the list of users to be included in the Users pane. Selected: Enables filtering of the users in the list based on the criteria selected. Clear: Disables filtering of users in the list.
Define Filter button	Displays the Define Filter Screen , from which selections for filters can be made. Selected items activate those filter fields.
Show Columns button	Displays the Show Columns Screen . This screen is used to select the property columns that are displayed for each user included in the Users list. Selected items activate those property columns.
Users pane	Displays the applicable values of the selected display columns for each user included in the Users list.

A.1.1.3 Define Filter Screen

The Define Filter screen is used to narrow the list of revisions, users, and so forth that is displayed on several administration application screens. Access this screen by clicking the Define Filter button on the User View Screen. Select one or more check boxes to activate the filter fields.

The items displayed will be filtered based on the criteria entered. The following wildcards can be used in these fields:

- % = one or more characters; _ = single character.



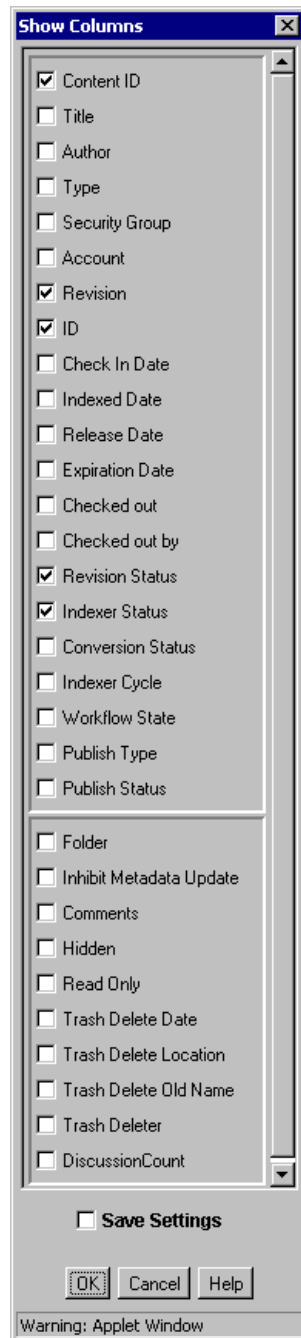
Field	Description
Content ID field	The unique Content ID of the content item.
Title field	The title of the revision.
Author field	The user who checked in the revision.
Type field	The content type of the revision.
Security Group field	The security group assigned to the revision.
Account field	The account assigned to the revision. This field is displayed only if accounts are enabled.
Checked out field	Specifies whether the revision is checked out.

Field	Description
Checked out by field	The user who has the revision checked out.
Revision Status field	<p>The status of the revision:</p> <p>Done: The revision is waiting to be released on its specified Release Date.</p> <p>Edit: The revision is at the initial contribution step of a workflow.</p> <p>GenWWW: The revision is being converted to web-viewable format or is being indexed, or has failed conversion or indexing.</p> <p>Review: The revision is in a workflow and is being reviewed.</p> <p>Pending: The revision is in a Basic workflow and is waiting for approval of all revisions in the workflow.</p> <p>Released: The revision is available in the content server.</p> <p>Expired: The revision is no longer available for searching or viewing in the content server. (The revision was not deleted, but it can be accessed only by an administrator unless you use Notification of Expiration.)</p> <p>Deleted: The revision has been deleted and is waiting to be completely removed from the content server during the next indexing cycle.</p>
Indexer Status field	<p>The indexing status of the revision:</p> <p>New: The revision is checked in but has not been indexed.</p> <p>Current: The revision is the latest revision.</p> <p>Old: The revision is not the latest revision.</p> <p>Workflow: The revision is in a workflow.</p> <p>Processing: The revision is being prepared for indexing.</p> <p>Update: The revision's metadata has been updated but the revision has not been indexed.</p> <p>Indexing: The revision is being indexed.</p> <p>Note: Only one revision of any content item can be in Current, Indexing, or Update status at a time.</p>
Conversion Status field	<p>The conversion status of the revision:</p> <p>Converted: The revision was converted successfully and the web-viewable file is available.</p> <p>Processing: The revision is being converted by the Inbound Refinery.</p> <p>Failed: The revision is deleted, locked, or corrupted, or a search engine error occurred.</p> <p>MetaData Only: Full-text indexing was bypassed and only the revision's metadata was indexed.</p> <p>Refinery PassThru: Inbound Refinery failed to convert the revision and passed the native file through to the web.</p> <p>Incomplete Conversion: An error occurred in the conversion after a valid web-viewable file was produced and the file was full-text indexed.</p>

Field	Description
Indexer Cycle field	<p>State of the revision in an Indexer cycle. Possible values are:</p> <p>Idle: The revision is not in an Indexer cycle.</p> <p>Loading for Active: The revision is being loaded for an update cycle.</p> <p>Indexed for Active: The revision is being indexed during an update cycle.</p> <p>Loading for Rebuild: The revision is being loaded for a rebuild cycle.</p> <p>Indexed for Rebuild: The revision is being indexed during a rebuild cycle.</p> <p>Rebuilt: The revision has been processed by a rebuild cycle.</p> <p>Updated: The revision has been processed by an update cycle.</p>
Workflow State field	<p>The workflow state of a revision. Possible values are:</p> <p>Reviewer/Contributor: The revision is in a workflow step in which assigned users can both edit or review the revision.</p> <p>Contributor: The revision is in a workflow step in which assigned users can only edit the revision.</p> <p>Reviewer: The revision is in a workflow step in which the assigned users can only review the revision.</p> <p>Pending: The revision is in a basic workflow and has completed all the steps. However, to complete and exit the workflow, all of the content items in the basic workflow must complete all the steps.</p>
Revision Rank >= and <	Used to specify revision greater than/equal to a specific number or less than a specific number.
Publish Type field	The content type for a revision that is used with Content Publisher.
Publish Status field	<p>The publishing status of a revision that is used with Content Publisher:</p> <p>Content: The revision is not staged, published, or in a workflow</p> <p>Published: The revision is published through Content Publisher.</p> <p>Staging: The revision is in the staging process in Content Publisher.</p> <p>Workflow: The revision is in a workflow.</p>
Latest Revision field	Display only latest revision of file.
Specified date fields	<p>Used to specify content that is greater than/equal to a specific date or earlier than a specific date. The possible date fields are:</p> <p>Check In Date: date the revision was checked in to the content server.</p> <p>Indexed Date: date the revision was last indexed.</p> <p>Release Date: date the revision was last released.</p> <p>Expiration Date: expiration date of the revision</p>
Custom fields	Any custom metadata fields are available as filter fields.

A.1.1.4 Show Columns Screen

The Show Columns screen is used to select the columns that are displayed on several administration application screens. Access this screen by clicking the Show Columns button on the User View Screen.



Element	Description
Check boxes	<p>Selected: The field is displayed on the Content Item Subscribed Screen.</p> <p>Cleared: The field is not displayed on the Content tab of the Repository Manager or the Content Item Subscribed screen.</p> <p>Note: See "Define Filter Screen" on page A-5 for field descriptions.</p>

Element	Description
Save Settings check box	<p>Selected: The column settings are applied every time the Content tab of the Repository Manager or Content Item Subscribed screen is displayed.</p> <p>Cleared: The column settings apply only until the Content tab of the Repository Manager or Content Item Subscribed screen is closed.</p>

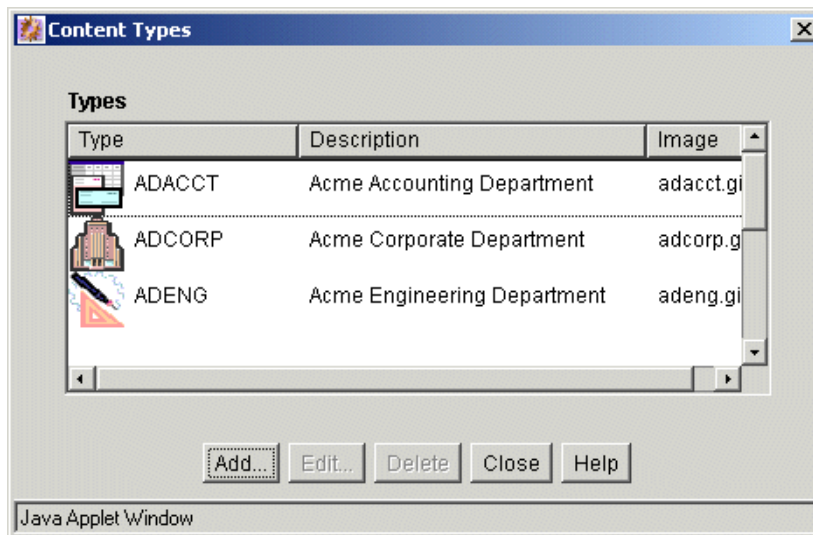
A.1.2 Content Type Interface Screens

The following screens are used when working with Content Types:

- [Content Types Screen](#)
- [Add New/Edit Content Type Screen](#)

A.1.2.1 Content Types Screen

The Content Types screen is used to add, edit, and delete content types. You can also use it to view the name, description, and associated GIF for existing content types and to manage the corresponding images. To access this screen, select **Content Types** from the Options menu of the [Configuration Manager Application Page](#).



Element	Description
Type column	Shows the name of each content type and the GIF image associated with that type.
Description column	Shows the description of each content type.
Image column	Shows the file name for the GIF image associated with each content type.
Add button	Displays the Add New/Edit Content Type Screen .
Edit button	Displays the Add New/Edit Content Type Screen .
Delete button	Enables you to delete the selected content type. (You will not be able to delete a content type if any content has that type.)

A.1.2.2 Add New/Edit Content Type Screen

The Add New/Edit Content Type screen is used to add or edit a content type. To access this screen, click **Add** or **Edit** on the [Content Types Screen](#).

Element	Description
Name field	The name of the content type. 30 characters maximum.
Description field	A description for the content type. 80 characters maximum.
GIF list	The image that is displayed to represent the content type on content server pages (such as Search Results pages).
Name field	Shows the name of each content type and the GIF image associated with that type.

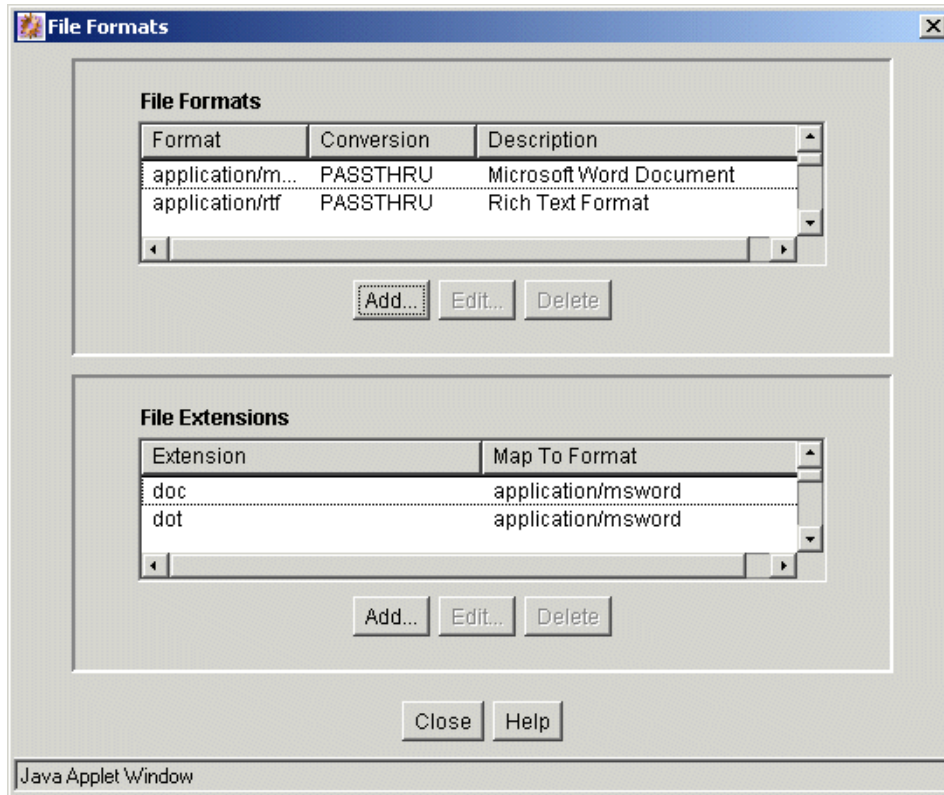
A.1.3 Native File Format Interface Screens

This section covers these screens:

- [File Formats Screen](#)
- [Add New/Edit File Format Screen](#)
- [Add/Edit File Extension Screen](#)

A.1.3.1 File Formats Screen

The File Formats screen is part of the Configuration Manager applet, and is used to set the file formats and file extensions for file conversions. To access this option, select **File Formats** from the Options menu on the Configuration Manager applet.



File Formats pane:

Element	Description
Format column	This is generally the MIME (Multipurpose Internet Mail Extensions) type.
Conversion column	The method to use to convert the file.
Description column	The description for the file format.
Add button	Displays the Add New/Edit File Format Screen .
Edit button	Displays the Add New/Edit File Format Screen .
Delete button	Enables you to delete the selected file format.

File Extensions pane:

Element	Description
Extension column	The file extensions that are mapped to file formats.
Map to Format column	The file format that will be referenced to convert files with the specified file extension.
Add button	Displays the Add/Edit File Extension Screen .
Edit button	Displays the Add/Edit File Extension Screen .
Delete button	Enables you to delete the selected file extension.

A.1.3.2 Add New/Edit File Format Screen

The Add New/Edit File Format screen is used to set up conversion methods for specific file formats. To access this screen, click **Add** or **Edit** in the File Formats pane on the [File Formats Screen](#).

Element	Description
Format field	This is generally the MIME (Multipurpose Internet Mail Extensions) type.
Conversion field	The method to use to convert the file. To not convert this file type, select <i>Passthru</i> . To use a custom conversion method, select <i>Custom</i> .
Description field	The description for the file format.

A.1.3.3 Add/Edit File Extension Screen

The Add/Edit File Extension screen is used to map file extensions to specific file formats. To access this screen, click **Add** or **Edit** in the File Extensions pane on the [File Formats Screen](#).

Element	Description
Extension field	The file extension of files to be converted.
Map to Format field	The file format that will be referenced to convert files with the specified file extension.

A.1.4 Custom Fields Interface Screens

The following screens are used to add metadata fields and application fields:

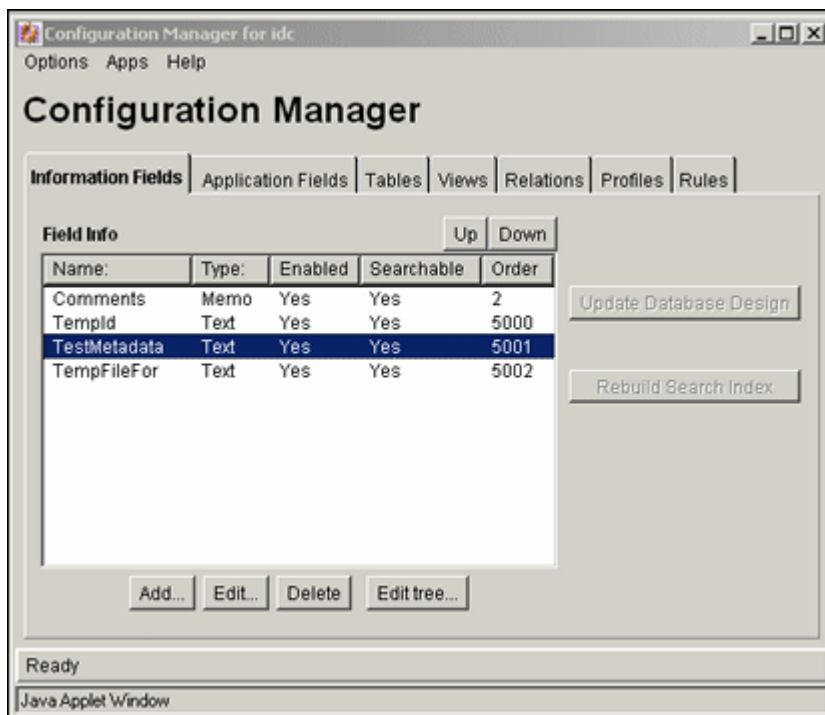
- [Configuration Manager: Information Field Tab](#)

- [Add Metadata Field Name Screen](#)
- [Add/Edit Metadata Field Screen](#)
- [Add/Edit Custom Info Field: Configure Option List](#)
- [Option List Storage Screen](#)
- [Edit View Values Screen](#)
- [Option List Screen](#)
- [Update Database Design Screen](#)
- [Configuration Manager: Application Fields Tab](#)
- [Add/Edit Application Field Screen](#)

A.1.4.1 Configuration Manager: Information Field Tab

The Information Fields tab of the Configuration Manager is used to add, edit, and delete custom metadata fields. Other tabs on this screen are used in conjunction with schemas and profiles.

To access this tab, click **Information Fields** on the [Configuration Manager Application Page](#).

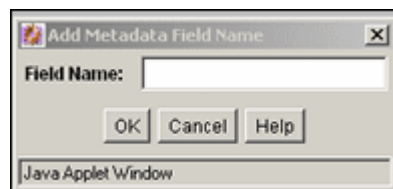


Element	Description
Name column	Lists the names of custom metadata fields.

Element	Description
Type column	Shows the type for each field: Text: 30 characters. Long Text: 100 characters. Date: Date format (such as <i>dd/mm/yyyy</i> or <i>dd/mm/yy</i> for the English-US locale). Memo: 255 characters. Integer: -2^{31} to 2^{31} (-2 billion to +2 billion). By definition, an integer is a natural number, so decimal values and commas are not permitted. Note: The size indicated is the character input length, not an indication of the actual number of bytes needed to store the field.
Enabled column	Shows whether the field is displayed on content server pages.
Searchable column	Shows whether the field is indexed and available for searches.
Order column	Shows the place the field occupies in the sort order.
Up and Down button	Used to rearrange the order of fields for sorting. To use, highlight a field and click the appropriate button. The field's position in the sort order is changed accordingly.
Update Database Design button	Saves changes to the database tables. This button becomes active when an update is required.
Rebuild Search Index button	Rebuilds the search index. This button becomes active when a rebuild is required.
Add button	Displays the Add Metadata Field Name Screen .
Edit button	Displays the Add Metadata Field Name Screen .
Delete button	Deletes the selected custom metadata field.
Edit Tree	If a field is associated with a schema relationship, this displays a parent/child (tree and node) structure for the entries in the selected table. This option becomes active after the field has been added and the database design has been updated. See " Edit Tree Screen " on page A-57 for more information.

A.1.4.2 Add Metadata Field Name Screen

This screen is used to define the name of a new custom metadata field. To access this screen, click **Add** on the [Configuration Manager: Information Field Tab](#).



Element	Description
Field Name field	<p>Duplicate names are not allowed. Maximum field length is 29 characters. The following are not acceptable: spaces, tabs, linefeeds, carriage returns and ; ^ ? : @ & + " # % < * ~ </p> <p>Note: When you add a custom metadata field, the system automatically prefixes the name with an 'x' to ensure that it is unique and does not conflict with any reserved names. Similarly, when you define a custom user information (metadata) field, the system automatically prefixes the name with a 'u' to ensure that it is also unique and does not conflict with any reserved names.</p>

Screens for Adding and Editing Metadata

These screens cover adding and editing metadata:

- [Add/Edit Metadata Field Screen](#)
- [Add/Edit Custom Info Field: Configure Option List](#)
- [Option List Storage Screen](#)
- [Edit View Values Screen](#)
- [Option List Screen](#)
- [Edit Tree Definition Screen](#)
- [Select Root Node for the Tree](#)

A.1.4.3 Add/Edit Metadata Field Screen

This screen is used to define a custom metadata field. To access this screen, do one of the following:

- Enter a field name, and click **OK** on the [Add Metadata Field Name Screen](#).
- Select a field, and click **Edit** on the [Configuration Manager: Information Field Tab](#).

The screenshot shows a dialog box titled "Add Metadata Field 'InfoField1'". It contains the following fields and options:

- Field Caption:** InfoField1
- Field Type:** Text (dropdown menu)
- Field Order:** 2
- Default Value:** (empty text box) with a "Select..." button to the right.
- Require Value:** Required
- Placeholder:** Enabled
- Enable on User Interface:** Enabled
- Enable for Search Index:** Indexed
- Enable Option List:** Option List with a "Configure..." button to the right.

At the bottom of the dialog are "OK", "Cancel", and "Help" buttons. The status bar at the bottom left reads "Java Applet Window".

Element	Description
Field Caption field	Label for the field that is displayed on content server pages.

Element	Description
Field Type list	<p>Text: 30 characters.</p> <p>Long Text: 100 characters.</p> <p>Date: Date format (such as <i>dd/mm/yyyy</i> or <i>dd/mm/yy</i> for the English-US locale).</p> <p>Memo: 255 characters.</p> <p>Integer: -2^{31} to 2^{31} (-2 billion to +2 billion). By definition, an integer is a natural number, so decimal values and commas are not permitted.</p>
Field Order field	Sequence in which the field is displayed on content server pages. Starting at 2, the number automatically increments as new fields are added. However, it is recommended to manually increment the numbers by 5, such as 15, 20, 25, etc. This will accommodate fields added in the future; for example: a field can be inserted between 15 and 20 by giving it a Field Order of 16.
Default Value field	The default value of the metadata field being created.
Require Value check box	Prevents files from being checked in if the field does not contain a value.
Placeholder check box	When selected, makes this a field which is not stored or indexed. Placeholders are often used for the parent level of a dependent choice list.
Enable on User Interface check box	<p>Selected: The field is displayed on content server pages (checkin, search, content information, and so forth).</p> <p>Clear: The field is not displayed on content server pages.</p>
Enable for Search Index check box	<p>Selected: The field will be indexed, so the field can be used as search criteria.</p> <p>Clear: The field will not be indexed. Because the field cannot be used as search criteria, it is not displayed on search pages.</p>
Enable Option List check box	Creates a user-selectable option list on content server pages. If you enable this check box then click Configure , the Add/Edit Custom Info Field: Configure Option List is displayed.

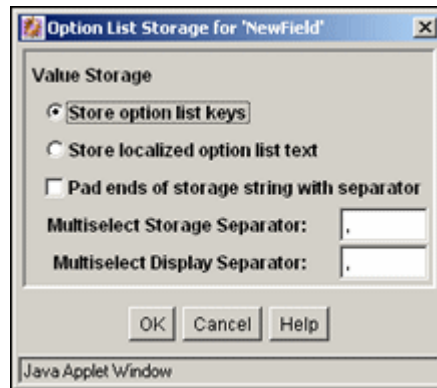
A.1.4.4 Add/Edit Custom Info Field: Configure Option List

The Configure Option List screen is used to specify the type of option list, the values for the option list and any dependencies associated with the option list. To access this screen, click Enable Option List then click **Configure** on the [Add Metadata Field Name Screen](#) or on the [Add/Edit Metadata Field Screen](#).

Element	Description
Option List Type	<p>Specifies the type of option list:</p> <ul style="list-style-type: none"> ■ Select List Validated: For Batch Load and Archiver, this option ensures that only files whose specified values are current options for this field are checked in. ■ Select List Not Validated: For Batch Load and Archiver purposes, this option permits check in of files whose specified values are not current options. ■ Edit and Select List: Provides both a text field and a combo box. Contributors can enter values that are not in the option list. ■ Edit and Multiselect List: Provides both a text field and a combo box. Contributors can enter values that are not in the option list. Additionally, they can select or enter multiple values. ■ Multiselect List: Contributors can chooses multiple selections from a list.
Advanced button	Displays the Option List Storage Screen , used to specify how the option list is stored and displayed.
Use option list	Used to create a new option list. The name of the new list is inserted into the field.
Edit button	Displays the Option List Screen , used to add or alter choices on the list associated with the metadata field.
Use view	Used to choose values in a view instead of a created option list.
Edit Values button	Displays the Edit View Values Screen or the Option List Screen , depending on the type of view selected.
Use tree	Used to choose values in a tree instead of an option list or a view.
Edit Definition button	Displays the Option List Screen , used to alter how the tree is defined and displayed.
Dependent field check box	Determines whether this metadata field will be subordinate to another metadata field. This is only available when using a view. Click the check box to enable the dependency.
Depends on field list	Enter a field name or choose from the list of metadata that can be used to set dependencies.
Relationship	<p>If relationships have previously been defined for the view, they are available from the list. See "Configuration Manager: Relations Tab" on page A-56 for details about relations.</p> <p>If an option list or a view without a defined relationship is selected for use, <i><no relationship defined></i> is displayed.</p>

A.1.4.5 Option List Storage Screen

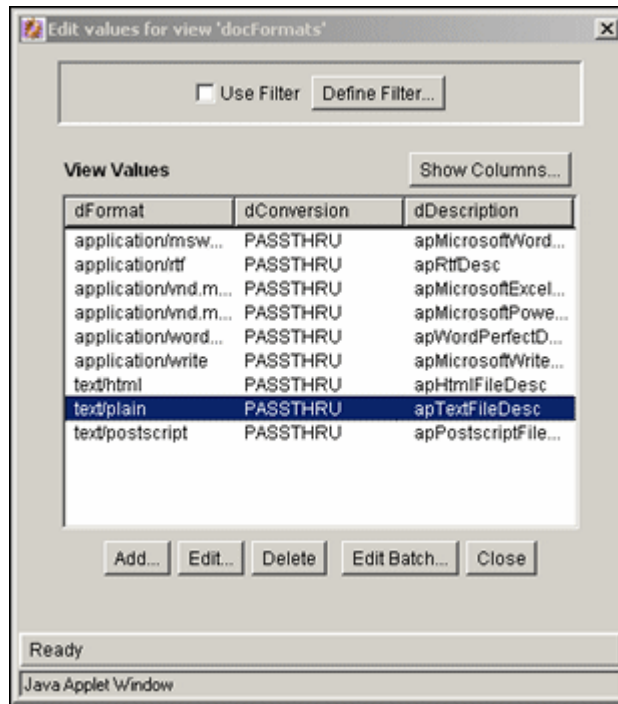
The Option List Storage Screen is used to specify how the option list will be displayed and stored. To access this screen, click the Advanced button next to the option list on the [Add/Edit Custom Info Field: Configure Option List](#).



Element	Description
Store option list keys	Select this option to permanently store option list keys. You can store keys or localized option list text.
Store localized option list text	Select this option to store localized versions of the option list. You can store keys or localized option list text.
Pad ends of storage string with separator	Active only if one of the Multiselect options is chosen on the Add/Edit Custom Info Field: Configure Option List . Use this option to pad the length of the separator used to store multiselect values.
Multiselect Storage Separator	Active only if one of the Multiselect options is chosen on the Add/Edit Custom Info Field: Configure Option List . Use this option to change the separator used to store multiselect values.
Multiselect Display Separator	Active only if one of the Multiselect options is chosen on the Add/Edit Custom Info Field: Configure Option List . Use this option to change the separator used to display multiselect values.

A.1.4.6 Edit View Values Screen

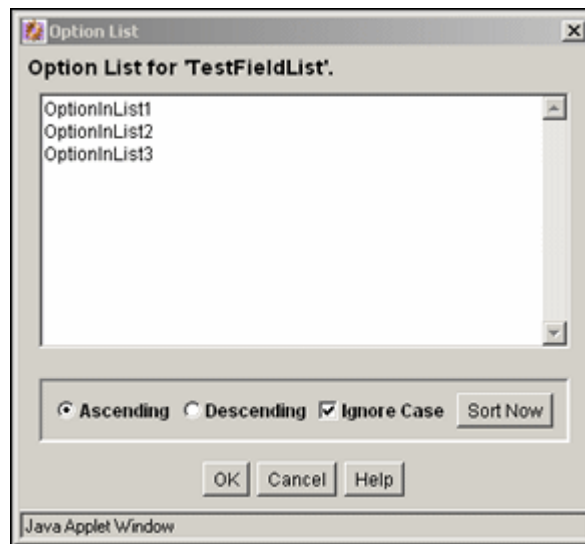
The Edit View Values screen is used to edit the values defined in a view. To access this screen, click **Edit Value** next to Use View on the [Add/Edit Metadata Field Screen](#). The columns of fields on this screen depend on the type of view selected.



Element	Description
Use Filter/Define Filter	Used to alter which values are displayed in the selected columns.
Show Columns	Limits the number of columns to show in the view. See " Show Columns Screen " on page A-8.
Add	Displays the Add/Edit Value Screen , used to edit values in the view.
Edit	Displays the Add/Edit Value Screen , where you can alter the values in a column.
Delete	Used to delete a value from the table. You are prompted to confirm the deletion.
Edit Batch	Displays the Edit Values: Edit Batch , used to copy and paste large amounts of information in order to alter values.

A.1.4.7 Option List Screen

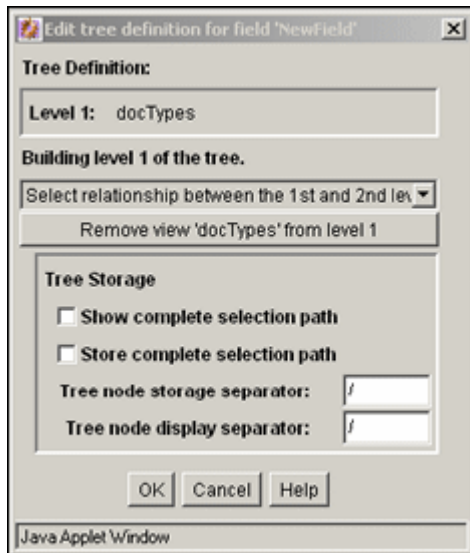
The Option List screen is used to create an option list for a custom field. To access this screen, click the **Edit** button next to Use Option List on the [Add/Edit Custom Info Field: Configure Option List](#).



Element	Description
Option list	Enter the values that can be selected for the custom metadata field. Each value must be on a separate line, with a carriage return between values.
Ascending option	Sort the list in alpha-numeric order, with capital letters preceding lower-case letters. For example, an Ascending list with Ignore Case disabled will list <i>ABCDF</i> before <i>abcde</i> .
Descending option	Sort the list in reverse alpha-numeric order, with lower-case letters preceding capital letters. For example, a descending list with Ignore Case disabled will list <i>abcde</i> before <i>ABCDE</i> .
Ignore Case check box	Sort the list in either Ascending or Descending order and ignore the case of the list items.
Sort Now button	Sorts the list in the manner specified by the Ascending, Descending, and Ignore Case options.

A.1.4.8 Edit Tree Definition Screen

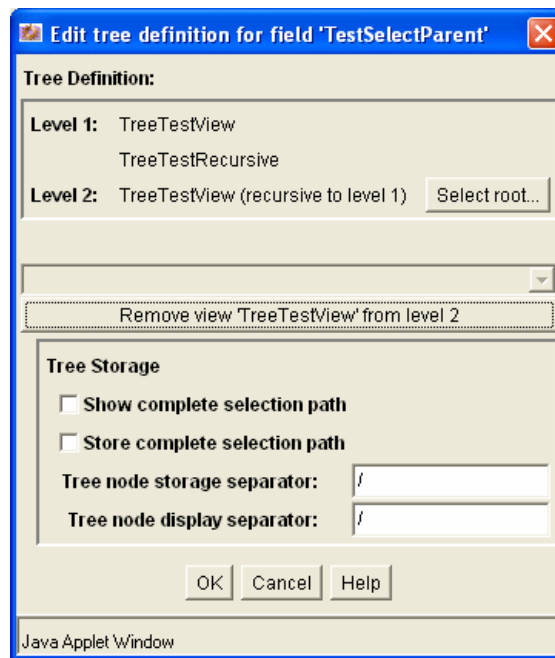
The Edit Tree Definition Screen is used to define how a tree used in an option list is stored and displayed. To access this screen, click the **Edit Definition** button next to Use Tree on the [Add/Edit Custom Info Field: Configure Option List](#).



Element	Description
Select relationship menu	Select a relationship between the levels of the option list.
Remove view option bar	Click on this bar to remove the selected view.
Show complete selection path	Select this checkbox to display the complete path when the option is selected.
Store complete selection path	Select this checkbox to save the complete path when the option is selected.
Tree node storage separator	Use this option to store a different operator between values.
Tree node display separator	Use this option to change the separator between values.

A.1.4.9 Select Root Node for the Tree

When you configure a schema tree for a metadata field that uses a tree to choose values instead of an option list or a view, the Select Root field is displayed on the [Edit Tree Definition Screen](#). It enables you to select parent values when browsing for a child in a DCL schema. That is, you can choose the row in a table that is the root of the tree.



Element	Description
Tree Definition pane	Displays the tree schema hierarchy.
Select Root button	Displays a popup dialog to select parent values for a child value.
Other screen elements	For descriptions of the other screen elements. See " Edit Tree Definition Screen " on page A-21.

A.1.4.10 Update Database Design Screen

The Update Database Design screen is used to add or delete metadata fields in the content server database. To access this screen, add or delete a custom metadata field and click **Update Database Design** on the [Configuration Manager: Information Field Tab](#).

The following table lists the events after which a database update or search index rebuild may be required depending on the search engine.

Event	Action Required
Add metadata field	Update database
Edit metadata field	Update database*
Delete metadata field	Update database
Enable or disable <i>Enable for Search Index</i> for metadata field	Rebuild search index
Add metadata field with <i>Enable for Search Index</i> selected	Rebuild search index

Changes to the Require Value, Option List Default Value, Option List Key, and Option List values do not require a database update.

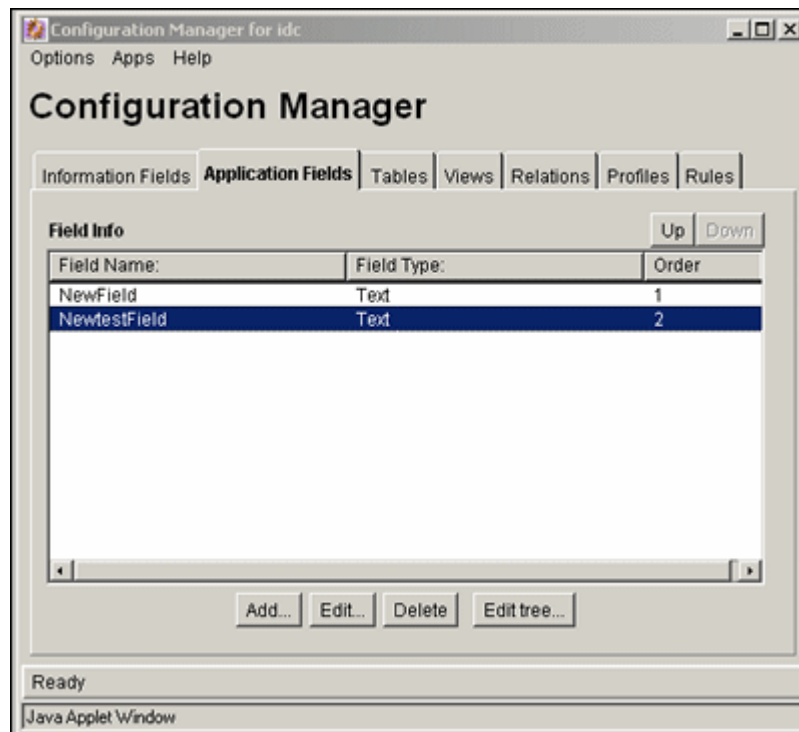
Caution: Depending on the size of your search index and available system resources, the search index rebuild process may take several days. If rebuilding is necessary, rebuild at times of non-peak system usage.



Element	Description
Info field(s) that will be added	Lists the metadata fields that were added since the last time the database was updated.
Info field(s) to delete check boxes	<p>Lists the metadata fields that were deleted since the last time the database was updated.</p> <p>Selected: The metadata field will be deleted from the database.</p> <p>Clear: The metadata field will not be deleted from the database. The field remains hidden on the Configuration Manager screen and checkin and search pages, but it still exists in the database.</p>

A.1.4.11 Configuration Manager: Application Fields Tab

The Application Fields Tab is used to add, edit, and delete custom fields used on Content Server forms. To access this tab, click **Application Fields** on the [Configuration Manager Application Page](#).



Element	Description
Field Name column	Lists the names of custom application fields.
Field Type column	Shows the type for each field.
Order column	Shows the place the field occupies in the sort order.
Up and Down button	Used to rearrange the order of fields for sorting. To use, highlight a field and click the appropriate button. The field's position in the sort order is changed accordingly.
Add button	Displays the Add/Edit Metadata Field Screen .
Edit button	Displays the Add/Edit Metadata Field Screen .
Delete button	Deletes the selected custom metadata field.
Edit Tree	If a field is associated with a schema relationship, this displays a parent/child (tree and node) structure for the entries in the selected table. This option becomes active after the field has been added and the database design has been updated. See " Edit Tree Screen " on page A-57 for more information.

A.1.4.12 Add/Edit Application Field Screen

This screen is used to add the necessary information for a custom application field. To access this screen, click **Add** or highlight a field and click **Edit** on the [Configuration Manager: Application Fields Tab](#) screen.

Element	Description
Field Name field	Enter the name of the field. Duplicate names are not allowed. Maximum field length is 29 characters. The following are not acceptable: spaces, tabs, linefeeds, carriage returns and ; ^ ? : @ & + " # % < * ~
Field Type list	<p>Text: 30 characters.</p> <p>Long Text: 100 characters.</p> <p>Date: Date format (such as <i>dd/mm/yyyy</i> or <i>dd/mm/yy</i> for the English-US locale).</p> <p>Memo: 255 characters.</p> <p>Integer: -2^{31} to 2^{31} (-2 billion to +2 billion). By definition, an integer is a natural number, so decimal values and commas are not permitted.</p>
Field Caption field	Label for the field that is displayed on content server pages.
Enable Option List check box	Creates a user-selectable option list on content server pages. If you enable this check box then click Configure , the Add/Edit Custom Info Field: Configure Option List is displayed.
Placeholder check box	When selected, makes this a field which is not stored or indexed. Placeholders are often used for the parent level of a dependent choice list.
View Only check box	When selected, makes this a field which is only used in a schema view.

A.1.5 Repository Manager Interface Screens

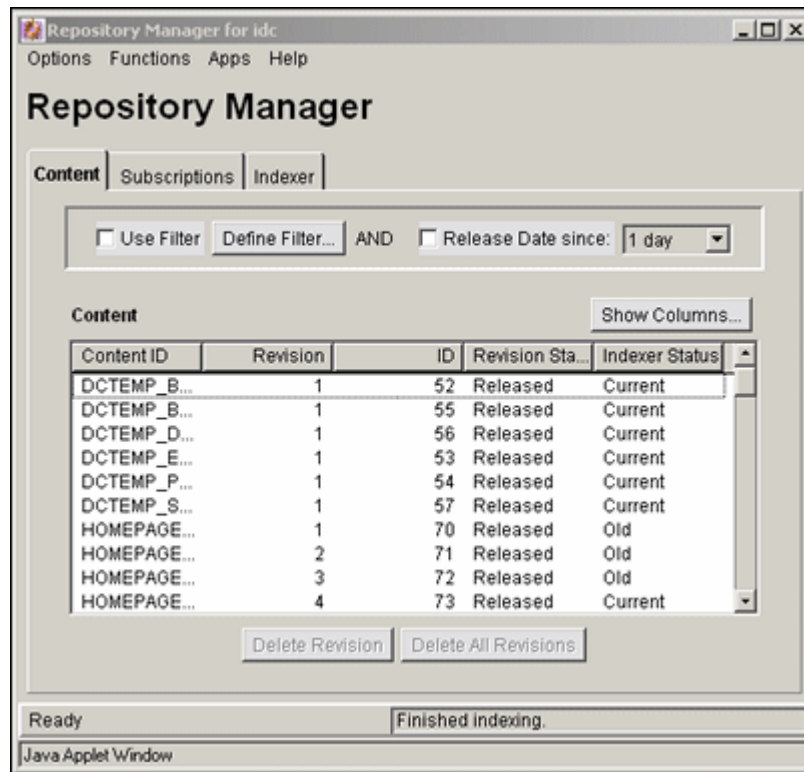
The following screens are used to access the Repository Manager:

- [Repository Manager Main Screen](#)
- [Repository Manager: Content Tab Screen](#)

A.1.5.1 Repository Manager Main Screen

The Repository Manager Main Screen shows the options and tabs available with the Repository Manager. To display this screen, click **Repository Manager** on the Admin Applets screen or start Repository Manager in standalone mode.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

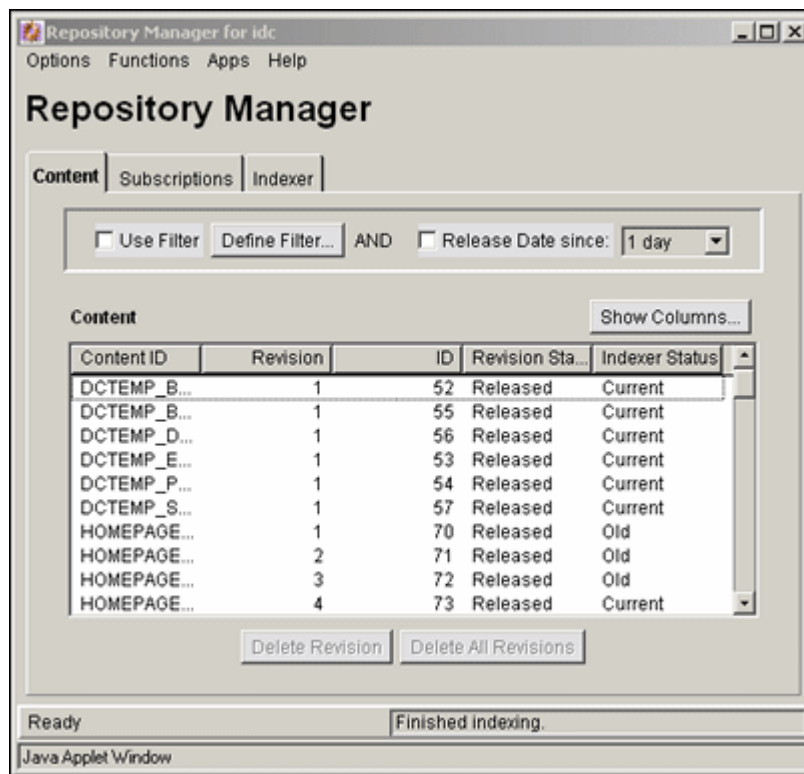


Element	Description
Options menu	Contains options to start tracing or to exit and close the Repository Manager.
Functions menu	<p>Info: Displays the Approve Revision Screen.</p> <p>Add Revision: Displays the Add New Revision Screen. This option is available only in the stand-alone Repository Manager application.</p> <p>Update: Displays the Update Content Info Screen.</p> <p>Subscribers: Displays the Users Subscribed Screen.</p> <p>Check Out: Displays the Check Out Item Screen.</p> <p>Undo Check Out: Displays the Undo Check Out Screen.</p> <p>Approve: Displays the Approve Revision Screen.</p> <p>Reject: Displays the Reject Revision Screen.</p> <p>Resubmit: Displays the Resubmit Revision Screen.</p> <p>Delete Revision: Displays the Delete Revision Screen.</p> <p>Delete All Revisions: Displays the Delete All Revisions Screen.</p> <p>Note: All of the options on the Functions menu are also available from a shortcut menu, which is accessed by right-clicking a revision in the Content list.</p>

Element	Description
Apps menu	Used to open other administration applications. The other applications will open in the same mode (applet or stand-alone) as the current application.
Help menu	Contents: Displays the online help for system administrators. About Content Server: Displays version, build, and copyright information for the content server.
Content tab	Displays the Repository Manager: Content Tab Screen .
Subscriptions tab	Displays the Repository Manager: Subscriptions Tab .
Indexer tab	See Repository Manager: Indexer Tab, in the <i>Oracle Fusion Middleware Application Administrator's Guide for Content Server</i> .

A.1.5.2 Repository Manager: Content Tab Screen

The Content tab of the Repository Manager is used to display content item revisions. To access this tab, display the [Repository Manager Main Screen](#) and click **Content**.



Element	Description
Use Filter check box	Select this check box to narrow the Content list as defined by the Show Columns Screen .
Define Filter button	Displays the Define Filter Screen
Release Date since check box and list	Select this check box to narrow the Content list as defined by the Release Date option list.
Show Columns button	Displays the Show Columns Screen .

Element	Description
Content list	Shows the revisions in the content server repository that match the filter settings. <ul style="list-style-type: none"> ▪ The list displays 50 revisions per page. ▪ Double-clicking a revision displays the Approve Revision Screen for that revision. ▪ Right-clicking a revision displays a shortcut menu, which includes the same options that are available from the Functions menu.
Add New button	Displays the Add New Content Item Screen . This button is available only in the stand-alone Repository Manager application.
Add Revision button	Displays the Add New Revision Screen . This button is available only in the stand-alone Repository Manager application.
Delete Revision button	Displays the Delete Revision Screen .
Delete All Revisions button	Displays the Delete All Revisions Screen .

A.1.6 Content Interface Screens

The following screens are used to manage content:

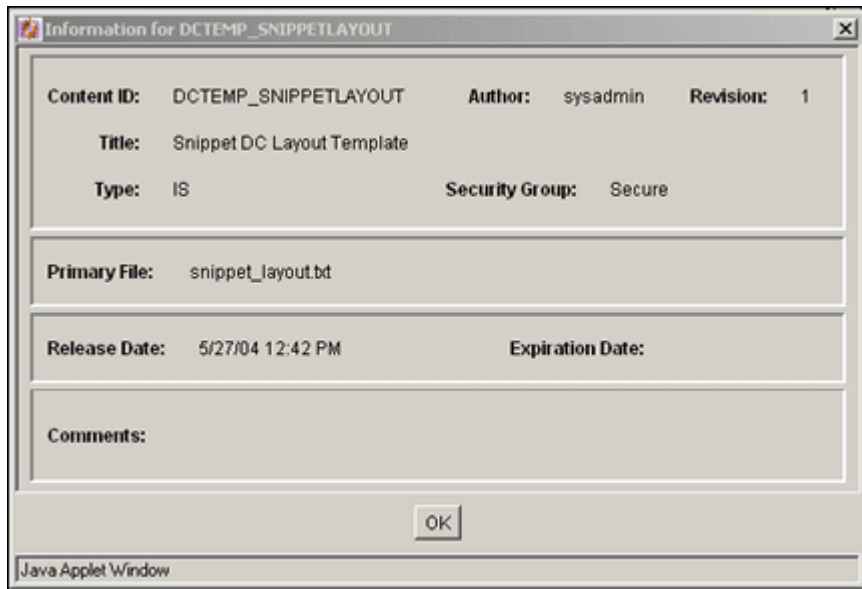
- [Information Screen](#)
- [Add New Content Item Screen](#)
- [Update Content Info Screen](#)

A.1.6.1 Information Screen

The Information screen is used to view the metadata for a revision. To access this screen, do one of the following:

- Select a revision on the [Repository Manager: Content Tab Screen](#), and select **Functions, Info**.
- Right-click a revision on the [Repository Manager: Content Tab Screen](#), and select **Info**.

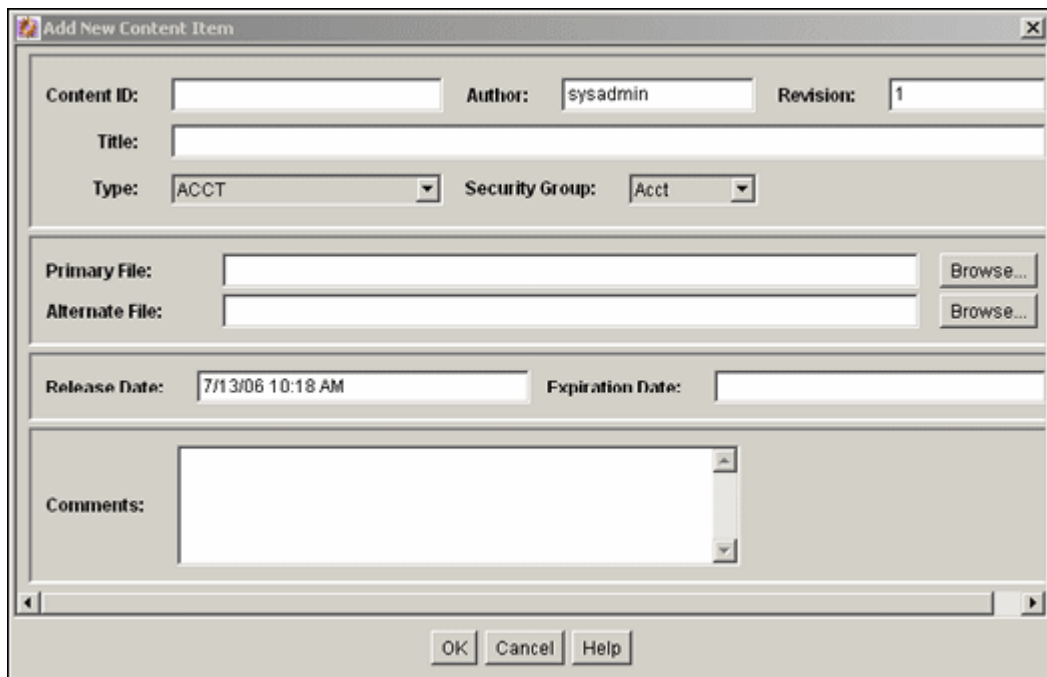
All of the standard metadata fields and any custom metadata fields are displayed on this screen.



A.1.6.2 Add New Content Item Screen

The Add New Content Item screen is used to check a new content item into the system without using a content server check in page. To access this screen, click **Add New** on the stand-alone [Repository Manager: Content Tab Screen](#).

All of the standard metadata fields and any custom metadata fields are displayed on this screen.



A.1.6.3 Update Content Info Screen

The Update Content Info screen is used to change the metadata of an existing revision. To access this screen, do one of the following:

- Select a revision on the [Repository Manager: Content Tab Screen](#), and select **Functions, Update**.
- Right-click a revision on the [Repository Manager: Content Tab Screen](#), and select **Update**.

All of the standard metadata fields and any custom metadata fields are displayed on this screen.

The screenshot shows a dialog box titled "Update Content Info". It contains the following fields and controls:

- Content ID:** DCTEMP_EXCEL
- Author:** sysadmin
- Revision:** 1
- Title:** Excel DC Template
- Type:** IS (dropdown menu)
- Security Group:** Secure (dropdown menu)
- Release Date:** 5/27/04 12:40 PM
- Expiration Date:** (empty field)
- Comments:** (large text area)
- Buttons:** OK, Cancel

A.1.7 Revision Interface Screens

The following screens are used when working with revisions:

- [Add New Revision Screen](#)
- [Check Out Item Screen](#)
- [Undo Check Out Screen](#)
- [Resubmit Revision Screen](#)
- [Delete Revision Screen](#)
- [Delete All Revisions Screen](#)

A.1.7.1 Add New Revision Screen

The Add New Revision screen is used to check in a revision of an existing content item. To access this screen, do one of the following on the stand-alone [Repository Manager Main Screen](#):

- Select a revision and click **Add Revision**.
- Select a revision and select **Functions, Add Revision**.
- Right-click a revision and select **Add Revision**.

All of the standard metadata fields and any custom metadata fields are displayed on this screen.

A.1.7.2 Check Out Item Screen

The Check Out Item screen is used to check out revisions. To access this screen, select one or more revisions on the [Repository Manager: Content Tab Screen](#) and do one of the following:

- Select **Functions, Check Out**.
- Right-click and select **Check Out**.

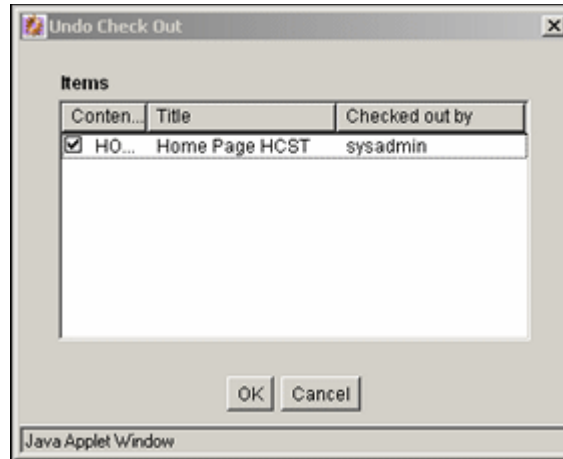
Content ID	Title	Revision
<input checked="" type="checkbox"/> DCTE...	Excel DC Template	1
<input checked="" type="checkbox"/> DCTE...	PowerPoint DC Template	1
<input checked="" type="checkbox"/> DCTE...	Snippet DC Layout Templ...	1

Element	Description
Check boxes	Selected: The revision will be checked out. Clear: The revision will not be checked out.
OK button	Checks out the selected revisions.

A.1.7.3 Undo Check Out Screen

The Undo Check Out screen is used to undo a checkout. To access this screen, select one or more revisions on the [Repository Manager: Content Tab Screen](#), and do one of the following:

- Select **Functions, Undo Check Out**.
- Right-click and select **Undo Check Out**.



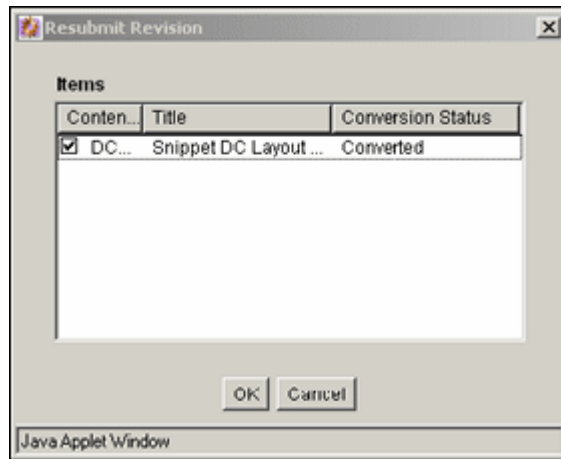
Element	Description
Check boxes	Selected: The checkout will be undone for the revision. Clear: The revision will remain checked out.
OK button	Undoes the checkout for the selected revisions.

A.1.7.4 Resubmit Revision Screen

The Resubmit Revision screen is used to submit a file to the Inbound Refinery for conversion. To access this screen, select one or more revisions on the [Repository Manager: Content Tab Screen](#), and do one of the following:

- Select **Functions, Resubmit**.
- Right-click and select **Resubmit**.

Note: You cannot resubmit files that are in the Inbound Refinery queue.

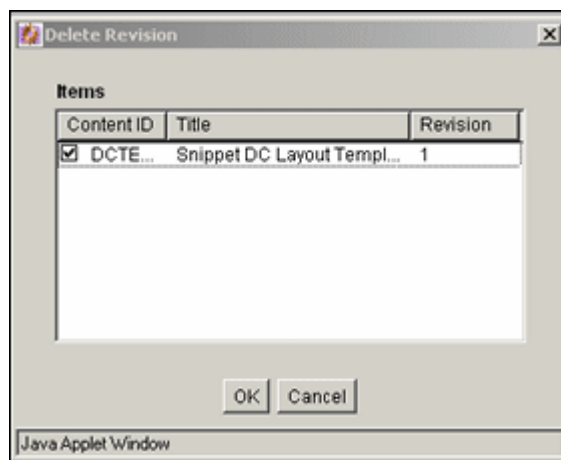


Element	Description
Check boxes	Selected: The revision will be resubmitted to the Inbound Refinery. Clear: The revision will not be resubmitted to the Inbound Refinery.
OK button	Submits the selected revisions to the Inbound Refinery for conversion.

A.1.7.5 Delete Revision Screen

The Delete Revision screen is used to delete individual revisions. To access this screen, select one or more revisions on the [Repository Manager: Content Tab Screen](#) and do one of the following:

- Click **Delete Revision**.
- Click **Functions, Delete Revision**.
- Right-click then select **Delete Revision**.

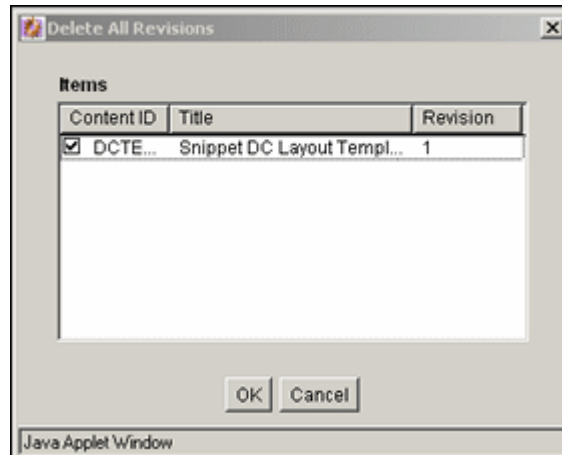


Element	Description
Check boxes	Selected: The revision will be deleted. Clear: The revision will not be deleted.
OK button	Deletes the selected revisions.

A.1.7.6 Delete All Revisions Screen

The Delete All Revisions screen is used to delete all revisions of selected content items. To access this screen, select one or more revisions on the [Repository Manager: Content Tab Screen](#) and do one of the following:

- Click **Delete All Revisions**.
- Select **Functions, Delete All Revisions**.
- Right-click then select **Delete All Revisions**.



Element	Description
Check boxes	Selected: All revisions of the content item will be deleted. Clear: No revisions of the content item will be deleted.
OK button	Deletes all revisions of the selected content items.

A.1.8 Workflow Revision Interface Screens

The following screens are used when handling workflows:

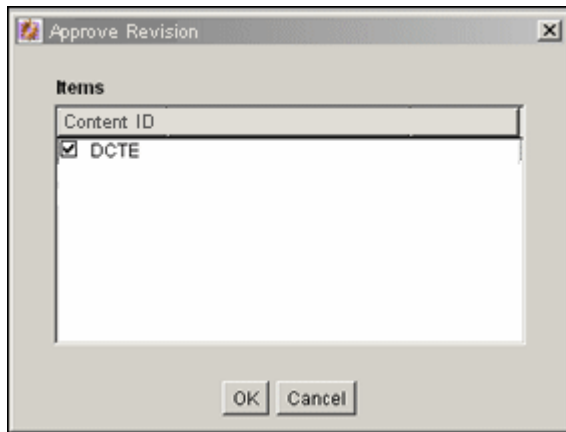
- [Approve Revision Screen](#)
- [Reject Revision Screen](#)

A.1.8.1 Approve Revision Screen

The Approve Revision screen is used to approve revisions that are in a workflow. To access this screen, select one or more revisions in a workflow on the [Repository Manager: Content Tab Screen](#) and do one of the following:

- Select **Functions, Approve**.
- Right-click, and select **Approve**.

Note: Only revisions that are in a workflow will be displayed on this screen.



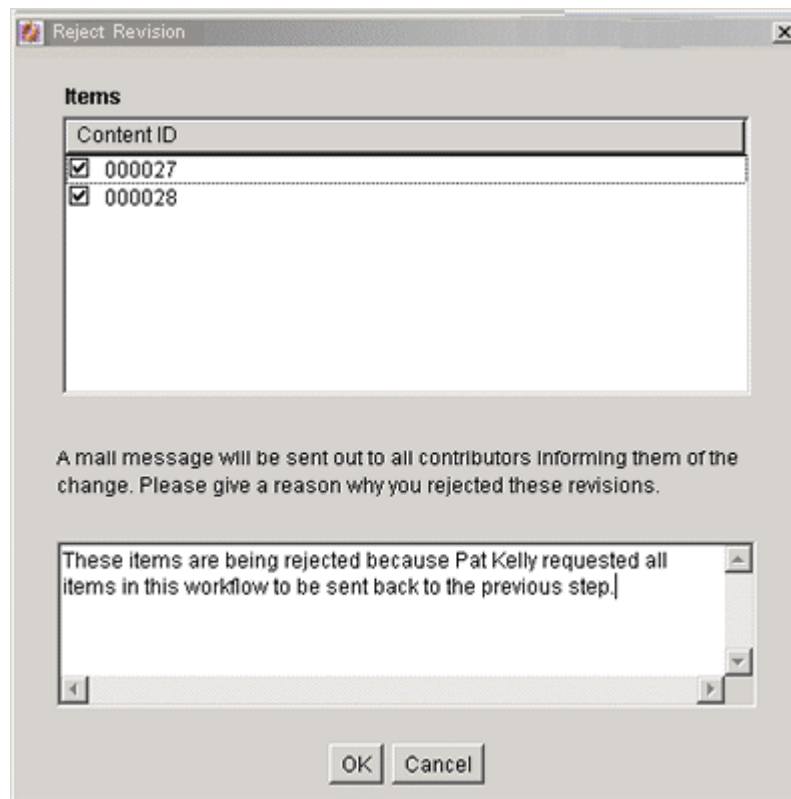
Element	Description
Check boxes	Selected: The revision will be approved. Clear: The revision will not be approved.
OK button	Approves the selected revisions.

A.1.8.2 Reject Revision Screen

The Reject Revision screen is used to approve revisions that are in a workflow. To access this screen, select one or more revisions on the [Repository Manager: Content Tab Screen](#) and do one of the following:

- Select **Functions, Reject**.
- Right-click, and select **Reject**.

Note: Only revisions that are in a workflow will be displayed on this screen.



Element	Description
Check boxes	Selected: The revision will be rejected. Clear: The revision will not be rejected.
Rejection message field	Enter a message that will be included in the rejection notification e-mail. This message will be sent for all rejected revisions.
OK button	Returns the selected revisions to the last reviewer/contributor step, and sends a rejection notification e-mail to the reviewers for that step.

A.1.9 Subscription Interface Screens

The following screens are used when managing subscriptions:

- [Repository Manager: Subscriptions Tab](#)
- [Add New/Edit Subscription Type Screen](#)
- [Fields Screen](#)
- [Users Subscribed Screen](#)
- [Define Filter Screen](#)
- [Content Item Subscribed Screen](#)
- [Add Subscription Screen](#)
- [Select User Screen](#)
- [Select Alias Screen](#)
- [Subscribers Screen](#)
- [Subscription Detail Screen](#)

A.1.9.1 Repository Manager: Subscriptions Tab

The Subscriptions tab of the Repository Manager is used to create and edit Criteria subscriptions. To access this tab, click the tab on the [Repository Manager Main Screen](#).



Element	Description
Type column	The name that you give to the subscription.
Field List column	The active criteria fields assigned to the subscription.
Description column	The description that corresponds to the subscription.
Status column	The status: enabled or disabled for the subscription.
Add button	Displays the Add New/Edit Subscription Type Screen .
Edit button	Displays the Add New/Edit Subscription Type Screen .
Delete button	Removes the subscription from the list.
Subscribers button	Displays the Users Subscribed Screen , on which you add and delete users subscribed to the subscription. Additionally, you can use this screen to view the files in this subscription.

A.1.9.2 Add New/Edit Subscription Type Screen

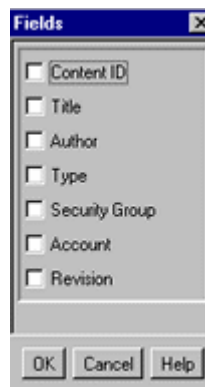
The Add New/Edit Subscription Type screen is used to add or edit a subscription. To access this screen, click **Add** or **Edit** on the [Repository Manager: Subscriptions Tab](#).



Element	Definition
Subscription Type field	The name that you give to the subscription.
Description field	A description of the subscription.
Notifications check box	Enabled: Causes e-mail messages to be sent to subscribers when content meeting the subscription criteria is checked in or updated. Disabled: Turns off e-mail notifications to subscribers. This is useful when a mail server is down or overwhelmed.
Criteria Fields box	Lists the metadata fields used to define the subscription.
Fields button	Displays the Fields Screen , which you use to define the metadata fields for the subscription.

A.1.9.3 Fields Screen

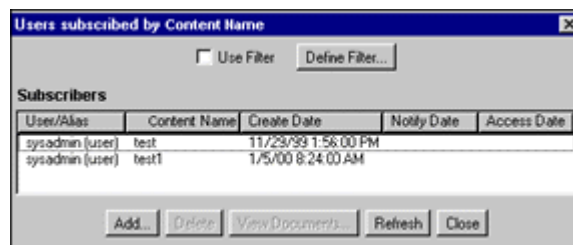
The Fields screen is used to define the metadata fields for a subscription. To access this screen, click **Fields** on the [Add New/Edit Subscription Type Screen](#).



Element	Definition
Check boxes	Selected: The metadata field is included in the subscription criteria. Clear: The metadata field is not included in the subscription criteria.

A.1.9.4 Users Subscribed Screen

The Users Subscribed screen is used to view, add, and delete specific users and aliases for a subscription. You can also use this screen to view the content items that meet the subscription criteria. To access this screen, select a subscription and click **Subscribers** on the [Repository Manager: Subscriptions Tab](#).



Element	Description
Use Filter check box	Select this check box to narrow the Subscribers list as defined by the Show Columns Screen .
Define Filter button	Displays the Define Filter Screen .
Subscribers list	Shows the subscribed users and aliases that match the filter settings. User/Alias column: The specific user/alias for the subscription. Criteria columns: A column is displayed for each metadata field that is included in the subscription criteria. Create Date column: The date the user or alias was added to the subscription (regardless of enabled/disabled status). Notify Date column: The last date that the user was notified by e-mail about a revision to the subscribed content item. (The notify date is not recorded for an alias.) Access Date column: The last date that the user accessed the file defined by the subscription criteria. (The access date is not recorded for an alias.)
Add button	Displays the Add Subscription Screen .
Delete button	Deletes the user or alias from the subscription.
View Content Items button	Displays the Content Item Subscribed Screen .
Refresh button	Refreshes the screen with the most current data.

A.1.9.5 Define Filter Screen

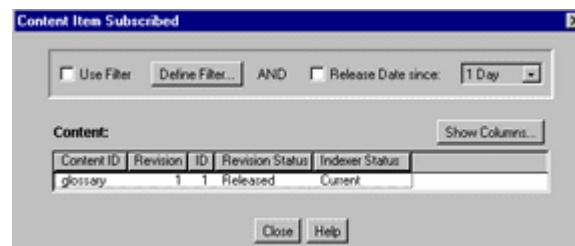
The Define Filter screen is used to narrow the list of users and aliases that is displayed on the Users Subscribed screen. To access this screen, click **Define Filter** on the [Users Subscribed Screen](#).

Element	Description
Check boxes	Select one or more check boxes to activate the filter fields.

Element	Description
Fields	The Users Subscribed Screen will be filtered based on the criteria entered. The following wildcards can be used in these fields: With MS Access or MSDE, * = one or more characters; ? = single character. With all other databases, % = one or more characters; _ = single character.
Alias Type field	User: Shows only users. Alias: Shows only aliases.
User/Alias field	A specific user or alias name.
Creation Date field	The date the user or alias was added to the subscription (regardless of enabled/disabled status).
Last Notification Date field	The last date that the user was notified by e-mail about a revision to the subscribed content item.
Last User Access Date field	The last date that the user accessed the file defined by the subscription criteria.

A.1.9.6 Content Item Subscribed Screen

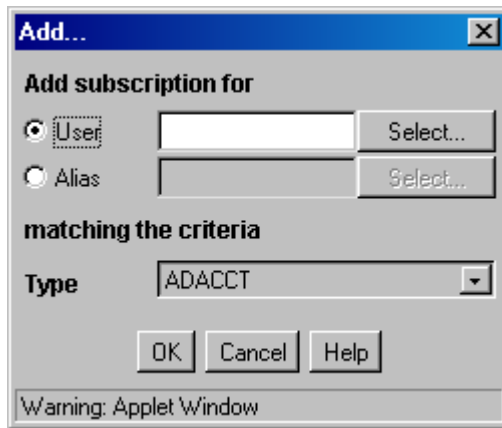
The Content Item Subscribed screen is used to view content items that match the criteria for a subscription. To access this screen, click **View Content Items** on the [Users Subscribed Screen](#).



Element	Description
Use Filter check box	Select this box to use the filter defined by the Show Columns Screen .
Define Filter button	Displays the Define Filter Screen .
Release Date since check box and list	Select this check box to narrow the Content list as defined by the Release Date option list.
Show Columns button	Displays the Show Columns Screen.
Content list	Shows the subscribed revisions that match the filter settings. The list displays 50 revisions per page. Double-clicking a revision displays the Information Screen for that revision. See " Define Filter Screen " on page A-5 for column descriptions.

A.1.9.7 Add Subscription Screen

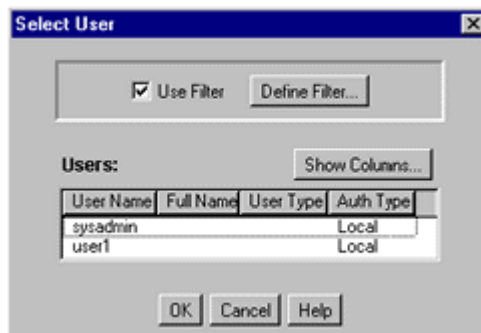
The Add screen is used to add a specific subscription for a user or alias. To access this screen, click **Add** on the [Users Subscribed Screen](#).



Element	Description
User option	The specified user is to be added to the subscription.
Alias option	The specified alias is to be added to the subscription.
Select (User) button	Displays the Select User Screen .
Select (Alias) button	Displays the Select Alias Screen .
Criteria fields	The specific metadata values that the selected user or alias will be subscribed to. All criteria fields specified for the subscription are displayed.

A.1.9.8 Select User Screen

The Select User screen is used to select a user to assign to a subscription. To access this screen, select the **User** option and click **Select** on the [Add Subscription Screen](#).



Element	Description
Use Filter check box	Select this check box to narrow the Users list as defined by the Define Filter Screen .
Define Filter button	Displays the Define Filter Screen .
Show Columns button	Displays the Show Columns Screen .
Users list	Shows the users that match the filter settings. See " Define Filter Screen " on page A-5 for column descriptions.

A.1.9.9 Select Alias Screen

The Select Alias screen is used to select an alias to assign to a subscription. To access this screen, select the **Alias** option and click **Select** on the [Add Subscription Screen](#).

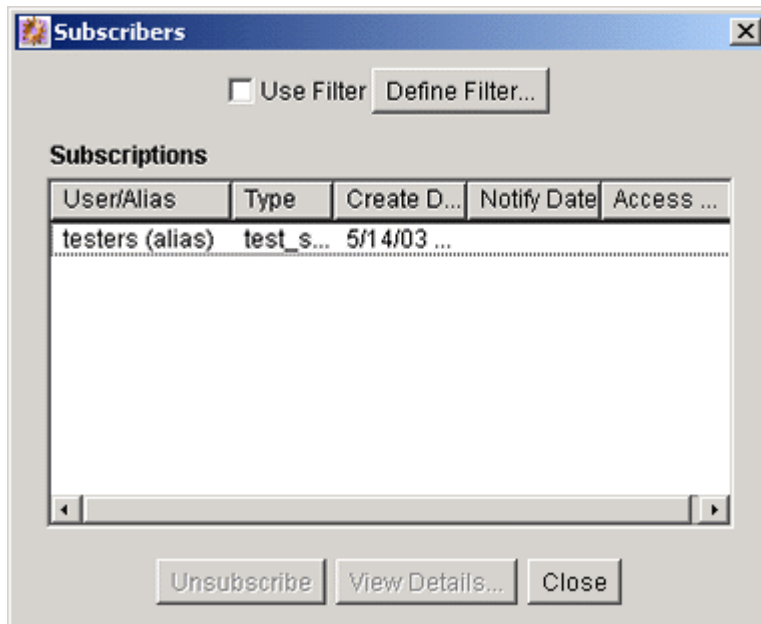


Element	Description
Alias column	Lists the available aliases.
Description column	A description of the alias.

A.1.9.10 Subscribers Screen

The Subscribers screen is used to view and unsubscribe users from subscriptions to a particular revision. To access this screen, select a revision on the [Repository Manager: Content Tab Screen](#), and do one of the following:

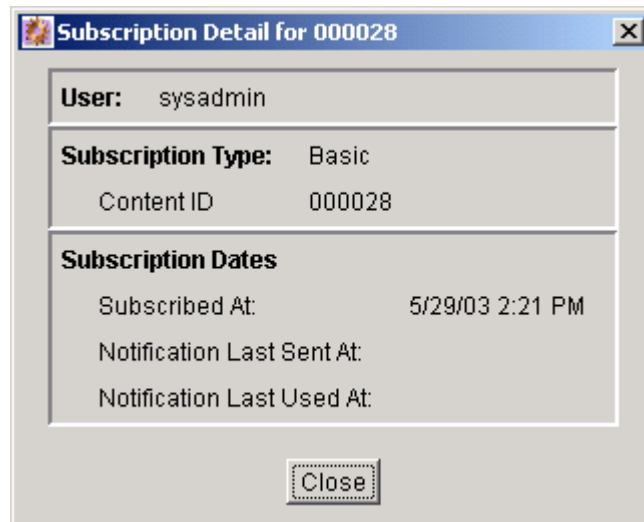
- Select **Functions, Subscribers**.
- Right-click and select **Subscribers**.



Element	Description
Use Filter check box	Select this check box to narrow the Subscriptions list as defined by the Show Columns Screen .
Define Filter button	Displays the Define Filter Screen .
User/Alias column	The user or alias that is subscribed to the revision.
Type column	The subscription type.
Create Date column	The date the user or alias was added to the subscription (regardless of enabled/disabled status).
Notify Date column	The last date that the user was notified by e-mail about a revision to the subscribed content item.
Access Date column	The last date that the user accessed the file defined by the subscription criteria.
Unsubscribe button	Cancels the selected subscription.
View Details button	Displays the Subscription Detail Screen .
Close button	Closes the Subscribers screen.

A.1.9.11 Subscription Detail Screen

The Subscription Detail screen is used to view the details of a subscription. To access this screen, select a user or alias on the [Subscribers Screen](#), and click **View Details**.



Element	Description
User or Alias field	The user or alias subscribed to the revision.
Subscription Type field	The type of subscription.
Metadata fields	The fields and values that define the subscription criteria.
Subscribed At field	The date the user or alias was added to the subscription (regardless of enabled/disabled status).
Notification Last Sent At field	The last date that the user was notified by e-mail about a revision to the subscribed content item.
Notification Last Used At field	The last date that the user accessed the file defined by the subscription criteria.

A.1.10 Schema Interface Screens

The following screens are used to create a schema:

- [Configuration Manager: Tables Tab](#)
- [Select Table Screen](#)
- [Create/Edit Table 'name' Screen](#)
- [Add/Edit Column Screen](#)
- [Configuration Manager: Views Tab](#)
- [Add View Screen: Select Table](#)
- [Add View Screen: Select Columns](#)
- [Add/Edit View Screens](#)
- [Edit Values For Views Screen](#)
- [Add/Edit Value Screen](#)
- [Edit Values: Edit Batch](#)
- [Configuration Manager: Relations Tab](#)
- [Add/Edit Relationship Screen](#)

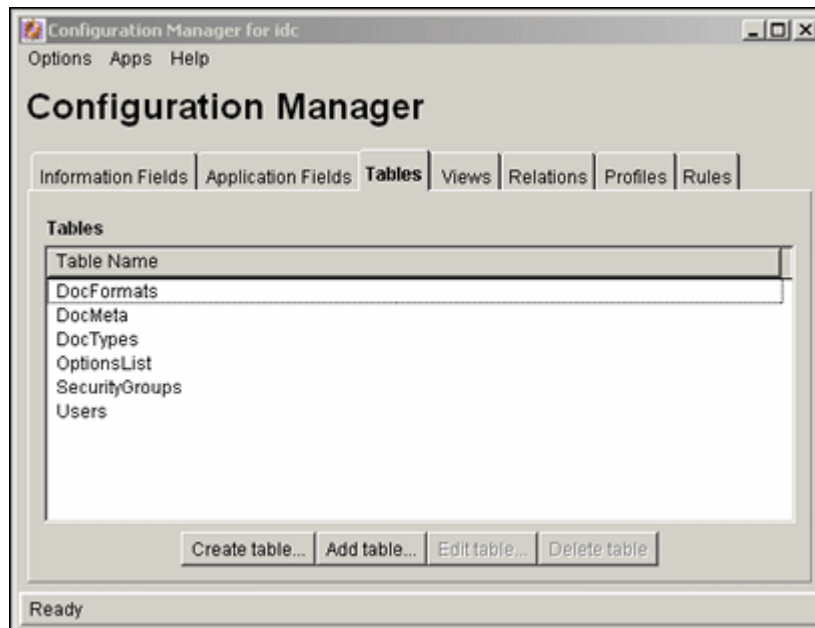
- [Edit Tree Screen](#)

A.1.10.1 Configuration Manager: Tables Tab

Important: While you can use core Content Server system tables such as Revisions, Alias, Documents, and Users you cannot save any edits to those tables (if you try to remove columns, alter column length, etc.)

The Tables tab on the Configuration Manager is used to create or edit tables and columns used in schemas. To access this screen, click the **Tables** tab on the [Configuration Manager Application Page](#).

Note: If you are not using existing tables when establishing views and relationships, you will need to use an external tool to generate records and populate the tables that you create using the Tables tab.

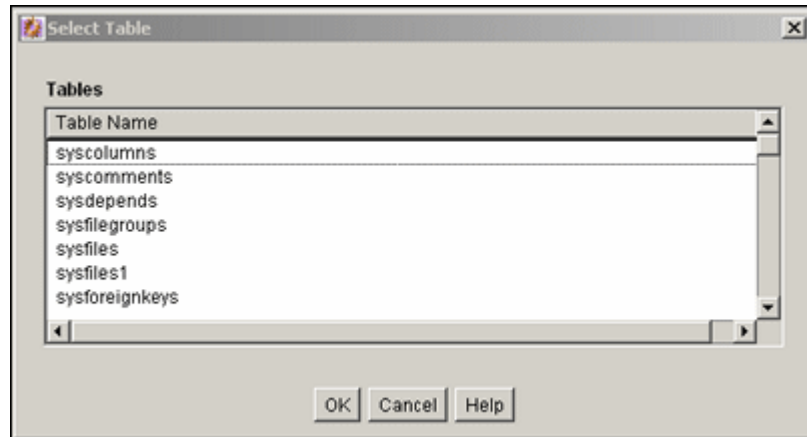


Element	Description
Table Name column	Lists the existing tables.
Create table button	Displays the Create/Edit Table 'name' Screen .
Add table button	Displays the Select Table Screen .
Edit table button	Displays the Create/Edit Table 'name' Screen .
Delete table button	Enables you to delete the selected table.

A.1.10.2 Select Table Screen

The Select Table screen is used to indicate which tables will be used in the schema. This screen displays a list of tables that can be used. It is accessed by clicking **Add**

Table from the [Configuration Manager: Tables Tab](#) screen or **Add Table** on the [Add View Screen: Select Table](#) page.

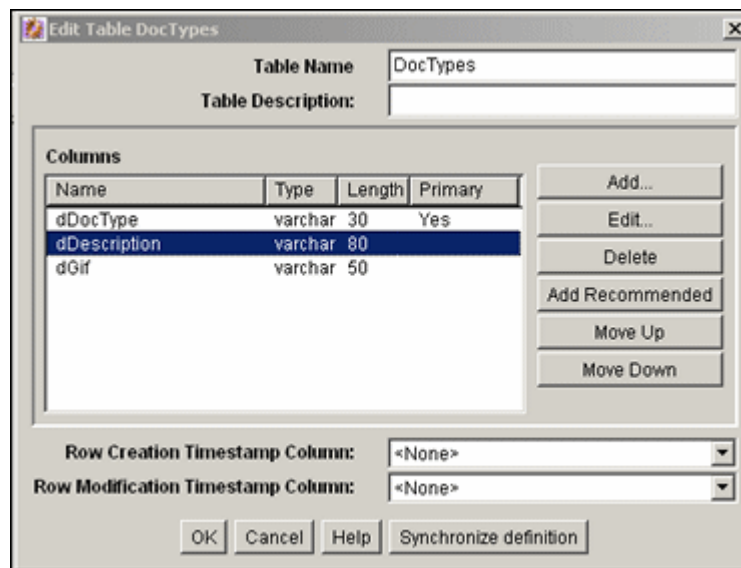


Element	Description
Table Name list	Lists the existing Content Server database tables from the list.

A.1.10.3 Create/Edit Table '*name*' Screen

This screen is used to specify the columns in tables to be used in a schema. To access this screen, click **Create Table** or **Edit Table** on the [Configuration Manager: Tables Tab](#) screen or click **Create Table** on the [Add View Screen: Select Table](#) page.

Important: While you can use core Content Server system tables such as Revisions, Alias, Documents, and Users you cannot save any edits to those tables.



Element	Description
Table Name field	The name of the table to be created or edited.

Element	Description
Table Description field	A brief description of the table to be created or edited.
Column fields	Displays the columns and their properties that are included in this table.
Add button	Displays the Add/Edit Column Screen .
Edit button	Displays the Add/Edit Column Screen .
Delete button	Enables you to delete the selected column.
Add Recommended button	Standard, recommended columns that are added to the table. For example, schPrimaryKey, schCreateTimestamp, schModifyTimestamp, and schSourceID.
Row Creation Timestamp Column list	This column must be added to the table to ensure that table replication functions properly. This field indicates the timestamp when a row in the table is created.
Row Modification Timestamp Column list	This column must be added to the table to ensure that table replication functions properly. This field indicates the timestamp when a row in the table is modified.
Synchronize definition	Loads the definition of the table from the database and synchronizes it with the one currently in view. This is particularly useful when two people are manipulating the table simultaneously and a warning is issued, indicating that the copy of the table is outdated. Synchronizing the definition will update the table.

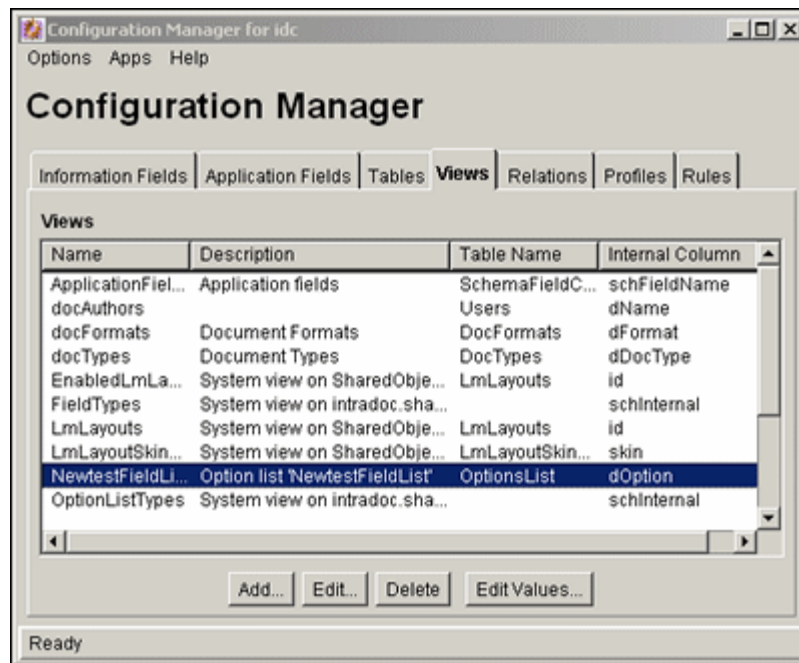
A.1.10.4 Add/Edit Column Screen

The Add/Edit Column screen is used to select the column that will be the primary key in the schema. To access this screen, select a column from the [Create/Edit Table 'name' Screen](#) and click **Edit** or click **Add** to create a new column.

Element	Description
Column Name field	The name of the column to be created or edited. Note: To avoid potential conflicts with Content Server database tables, always add a prefix to column names. For example, schColumnName.
Column Type list	Select the column type from the list (varchar is the default value).
Column Length field	The length of the value to be stored in the column.
Primary Key check box	If selected, this column is designated as a primary key for the table.

A.1.10.5 Configuration Manager: Views Tab

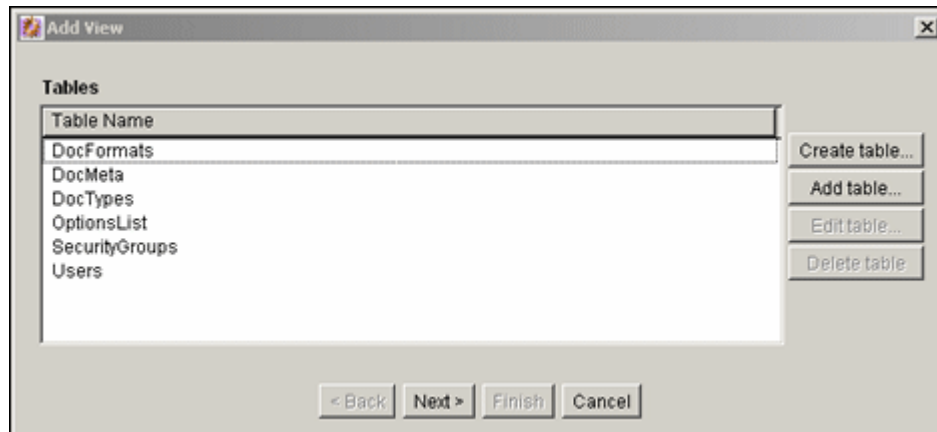
The Views tab is used to create the views used with the schemas. To access this screen, click the **Views** tab on the [Configuration Manager Application Page](#).



Element	Description
Views list	Lists the existing views.
Add button	Displays the Add View Screen: Select Table screen.
Edit button	Displays the Add/Edit View Screens .
Delete button	Enables you to delete the selected view.
Edit Values button	Displays a screen such as the Add/Edit Value Screen or the Option List Screen where you can add or change values in the table associated with the view. The screen which appears is dependent on the type of table used for the view.

A.1.10.6 Add View Screen: Select Table

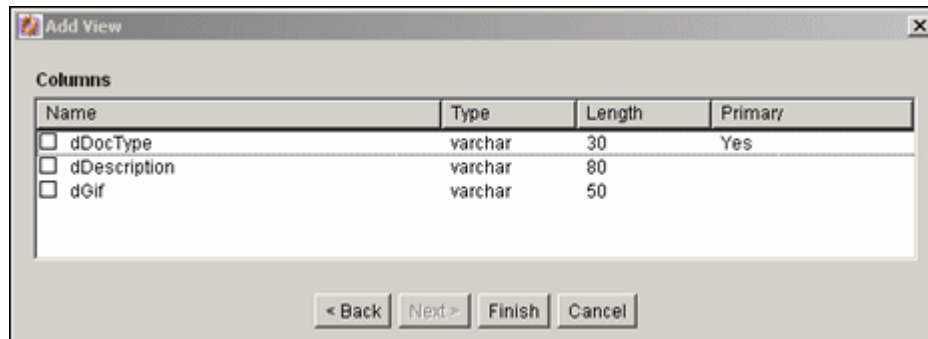
The Select Table screen is used to create a new view for a schema. To access this screen, click **Add** from the [Add View Screen: Select Table](#) screen.



Element	Description
Table Name list	Lists the tables created that do not already have a view.
Create table button	Displays the Create/Edit Table 'name' Screen , used to create a new table.
Add table button	Displays the Select Table Screen , used to add a table to the view.
Edit table button	Displays the Create/Edit Table 'name' Screen , used to alter the table and the primary keys.
Delete table button	Enables you to delete the selected table in this schema.

A.1.10.7 Add View Screen: Select Columns

The Select Column screen is used to choose the columns for the schema view. To access this screen, select a table from the [Add View Screen: Select Table](#) page and click **Next**.



Element	Description
Name list	Lists the names of the existing table columns that can be selected to be included in the view and published out to schema.

A.1.10.8 Add/Edit View Screens

The Add View screen has four main tabs that are used when adding views.

Add/Edit View Screen: Info Tab

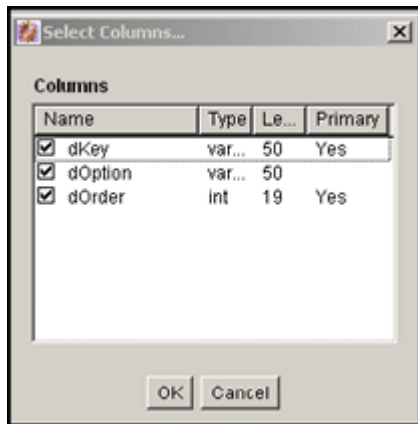
The Info Tab of the Add View screen is used to name the new view for the schema. This screen is displayed after you choose the columns to use for the view on the [Add](#)

View Screen: [Select Columns](#) page and click **Finish** or if you choose a view to edit on the [Configuration Manager: Views Tab](#).

Element	Description
View Name field	The name of the view to be created or edited.
View Description field	A brief description of the view to be created.
Table Name field	The table associated with this view.
Change Columns button	Displays the Change Column screen. Changes the columns originally selected.
Internal Column list	The column name in the view being created (used internally).
Visible Column list	The column name displayed to system users.
Default Display Expression field	This field determines how the name in the corresponding option list will be displayed. The value in this field can be either text or an Idoc Script expression. Note: Whatever value is set for this field will be displayed on the Content Information page rather than the actual value that is assigned to that field. To avoid this, clear this field when creating the view.

Change Columns

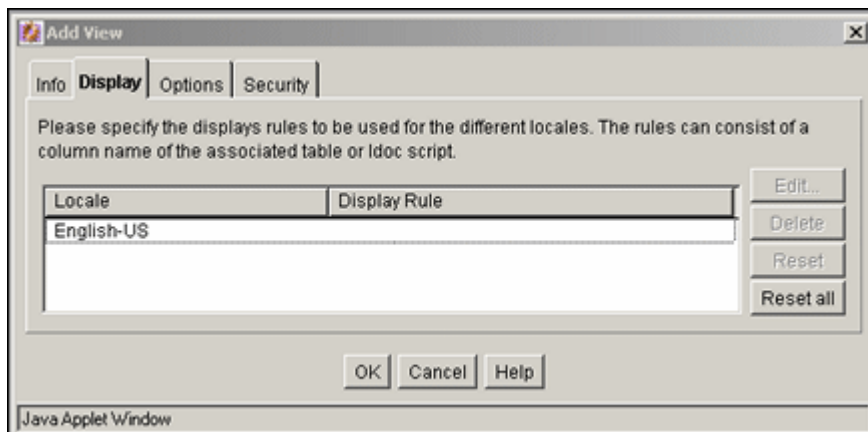
The Change Column screen is used to change the list of columns to be used in the schema view. This screen is accessed by click the **Change Columns** button next to the table name on the Info tab of the [Add/Edit View Screens](#).



Element	Description
Columns list	Lists the existing view columns and is used to change the columns originally selected using the Add View Wizard. See "Add View Screen: Select Columns" on page A-50.

Add/Edit View Screen: Display Tab

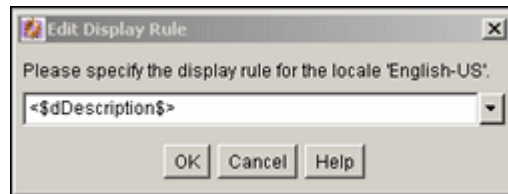
The Display tab on the Add View Screen is used to specify rules for the display of the schema data. This screen is displayed after you select a view and click **Edit** on the [Configuration Manager: Views Tab](#) or after you click **Add** on the [Configuration Manager: Views Tab](#) and follow the steps needed to create a new view. Click the **Display** tab to display this screen.



Element	Description
Locale/Display Rule list	Lists the defined display rules for the locales.
Edit button	Displays the Edit Display Rule screen for the selected rule.
Delete button	Enables you to delete the selected locale/display rule.
Reset button	Resets the display rule for the selected locale.
Reset all button	Resets all of the display rules for their respective locales.

Display Tab: Edit Display Rule

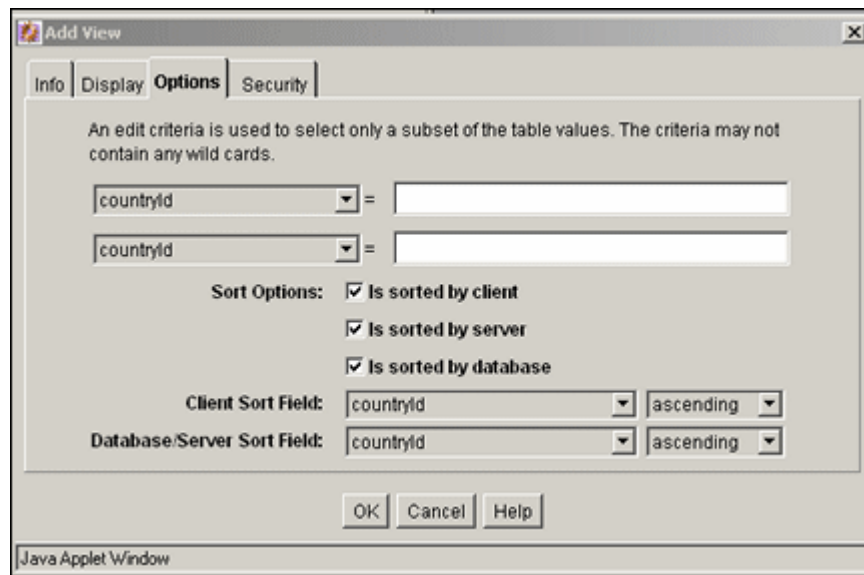
The Edit Display Rule screen is used to alter the display rules for the schema. To access this screen, click the **Edit** button on the Display Tab.



Element	Description
Display Rule list	The menu lists the columns originally selected on the Add View Screen: Select Columns screen.

Add/Edit View Screen: Options Tab

The Options tab of the Add View Screen is used to establish the sort order and criteria for the data in the schema. This screen is displayed after you click **Edit** on the [Configuration Manager: Views Tab](#) or after you click **Add** on the [Configuration Manager: Views Tab](#) and follow the steps needed to create a new view. Click the **Options** tab to display this screen.

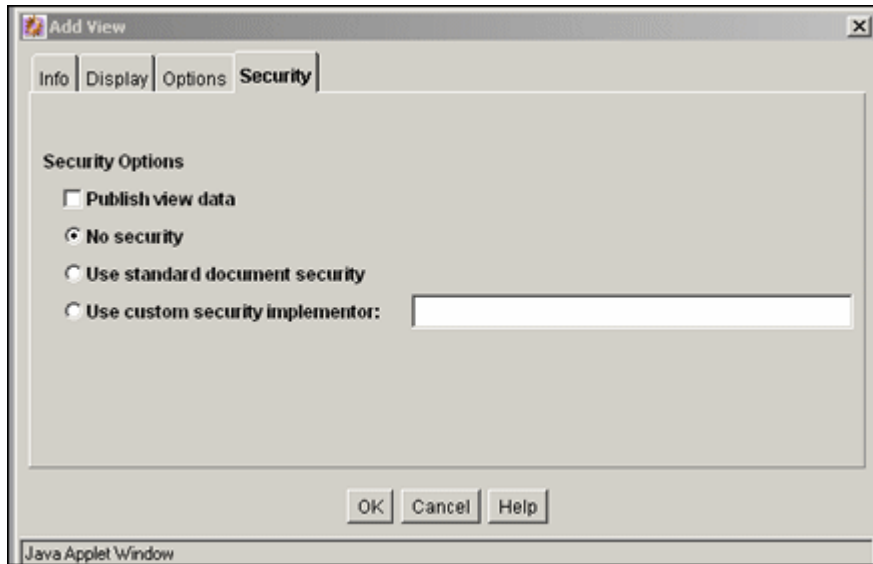


Element	Description
Column list	Lists the columns originally selected using Add View Screen: Select Columns .
Edit criteria field	Enter or edit the edit criteria statement which will be used to narrow the table values used in the view.
Is sorted by check boxes	As selected, either the server, the database, or the client database provides sorting functionality.
Sort Field lists	Lists the columns to be used in sorting.
Sort Order	Sorts either in ascending or descending order.

Add/Edit View Screen: Security Tab

The Security tab on the Add/Edit View Screen is used to establish the security rules to use for the schema. This screen is displayed after you click **Edit** on the [Configuration Manager: Views Tab](#) or after you click **Add** on the [Configuration Manager: Views Tab](#)

and follow the steps needed to create a new view. Click the **Security** tab to display this screen.

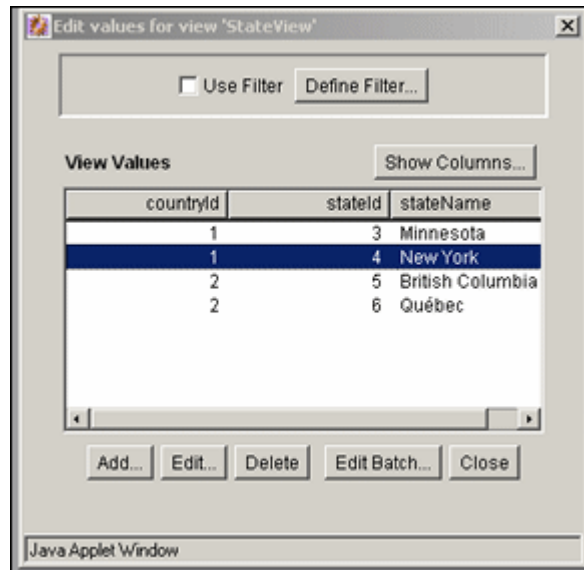


Element	Description
Publish view data	Allows the view that was set up to be visible to other users.
No security	Disables standard filter security for the schema.
Use standard document security	Provides a minimal level of security for the schema and the documents in the schema.
Use custom security implementator	Enables you to alter the security filter.

A.1.10.9 Edit Values For Views Screen

The Edit Value for Views screen is used to select values that are assigned to the view for editing. To access this screen, click **Edit Values** on the [Configuration Manager: Views Tab](#). This screen is identical to the [Edit View Values Screen](#), which can be accessed through the Configuration Manager.

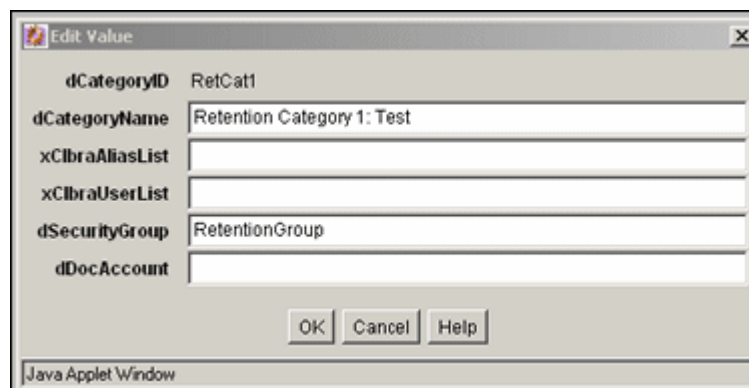
Note: The type of information displayed on this screen is dependent on the type of option list you chose to use for the view.



Element	Description
Use Filter/Define Filter	Used to alter which values are displayed in the selected columns.
Show Columns	Limits the number of columns to show in the view. See Show Columns Screen .
Add	Displays the Add/Edit Value Screen , used to edit values in the view or to add a new column to the table.
Edit	Displays the Add/Edit Value Screen , where you can alter the values in a column.
Delete	Used to delete a value from the table. You are prompted to confirm the deletion.
Edit Batch	Displays the Edit Values: Edit Batch screen, used to copy and paste large amounts of information in order to alter values.

A.1.10.10 Add/Edit Value Screen

This screen is used to change the values in the view or to add a new column to the table associated with the new metadata field. To access this screen, highlight a value assigned to the view on the [Edit Values For Views Screen](#) and click **Edit**.

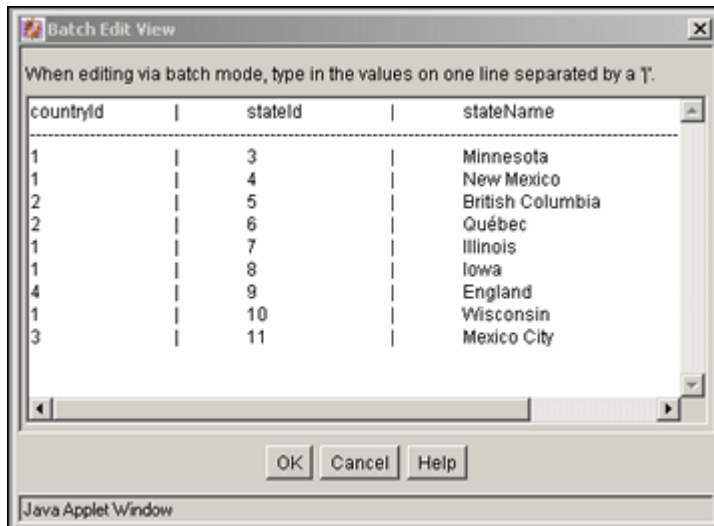


A.1.10.11 Edit Values: Edit Batch

The Edit Batch screen is used to alter large amounts of information in a line editor, compared to the single line edits made with the [Add/Edit Value Screen](#) or the [Edit View Values Screen](#).

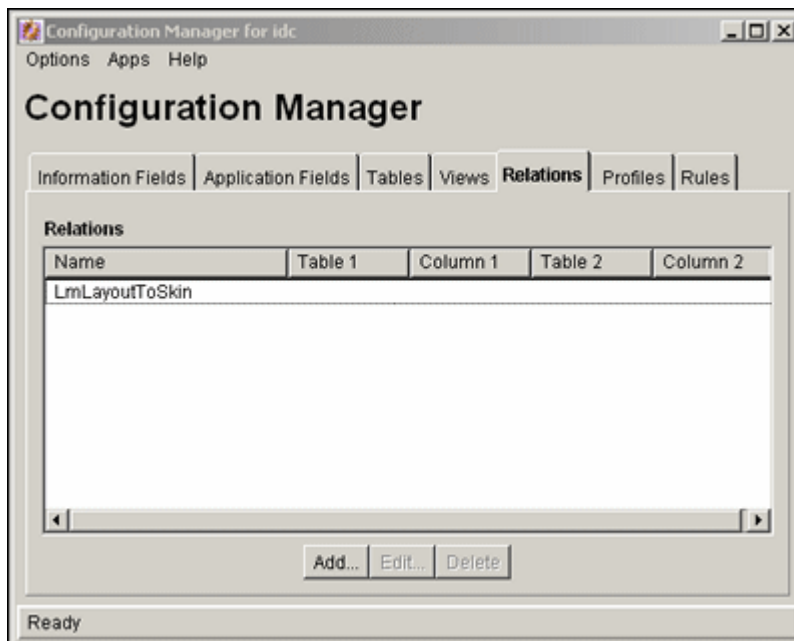
To access this screen, click **Edit Batch** on the [Edit Values For Views Screen](#).

The existing columns in the table are displayed. You can add values to the table by entering the data in the appropriate columns, separated by a pipe (|) symbol. Each row in the table should begin on a new line.



A.1.10.12 Configuration Manager: Relations Tab

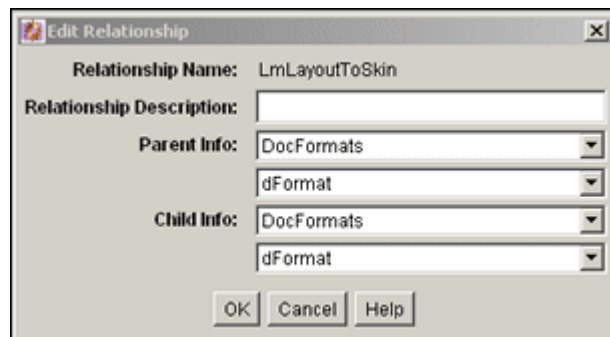
The Relations tab of the Configuration Manager is used to establish the relationship between schema views and schema tables. To access this screen, click the **Relations** tab on the Configuration Manager.



Element	Description
Relations list	Lists the existing relationships between specific tables and columns.
Add button	Displays the Add/Edit Relationship Screen .
Edit button	Displays the Add/Edit Relationship Screen .
Delete button	Enables you to delete the selected relationship.

A.1.10.13 Add/Edit Relationship Screen

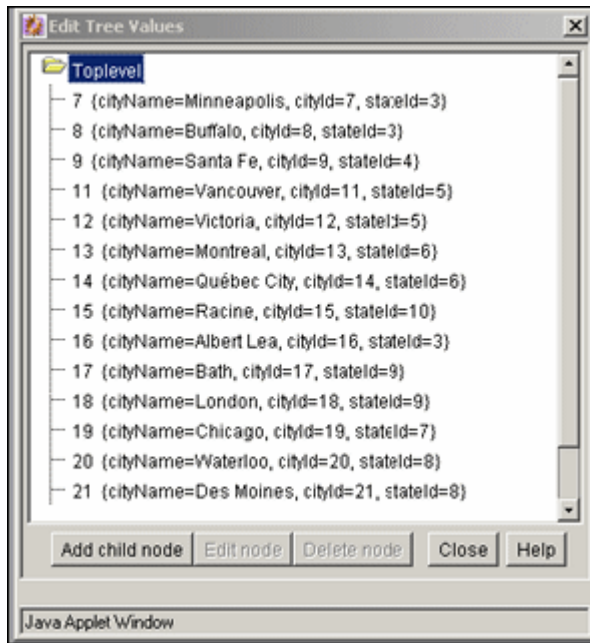
The Add/Edit Relationship Screen is used to add or alter a schema relationship between a table and a view. To access this screen, select **Add** or **Edit** from the [Configuration Manager: Relations Tab](#).



Element	Description
Relationship Name field	Name of relationship being created or edited.
Relationship Description field	Brief description of relationship.
Parent Info list	Name of the table that determines choices in dependent choice list.
Field list	Name of the column in the parent table.
Child Info list	Name of the table that is dependent upon the choice from the parent table.
Field list	Name of the column in the child table.

A.1.10.14 Edit Tree Screen

The Edit Tree screen provides a hierarchical view of the values in an option list or table. To access this screen, highlight a field associated with a table and select **Edit Tree** from the [Configuration Manager: Information Field Tab](#). Note that if you are using an option list created with the [Option List Screen](#), that option list appears rather than the hierarchical view of a tree.



Element	Description
Add Child Node	Active when a parent node is selected. This displays the Add Node screen, which has the same functionality as the Add/Edit Value Screen . See those field descriptions for details on use.
Edit Child Node	When a node is selected, displays the Edit Node screen, which has the same functionality as the Add/Edit Value Screen . See those field descriptions for details on use.
Delete node	Used to delete a node from the table. If a parent is deleted, subsequent children are also deleted.

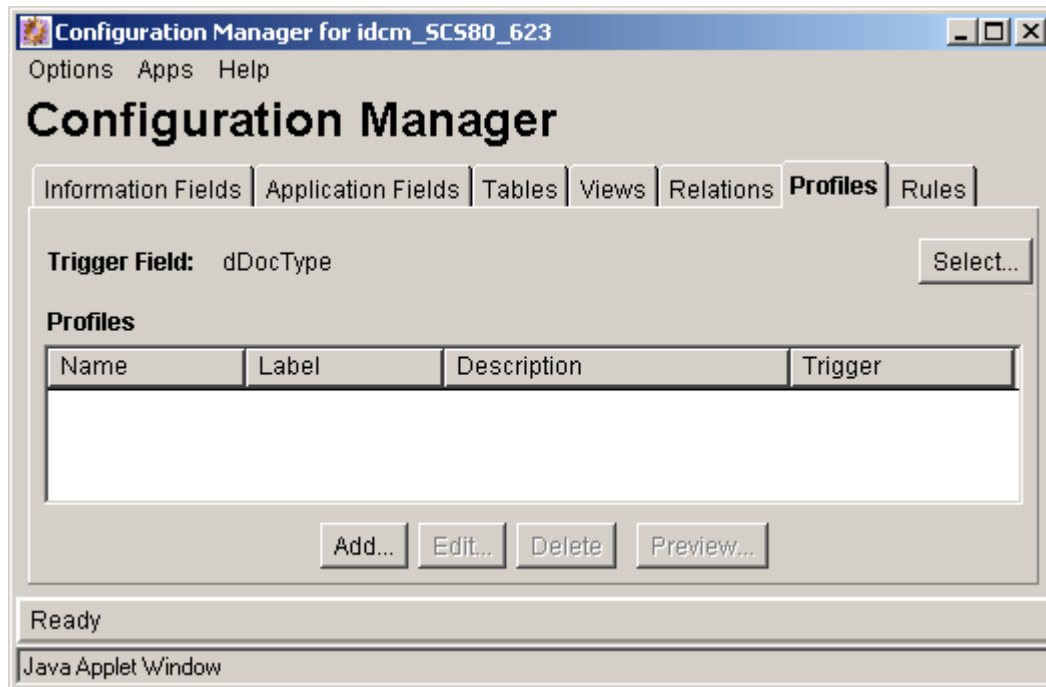
A.1.11 Content Profile Interface Screens

The following screens are used in the creation of a content profile:

- [Configuration Manager: Profiles Tab](#)
- [Edit Trigger Field Screen](#)
- [Add Profile Screen](#)
- [Add/Edit Profile Screen](#)
- [Add Rule Screen](#)
- [Preview Profile Screen](#)
- [Preview Results Screen](#)

A.1.11.1 Configuration Manager: Profiles Tab

The Profiles tab of the Configuration Manager is used to create, edit, delete, and preview profiles. You can also use it to define a profile trigger value and change or disable the associated profile trigger field values including selected filter and column options.



Element	Description
Select button	Displays the Edit Trigger Field Screen .
Name column	Lists the names of the existing created profiles.
Description column	Shows the description of each profile. Profile descriptions are provided when defining the profiles using the Add/Edit Profile Screen .
Trigger column	Lists the option list values used to identify checked in documents. This is the value selected from the Trigger list for this profile using the Add/Edit Profile Screen .
Add button	Displays the Add Profile Screen .
Edit button	Displays the Add/Edit Profile Screen .
Delete button	Enables you to delete the selected profile.
Preview button	Displays the Preview Profile Screen .

A.1.11.2 Edit Trigger Field Screen

The Edit Trigger Field screen is used to select or change the trigger field. To access this screen, click **Select** on the [Configuration Manager: Profiles Tab](#).

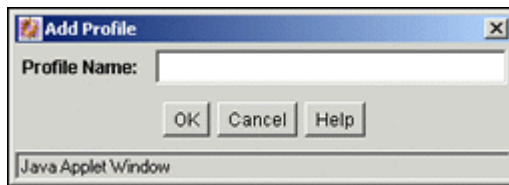
Caution: The trigger field may be changed. However, when it is changed, profiles may become invalid and it is the responsibility of the system administrator to resolve the situation. The user interface provides hints about invalid profiles.



Element	Description
Field Name list	The metadata fields that are defined as option lists are included in this drip-down list. If a metadata field is selected, the applicable option list values are provided in the Trigger field list on the Add/Edit Profile Screen . none specified: If selected, all profiles are essentially disabled.

A.1.11.3 Add Profile Screen

The Add Profile screen is used to create and name a new profile. To access this screen, click **Add** on the [Configuration Manager: Profiles Tab](#).



Element	Description
Profile Name field	The name of the profile being created.

A.1.11.4 Add/Edit Profile Screen

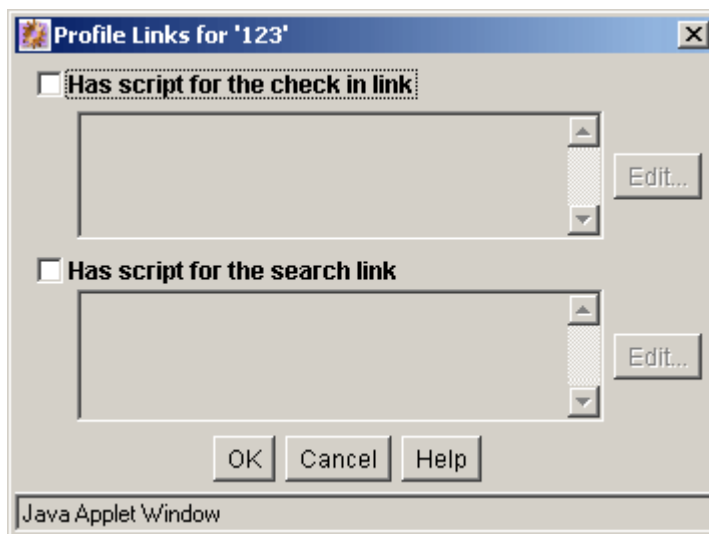
The Add/Edit Profile screen is used to define or edit a profile. This screen is displayed after clicking **OK** on the [Add Profile Screen](#) or by selecting a profile on the [Configuration Manager: Profiles Tab](#) and clicking **Edit**.

Element	Description
Name	Lists the name assigned to the profile that is being defined or edited. This is the name assigned to the newly created profile using the Add Profile Screen .
Display Label field	Used as the profile name displayed in the My Check ins and My Searches document profile links included in the My Oracle tray of the Content Server's Navigation area.
Description field	Description of the profile currently being defined.
Trigger list	Lists the option list values for the Trigger field selected on the Add Profile Screen . The choices consist of the applicable option list values associated with the profile trigger.
Exclude non-rule fields check box	Selected: Excludes all the metadata fields that do not belong to the rules included in the profile. Clear: All the metadata fields belonging to all rules are included.
Restrict personalization links	Selected: Allows admin user to suppress any or all check in or search links to a particular user or group of users. When selected, an Idoc Script based on user info is entered into the Profile Links Screen and must evaluate to true before a link is displayed. Clear (default): All check in or search links are displayed for all users by default, unless handled by another profile.
Edit button	Displays the Profile Links Screen .
Rules pane	Lists the rules included with the profile currently being defined.
Up button	Adjusts the specific placement order of the rules in the list. The position of each rule in the list is relevant to its priority in the evaluation process. The general position (top, middle, or bottom) in the list is established when the rule is initially added to the profile. See " Add Rule Screen " on page A-64 for more details. However, the Up button further refines the placement by moving the rule to a higher, more precise position.

Element	Description
Down button	Adjusts the specific placement order of the rules in the list. The position of each rule in the list is relevant to its priority in the evaluation process. The general position (top, middle, or bottom) in the list is established when the rule is initially added to the profile. See "Add Rule Screen" on page A-64 for more details. However, the Down button further refines the placement by moving the rule to a lower, more precise position.
Add button	Adds the profile to the system and includes it in the list of profiles on the Configuration Manager: Profiles Tab .
Delete button	Enables you to delete the selected rule and remove it from this profile.

A.1.11.5 Profile Links Screen

The Profile Links screen allows admin user to suppress the display of any or all check in or search links to a particular user or group of user by adding an Idoc Script that must evaluate to true before the link is displayed in the browser. To access the Profile Links screen, select the Restrict personalization links check box on the [Add/Edit Profile Screen](#) and click [Edit](#).



Element	Description
Has script for the check in link	Selected: Enables the associated Idoc Script which must evaluate to true before allowing the display of link on the Content Check In Form. Clear (default): Disables any associated Idoc Script.
Has script for the search link	Selected: Enables the associated Idoc Script which must evaluate to true before allowing the display of link on the Advanced Search Form. Clear (default): Disables any associated Idoc Script.
Edit	Displays the Check In/Search Link screen for either the check in or search link.

A.1.11.6 Check In/Search Link Screen: Conditions Tab

The Check In/Search Link screen is used to add the conditions that determine if any or all check in or search links are displayed on the Check In or search pages. The Conditions tab and Custom tab are mutually exclusive. If the Conditions tab is used to

define the conditions, the Custom tab is disabled and vice versa. See the "[Check In/Search Link Screen: Custom Tab](#)" on page A-64. When the Conditions tab on the Check In/Search Link screen initially displays, only the Conditions list pane is visible.

After a new default value is added using the [Check In/Search Link: Add Condition Screen](#), the lower expression pane is displayed. If an existing condition is selected, the lower expression pane also is displayed with populated fields available for editing. The fields in the lower expression pane are used to create and define the condition clauses.

To access the Check In/Search Link screen to define conditions for the display or suppression of the Check and Search links, select the **Has script for the check in link** check box or the **Has script for the search link** check box and click the corresponding **Edit** button on the [Profile Links Screen](#).



Element	Description
Conditions text pane	Displays the names of the conditions created for displaying or suppressing links.
Add button	Displays the Check In/Search Link: Add Condition Screen .
Delete button	Enables you to delete the selected condition.
Field list	Displays a choice list of metadata options.

Element	Description
Operator list	<p>The operator specifies the method for searching the metadata fields. The selected field determines the set of available values.</p> <p>Matches: The entire text within the specified metadata field contains the specified metadata Value.</p> <p>Contains Word: The text within the specified metadata field contains the metadata Value.</p> <p>Begins With: The text within the specified metadata field starts with the metadata Value.</p>
Value field	<p>Depending on the selected metadata Field, the Value field provides:</p> <ul style="list-style-type: none"> ■ An editable field to enter the data. ■ A choice list of appropriate options. ■ An editable field with a corresponding Select button.
Add button	Adds the completed clause (Field + Operator + Value) to the Clauses pane
Update button	Used to edit the completed clause without deleting and redefining the clause. Use it by highlighting the clause in the Clauses pane, edit the Value field, and click Update . The revised clause displays in the Clause pane.
Clauses pane	Lists the existing clauses for the metadata field attribute value.
Delete button	Enables you to delete the selected clause.

A.1.11.7 Check In/Search Link: Add Condition Screen

The Add Condition screen is used to provide the name of the new condition. To access this screen, click **Add** on the [Check In/Search Link Screen: Conditions Tab](#).

Note: This screen is identical to the Add Condition screen used to add a new activation condition. To view a sample Add Condition screen and read the applicable field description, see "[Edit Activation Condition: Add Condition Screen](#)" on page A-78.

A.1.11.8 Check In/Search Link Screen: Custom Tab

The Check In/Search Link screen is used to add the conditions that determine if any or all check in or search links are displayed on the Check In or search pages. The Conditions tab and Custom tab are mutually exclusive. If the Custom tab is used to define the display conditions, the Conditions tab is disabled and vice versa. See "[Check In/Search Link Screen: Conditions Tab](#)" on page A-62.

Note: This screen is identical to the Custom tab used to define specific activation condition attributes for a rule. To view a sample Custom tab and read the applicable field descriptions, see "[Check In/Search Link Screen: Custom Tab](#)" on page A-64.

A.1.11.9 Add Rule Screen

The Add Rule screen is used to include one or more rules in a profile. To access this screen, click **Add** on the [Add/Edit Profile Screen](#).

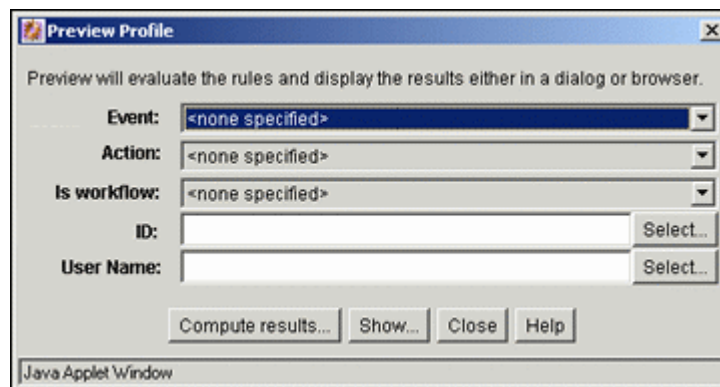


Element	Description
Name list	Lists the names of available rules that can be added to the profile currently being defined.
Rule Priority list	The selected option adjusts the general placement order of the rules in the list on the Add/Edit Profile Screen . The position of each rule in the list is relevant to its priority in the evaluation process. Placement can be further refined using either the Up or Down buttons. Top: Moves the rule to a relatively higher position. Middle: Moves the rule to a relatively central position. Bottom: Moves the rule to a relatively lower position.

A.1.11.10 Preview Profile Screen

The Preview Profile screen is used to review the rules and trigger field that comprise a selected profile. By selecting different options from the metadata field lists, a profile is simulated and you can preview what might occur based on various choices.

The evaluation results are displayed in either a dialog or browser window using the **Compute results** button or the **Show** button. This screen is useful to assess how rules affect metadata fields during the rule evaluation process. To access this screen, click **Preview** on the [Configuration Manager: Profiles Tab](#).

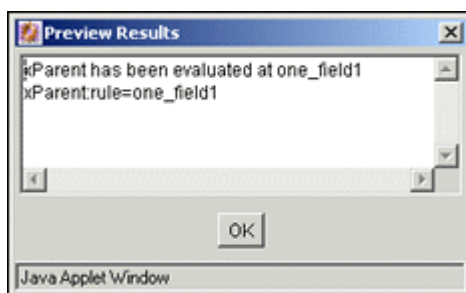


Element	Description
Event list	none specified: An event is not included in the profile evaluation. On Request: Includes the internal event resulting from a user's request to view a Content Server page. On Submit: Includes the internal event resulting from a content item contribution process. On Import: Includes the internal event resulting from a batch loading or archiving procedure. If the activation condition for a rule requires On Import, the rule is only active for Archiver, batch loading, or any other process that uses a special check in service (for example, Content Publisher).

Element	Description
Action list	<p>none specified: A user action is not included in the profile evaluation.</p> <p>Check in new: Includes the user action to contribute a new content item.</p> <p>Check in selected: Includes the user action to submit revisions to an existing checked in document.</p> <p>Content information: Includes the user action requesting to view the document information page.</p> <p>Content update: Includes the user action to submit revisions to the document information page.</p> <p>Search: Includes the user action requesting to view the search page.</p>
Is workflow list	<p>none specified: A workflow state is not included in the profile evaluation. The document may or may not be in a workflow, but its workflow state has not been specified.</p> <p>Yes: The document is in a workflow and you may want to display a different Content Information page.</p> <p>No: The document is not in a workflow.</p>
Content ID field/Select button	<p>The Content ID field displays the content ID of the selected document to use in the evaluation process to assess the profile's validity. This value is obtained based on the selected filter criteria.</p> <p>Clicking the corresponding Select button displays the Content Item View Screen.</p>
User Name field/Select button	<p>The User Name field displays the selected user to use in the evaluation process to assess the profile's validity. This value is obtained based on the selected filter criteria. This field is only used with the Compute results button and is not used with the Show button.</p> <p>Clicking the corresponding Select button displays the User View Screen.</p>
Compute Results button	Displays the Preview Results Screen .
Show button	Launches a browser window that displays a duplicate of the page that the end user will see. It is necessary to select On Request as the Event field value, select an Action value, and leave the User Name field blank.

A.1.11.11 Preview Results Screen

The Preview Results screen is used to compute and review the selections made on the Preview Profile screen. This screen displays the coded rule statements (script strings) that result from the preliminary evaluation and reflects any field value changes made to facilitate previewing various profile scenarios. To access this screen, click **Compute results** on the [Preview Profile Screen](#).



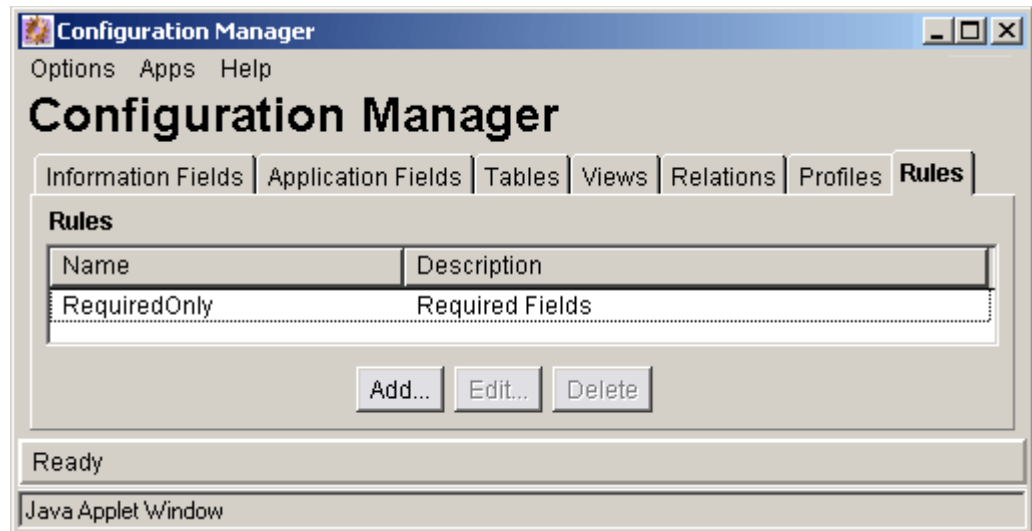
A.1.12 Profile Rules Interface Screens

The following screens are used to create profile rules:

- [Configuration Manager: Rules Tab](#)
- [Add/Edit Rule Screens](#)
- [Edit Group Header Screen](#)
- [Edit Activation Condition Screen Tabs](#)
- [Edit Activation Condition: Add Condition Screen](#)
- [Add Rule Field Screen](#)
- [Add/Edit Rule Field 'name' Screen](#)
- [Edit Default Value: Conditions Tab](#)
- [Edit Default Value: Add Condition Screen](#)
- [Edit Default Value: Select Field Screen](#)
- [Edit Default Value: Custom Tab](#)
- [Edit Derived Value: Conditions Tab](#)
- [Edit Derived Value: Add Condition Screen](#)
- [Edit Derived Value: Select Field Screen](#)
- [Edit Derived Value: Custom Tab](#)
- [Edit Restricted List Screen](#)

A.1.12.1 Configuration Manager: Rules Tab

The Rules tab of the Configuration Manager is used to create, define, edit, and delete the rules used in content profiles. Activation conditions can be defined and included in each rule and the display and values of information fields (metadata) can also be customized.



Element	Description
Name column	Lists the names of the existing created rules.

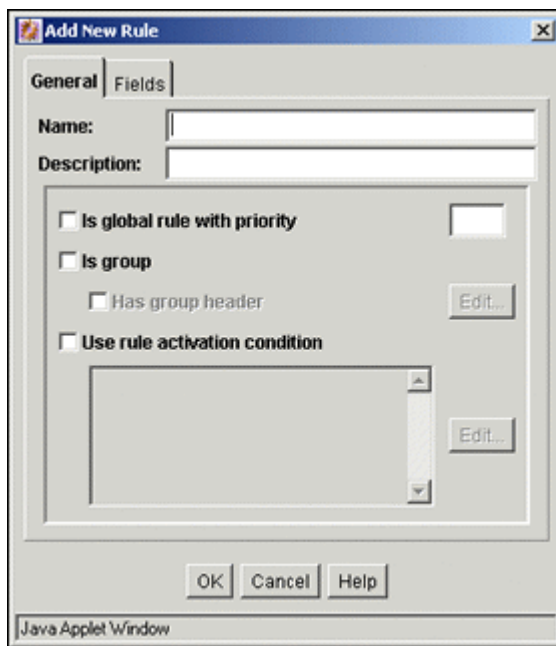
Element	Description
Description column	Shows the description of each rule. Rule descriptions are provided when defining the rules using the Add/Edit Rule Screens , Field Tab.
Add/Edit buttons	Displays the Add/Edit Rule Screens .
Delete button	Enables you to delete the selected rule.

A.1.12.2 Add/Edit Rule Screens

The Add/Edit Rule screen has two tabs used to specify rules and conditions for profiles.

Add/Edit Rule Screen: General Tab

The General tab on the Add/Edit Rule screen is used to specify global rules, define rule groups with optional headers, and define activation conditions. To access this screen, click **Add** or **Edit** on the [Configuration Manager: Rules Tab](#).



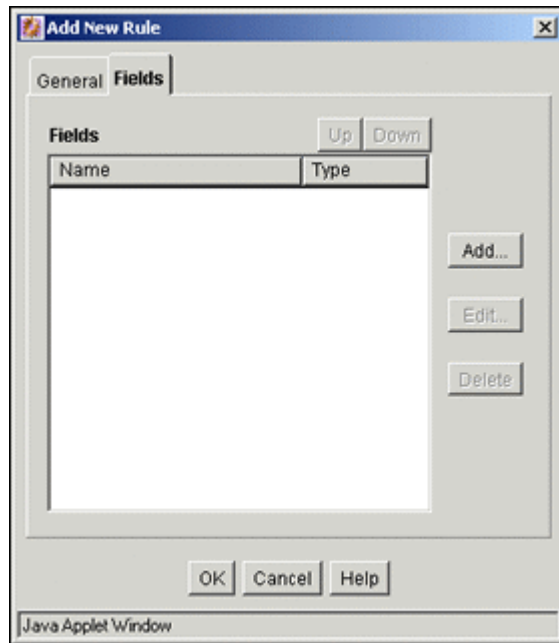
Element	Description
Name field	The name of the rule being defined or edited. You cannot edit the name of an existing rule.
Description field	Description of the rule being defined or edited. You can edit the description of an existing rule.
Is global rule with priority check box/ priority field	<p><i>Check box:</i></p> <p>Selected: Enables the rule as a global rule. Clear: Disables the rule as a global rule.</p> <p><i>Priority field:</i></p> <p>Lists the priority number of the global rule and determines the order in which the rule is evaluated. A low priority number means lower precedence. A lower priority rule is executed before higher priority rules. This allows higher priority rules to override the changes made by lower priority rules.</p>

Element	Description
Is group check box	<p>Selected: Enables metadata fields that belong to the rule being defined or edited to be relocated into a group.</p> <p>Clear: Disables custom metadata field grouping for the rule being defined or edited.</p>
Has group header check box/ Edit button	<p><i>Check box:</i></p> <p>Selected: Enables adding a label to a group of metadata fields that belong to the rule being defined or edited.</p> <p>Clear: Disables group labeling.</p> <p><i>Edit button:</i></p> <p>Displays the Edit Group Header Screen.</p>
Use rule activation condition check box	<p>Selected: Enables a profile to change based on rules that are applied or suppressed if specific conditions are met. Sets an activation condition for the rule being defined or edited.</p> <p>Clear: Disables the use of activation conditions for the rule being defined or edited.</p>
Edit button	Displays the Edit Activation Condition Screen Tabs .
Activation condition text pane	<p>Displays the computed Idoc Script for each activation condition created for the rule being defined or edited. The script statements are automatically generated after the condition is added and its properties are defined.</p> <p>Also displays any customized text entered in the custom text pane on the Custom Tab.</p>

Add/Edit Rule Screen: Fields Tab

The Fields tab on the Add/Edit Rule screen is used to select and add specific metadata fields to use in the rule being defined or edited. Each metadata field is assigned specific attributes such as the general position within the list of fields in the rule and a display type. Each metadata field can also be assigned optional attributes such as a required message, a default value, derivation features, or a restricted list.

For more information about assigning attributes to metadata fields in rules, see "[Add Rule Field Screen](#)" on page A-78 and "[Add/Edit Rule Field 'name' Screen](#)" on page A-79. To access the Fields tab, click **Add** or **Edit** on the [Configuration Manager: Rules Tab](#) and select the **Fields** tab.



Element	Description
Up button	Adjusts the specific placement order of the metadata fields in the list. The position of each metadata field in the list is relevant to its priority in the evaluation process. The general position (top, middle, or bottom) in the list is established when the field is initially added to the rule the Add Rule Field Screen . However, the Up button further refines the placement by moving the metadata field to a higher, more precise position.
Down button	Adjusts the specific placement order of the metadata fields in the list. The position of each metadata field in the list is relevant to its priority in the evaluation process. The general position (top, middle, or bottom) in the list is established when the field is initially added to the rule. However, the Down button further refines the placement by moving the metadata field to a lower, more precise position.
Name column	Lists the names of the metadata fields that belong to the rule being created or edited.
Type column	Provides the kind of display attribute assigned to each metadata field.
Add button	Displays the Add Rule Field Screen .
Edit button	Displays the Add/Edit Rule Field 'name' Screen with the previously defined attribute values of the metadata field being edited.
Delete button	Enables you to delete the selected metadata field and remove it from this rule.

A.1.12.3 Edit Group Header Screen

The Edit Group Header screen is used to add or edit a header to a group of metadata fields belonging to a rule being defined or edited. To access this screen, select **Is group** and **Has group header** and click the corresponding **Edit** button on the [Add/Edit Rule Screens](#).

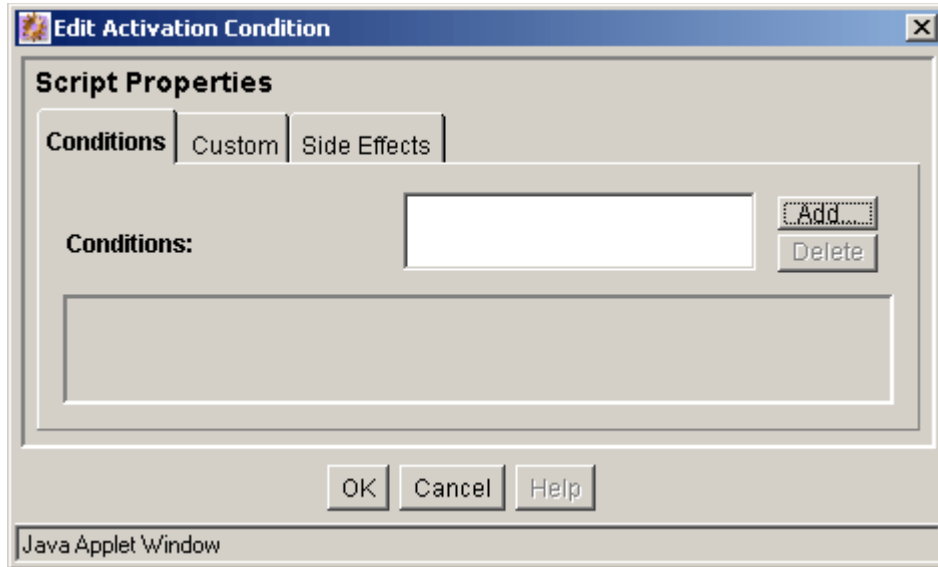
Element	Description
Hide Group by default	<p>Selected: Hides the group metadata fields and displays only the group header with a [Show] link when the page loads. Clicking the [Show] link displays the metadata fields.</p> <p>Clear (default): Displays the group metadata fields and group header with a [Hide] link when the page loads. Clicking the [Hide] link hides the metadata fields.</p>
Start Include	<p>Standard separator: Separates the group on a page by placing a standard horizontal rule above the header.</p> <p>Start HTML table: Begins a standard table border above the group header. When used in conjunction with <i>End HTML table</i>, the group is displayed in an HTML table with standard borders for each row, beginning above the header and ending after the last grouped metadata field.</p> <p>Display Nothing (default): No distinction is made on the page to separate the grouped fields, other than the group heading.</p>
End Include	<p>Standard separator: Separates the group on a page by placing a standard horizontal rule below the last metadata field.</p> <p>End HTML table: Ends a standard table border below the last grouped metadata field. When used in conjunction with <i>Begin HTML table</i>, the group is displayed in an HTML table with standard borders for each row, beginning above the header and ending after the last grouped metadata field.</p> <p>Display Nothing (default): No distinction is made on the page to separate the grouped fields, other than the group heading.</p>
Header text pane	Displays the header associated with a group of metadata fields belonging to the rule being defined or edited.

Note: The standard include options listed in the Start Include and End Include lists are defined in the DpDisplayIncludes table of the std_resources.htm file. To add additional include options, a custom component must be written defining the new includes and merging them into the DpDisplayIncludes table.

A.1.12.4 Edit Activation Condition Screen Tabs

The Edit Activation Condition screen is used to define specific conditions for a rule that when met affect the behavior of the associated profile.

To access the Edit Activation Condition screen, select the Use rule activation condition check box and click the corresponding **Edit** button on the [Add/Edit Rule Screens](#).



Element	Description
Conditions list pane	Displays the names of the activation conditions created for the rule being defined or edited.
Add button	Displays the Edit Activation Condition: Add Condition Screen .
Delete button	Enables you to delete the selected activation condition and remove it from the rule being defined or edited.

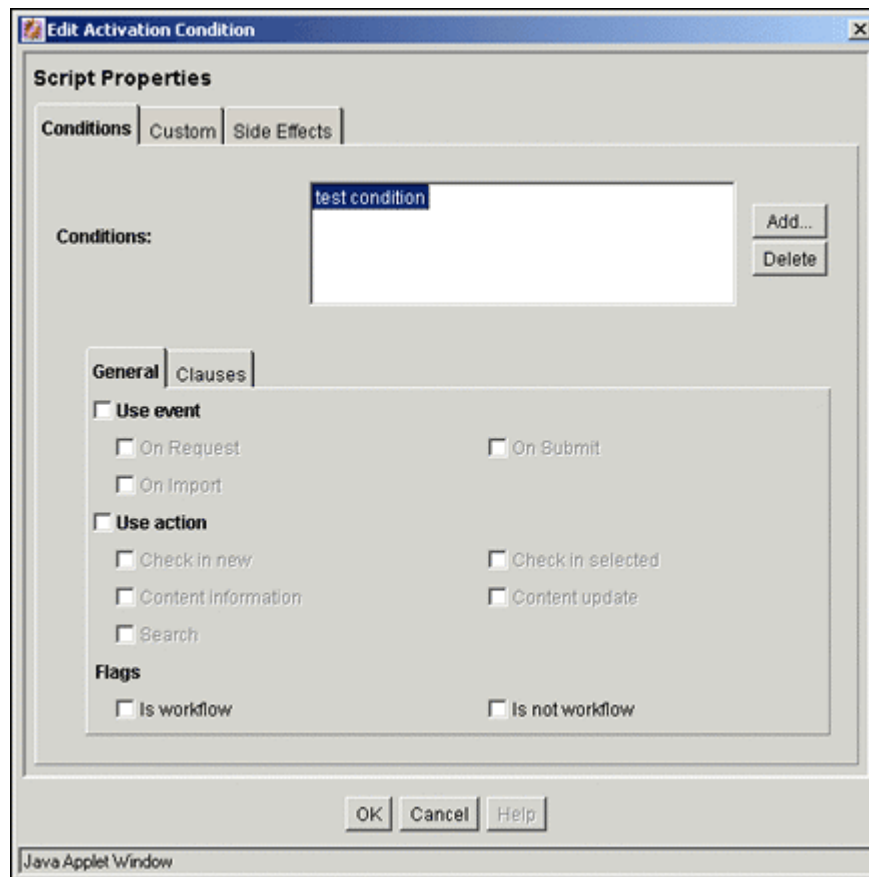
Edit Activation Condition: Conditions Tab

The Conditions tab and Custom tab are mutually exclusive. If the Conditions tab is used to define rule conditions, the Custom tab is disabled for the current rule and vice versa.

The Conditions tab on the Edit Activation Condition screen is used to add activation conditions and define them using the General and Clauses tabs displayed after adding the first condition.

Edit Activation Condition: Conditions Tab / General Tab

The General tab (on the Condition tab) is used to specify the event, action, or state that will trigger the activation condition of the rule being defined or edited. The General and Clauses tabs display after adding an activation condition using the [Edit Activation Condition: Add Condition Screen](#).



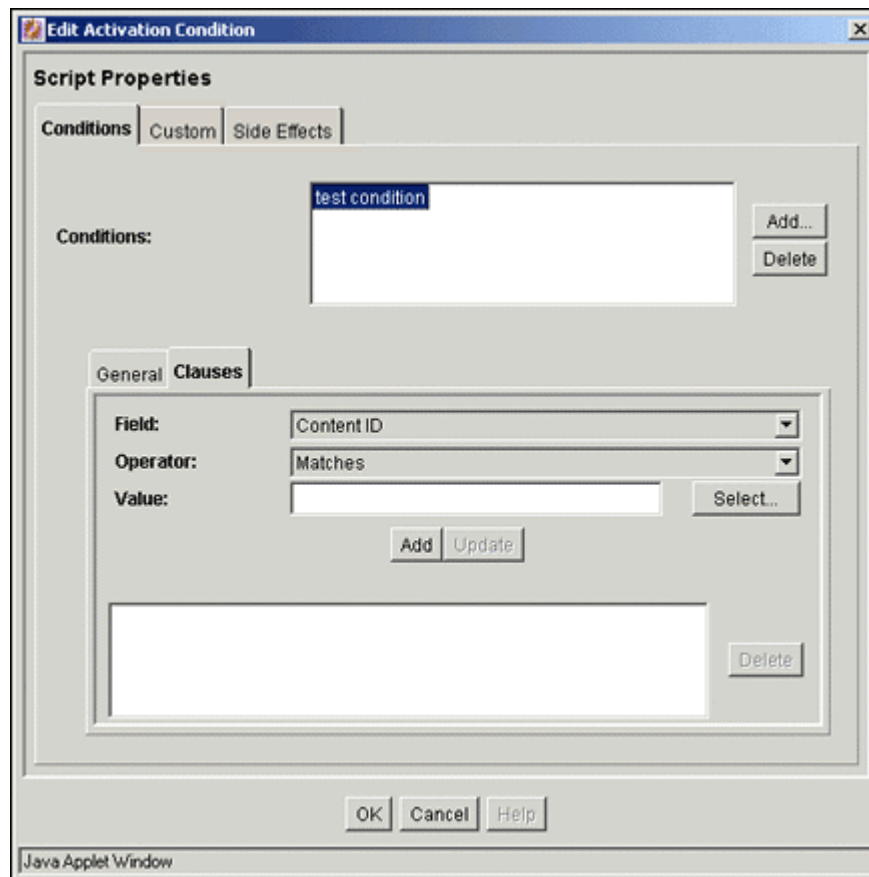
Element	Description
Use event check box	<p>If selected, enables a profile and/or rule to perform differently using activation conditions that are based on event acknowledgements detected by the system. Depending on the event, some profile rules may be activated while others are not.</p> <p>Selected: Enables event-based profile and/or rule behavior changes and activates the On Request, On Import, and On Submit check box options.</p> <p>Clear: Disables event-driven profile and/or rule behavior changes.</p>
On Request check box	<p>Selected: Enables profile and/or rule behavior change that is dependent on activation conditions defined with request events.</p> <p>Clear: Disables this type of profile and/or rule behavior change.</p>
On Import check box	<p>Selected: Enables profile and/or rule behavior change that is dependent on activation conditions defined with import events.</p> <p>Clear: Disables this type of profile and/or rule behavior change.</p>
On Submit check box	<p>Selected: Enables profile and/or rule behavior change that is dependent on activation conditions defined with submit events.</p> <p>Clear: Disables this type of profile and/or rule behavior change.</p>

Element	Description
Use action check box	<p>If selected, enables a profile and/or rule to perform differently using activation conditions that are based on a user action detected by the system. Depending on the action, some profile rules may be activated while others are not.</p> <p>Selected: Enables action-based profile and/or rule behavior changes and activates the Check in new, Content Information, Search, Check in selected, and Content update check box options.</p> <p>Clear: Disables action-driven profile and/or rule behavior changes.</p>
Check in new check box	<p>Selected: Enables profile and/or rule behavior change that is dependent on activation conditions defined with new contribution actions.</p> <p>Clear: Disables this type of profile and/or rule behavior change.</p>
Content Information check box	<p>Selected: Enables profile and/or rule behavior change that is dependent on activation conditions defined with information page viewing actions.</p> <p>Clear: Disables this type of profile and/or rule behavior change.</p>
Search check box	<p>Selected: Enables profile and/or rule behavior change that is dependent on activation conditions defined with search actions.</p> <p>Clear: Disables this type of profile and/or rule behavior change.</p>
Check in selected check box	<p>Selected: Enables profile and/or rule behavior change that is dependent on activation conditions defined with content item revision actions.</p> <p>Clear: Disables this type of profile and/or rule behavior change.</p>
Content update check box	<p>Selected: Enables profile and/or rule behavior change that is dependent on activation conditions defined with information page revision actions.</p> <p>Clear: Disables this type of profile and/or rule behavior change.</p>
Is in Workflow check box	<p>If selected, enables a profile and/or rule to perform differently using activation conditions that are based on the workflow state of a document. Depending on the state, some profile rules may be activated while others are not. When a document is in workflow, you may want to display a different Content Information page.</p> <p>Selected: Enables the in workflow flag for this activation condition.</p> <p>Clear: Disables the in workflow flag for this activation condition.</p>
Is not workflow check box	<p>Selected: Enables the not in workflow flag for this activation condition.</p> <p>Clear: Disables the not in workflow flag for this activation condition.</p>

Note: If neither workflow check box is selected, then the workflow state is ignored as a criteria for activation.

Edit Activation Condition: Conditions Tab / Clauses Tab

The Clauses tab (on the Condition tab) is used to generate custom Idoc Script clauses for the activation condition of the rule being defined or edited. The General and Clauses tabs are displayed after adding an activation condition using the [Edit Activation Condition: Add Condition Screen](#). The Clauses tab is essentially an Idoc Script wizard. It is primarily used to automate the process of creating Idoc Script statements.



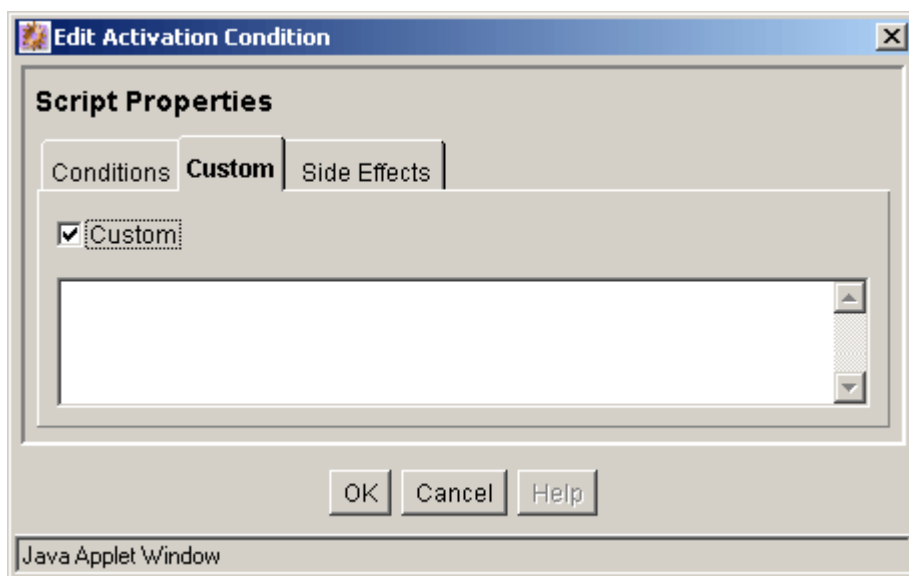
Element	Description
Field list	Displays a choice list of metadata options.
Operator list	<p>The operator specifies the method for searching the metadata fields. The selected field determines the set of available values. The following operators are available for all fields except Release Date and Expiration Date:</p> <p>Matches: The entire text within the specified metadata field contains the specified metadata Value.</p> <p>Contains Word: The text within the specified metadata field contains the metadata Value.</p> <p>Begins With: The text within the specified metadata field starts with the metadata Value.</p> <p><i>Release Date and Expiration Date operators:</i></p> <p>Is Date Before: The date in the specified metadata field occurs before the Value date.</p> <p>Is Date After: The date in the specified metadata field occurs after the Value date.</p>

Element	Description
Value field/ Select button	<p><i>Value field:</i></p> <p>Depending on the selected metadata Field, the Value field provides:</p> <ul style="list-style-type: none"> ■ An editable field to enter the data. ■ A choice list of appropriate options. ■ An editable field with a corresponding Select button. <p><i>Select button:</i></p> <ul style="list-style-type: none"> ■ If the Field value is Content ID, clicking the Select button displays the Custom Tab. ■ If the metadata Field is Author, clicking the Select button displays the User View Screen.
Add button	Adds the completed clause (Field + Operator + Value) to the Clause pane.
Update button	Used to edit the completed clause without deleting and redefining the clause. Use it by highlighting the clause in the Clause pane, edit the Value field, and click Update . The revised clause displays in the Clause pane.
Clause pane	Lists the existing clauses for the activation condition currently being defined or edited.
Delete button	Enables you to delete the selected clause.

Edit Activation Condition: Custom Tab

The Edit Activation Condition screen is used to define specific conditions for a rule that, when met, will affect the behavior of the associated profile. The Custom tab and Conditions tab are mutually exclusive. If the Custom tab is used to define rule conditions, the Conditions tab is disabled for the current rule and vice versa. See "[Edit Activation Condition Screen Tabs](#)" on page A-72.

The Custom tab on the Edit Activation Condition screen is used to manually write custom Idoc Script statements. To access this screen, select the Use rule activation condition check box and click the corresponding **Edit** button on the [Add/Edit Rule Screens](#).



Element	Description
Custom check box	Selected: Activates the custom text pane and enables you to write custom Idoc Script statements. If you use the Custom tab, then the Condition tab is disabled. Clear: Disables the custom text pane but enables the Conditions tab.
Custom text pane	Used to enter customized text when the Custom check box is selected. The information displays in the activation condition text pane on the Add/Edit Rule Screens .

Edit Activation Condition: Side Effects Tab

The Side Effects tab on the Add/Edit Activation Conditions screen allows you to do two things:

- Easily add name:value pairs as Idoc Script variables that get pushed to local data using Idoc Script if the activation condition is true.
- Add custom Idoc Script to a rule that is only evaluated if the activation condition is true.

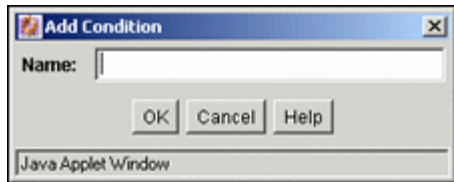
This means that because the side effect is Idoc Script and evaluated once a rule is activated, you can also include logical statements such as `like if`, `elseif`, and `else` statements, and can execute any Idoc Script function. For example, you can establish a rule that can control the activation of other rules. For more information scripting in Idoc Script, see the *Oracle Fusion Middleware Idoc Script Reference Guide*.

Element	Description
Key	The name used as the Idoc Script variable.
Value	A literal string equating to the Idoc Script variable.

Element	Description
Add	Converts the entered key and value to Idoc Script and displays it in the Idoc Script pane.
Idoc Script pane	Displays the Idoc Script of the entered keys and values, and allows direct entry of Idoc Script. Any Idoc Script function and logic entered here will be executed subsequent to the activation condition being met.

A.1.12.5 Edit Activation Condition: Add Condition Screen

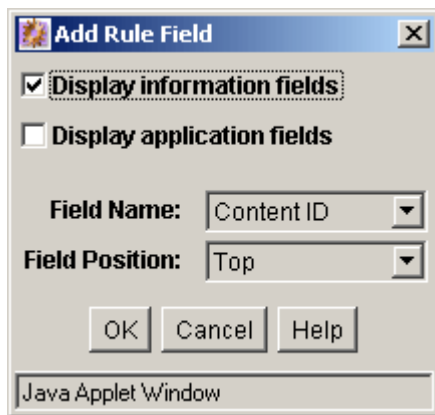
The Add Condition screen is used to provide the name of the new activation condition being added to the current rule. To access this screen, click **Add** on the [Edit Activation Condition Screen Tabs](#).



Element	Description
Name field	Displays the name of the activation condition being created.

A.1.12.6 Add Rule Field Screen

The Add Rule Field screen is used to include one or more metadata fields to the rule being created or edited. To access this screen, click **Add** on the [Add Rule Screen](#), Fields Tab.



Element	Description
Display information fields	Selected (default): Lists metadata fields in the Field name list, making them available for display on the standard check in and search pages. Clear: Hides any metadata fields in the Field name list.

Element	Description
Display application fields	<p>Selected: Lists any custom application fields in the Field name list, making them available for display on the standard check in and search pages.</p> <p>Clear (default): Hides any custom application fields in the Field name list.</p> <p>Important: By selecting an application field for display through the use of a rule, you are changing the field behavior as defined for the application normally used to display the field.</p>
Field Name list	Displays a choice list of available metadata fields that can be added to the rule being defined or edited.
Field Position list	<p>The position attribute is required for each metadata field added. The selected option adjusts the general placement order of the metadata fields in the list on the Add/Edit Rule Screens, Field Tab. The position of each metadata field in the list is relevant to its priority in the evaluation process. Placement can be further refined using either the Up or Down buttons.</p> <p>Top: Moves the metadata field to a relatively higher position.</p> <p>Middle: Moves the metadata field to a relatively central position.</p> <p>Bottom: Moves the metadata field to a relatively lower position.</p>

A.1.12.7 Add/Edit Rule Field '*name*' Screen

The Add/Edit Rule Field *name* screen is used to add and define the required and optional attributes to the metadata fields belonging to the rule being created or defined. This screen displays after adding a metadata field using the [Add Rule Field Screen](#). If you are editing an existing metadata field selected from the list on the [Add/Edit Rule Screens](#), Field Tab, this screen is displayed after clicking the **Edit** button.

Element	Description
Type list	<p>Each metadata field is required to have a display attribute assigned. The selected option determines how the metadata field is displayed on the Check In and Search pages.</p> <p>Edit: If selected, the metadata field is editable even if a default value is provided.</p> <p>Label: If selected, the metadata field is read-only (fixed but displayed).</p> <p>Hidden: If selected, the field does not display. However, when the user submits a content item, this metadata field value goes with and remains on the source page.</p> <p>Excluded: If selected, the field does not display. Unlike a hidden metadata field, an excluded value does not remain on the source page.</p> <p>Required: If selected, the metadata field is required. Two configuration variables can be set to distinctively format the metadata field name.</p>
Required Message field	The required message field attribute is optional for all type attributes except the Required type. If the metadata field is designated as required, a required message must be specified.
Use custom label	This field changes the label displayed in the Content Server interface for the field being included in the rule. This allows different content profiles to label and display metadata with user-specific terms.

Element	Description
Use custom include	<p>This option provides a way to insert a custom include in the page display, as a way to facilitate moving fields on the page. This provides a way to easily reposition standard fields. For example, creating a group that includes a placeholder field and the title field moves the title field below the other standard fields on the page. A custom include can then be used for the placeholder field to control how or if it is displayed.</p> <p>Selected: Allows the use of a custom include to replace the field in the page display. The provided includes are:</p> <ul style="list-style-type: none"> Standard Separator: Places a standard horizontal rule on the page where the field otherwise would be. Display Nothing: hides the field when the page is displayed. <p>Clear (default): The field is displayed.</p> <p>See Note below.</p>
Exclude field from the group count	<p>If the number of fields in a group is greater than zero, then the group header is displayed. For example, a placeholder field used for presentation purposes may be the only field in a group that is displayed. Enabling this check box prevents the group header from being displayed while keeping the presentation properties of the placeholder field.</p> <p>Selected: Prevents the field from being counted as part of the group.</p> <p>Clear (default): Includes the field when counting number of fields in a group.</p>
Use default value check box	<p>The default value field attribute is optional. This attribute allows a default value to display on the Content Check In Form or Search page. Default values are computed for On Request events. This field attribute is Idoc Script enabled. Additional schema values can also be used in creating the value if the selected metadata field is associated with a schema view. This is done using the Edit Default Value: Select Field Screen. For more detailed information about schema views, see "Configuration Manager: Views Tab" on page A-49.</p> <p>Selected: Activates the corresponding Edit button and enables the metadata field to use a default value.</p> <p>Clear (default): Disables the default value field attribute.</p>
Default value text pane/Edit button	<p>Displays the computed Idoc Script for the default value field attribute. The script statements are automatically generated after the default value attribute is added and its properties are defined. See "Edit Default Value: Conditions Tab" on page A-82 and "Edit Default Value: Custom Tab" on page A-85.</p>
Is derived field check box	<p>The derived value field attribute is optional. This attribute enables the metadata field to be set to a specified value on update or check-in. Derived values are computed for On Submit and On Import events. This field attribute is Idoc Script enabled. Also, additional schema values can be used in creating the value if the selected metadata field is associated with a schema view. This is done using the Edit Derived Value: Select Field Screen. For more detailed information about schema views, see "Configuration Manager: Views Tab" on page A-49.</p> <p>Selected: Activates the corresponding Edit button and enables the metadata field to use a derived value.</p> <p>Clear: Disables the derived value field attribute.</p>
Derived field text pane/Edit button	<p>Displays the computed Idoc Script for the derived value field attribute. The script statements are automatically generated after the derived value attribute is added and its properties are defined. See "Edit Derived Value: Conditions Tab" on page A-85 and "Edit Derived Value: Custom Tab" on page A-86.</p>

Element	Description
Has restricted list check box	<p>The restricted list field attribute is optional. On presentation, this attribute allows the option list metadata field to be restricted to either a specific list of values or to a filtered list of values.</p> <p>Selected: Activates the corresponding Edit button and enables the metadata field to use a restricted list.</p> <p>Clear: Disables the restricted list field attribute.</p>
Restricted list text pane/Edit button	<p>Displays the computed Idoc Script for the restricted list field attribute. The script statements are automatically generated after the restricted list attribute is added and its properties are defined. See "Edit Restricted List Screen" on page A-86.</p>

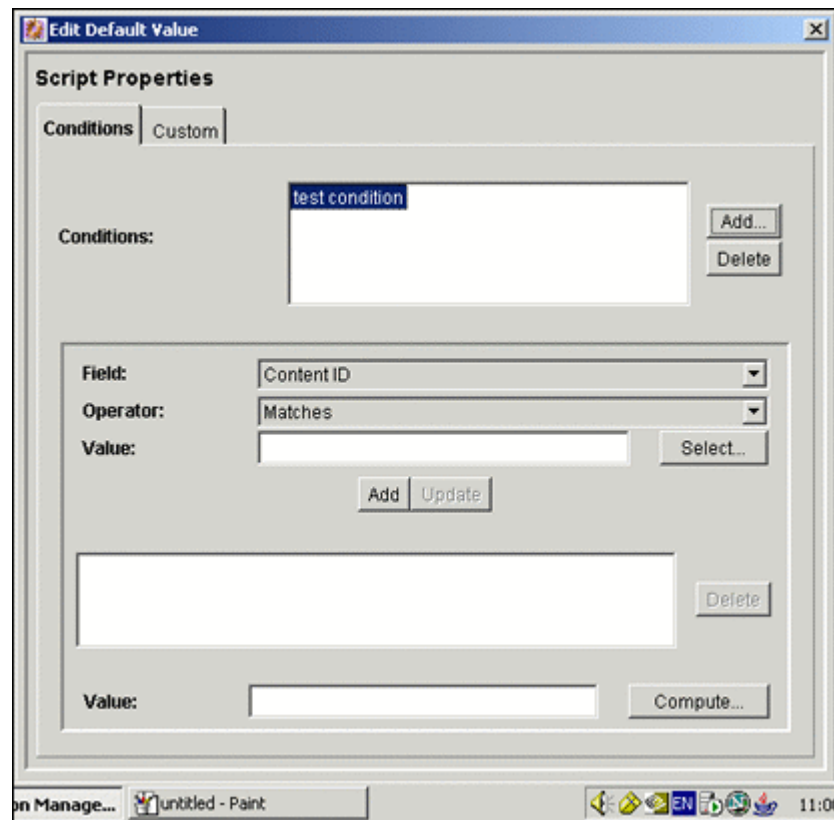
Note: The standard include options listed in the Start Include and End Include lists are defined in the DpDisplayIncludes table of the std_resources.htm file. To add additional include options, a custom component must be written defining the new includes and merging them into the DpDisplayIncludes table.

A.1.12.8 Edit Default Value: Conditions Tab

The Edit Default Value screen is used to add and define default value field attributes. The Conditions tab and Custom tab are mutually exclusive. If the Conditions tab is used to define the default value field attribute, the Custom tab is disabled and vice versa. See "[Edit Default Value: Custom Tab](#)" on page A-85. When the Conditions tab on the Edit Default Value screen initially displays, only the Conditions list pane is visible.

After a new default value is added using the [Edit Default Value: Add Condition Screen](#), the lower expression pane is displayed. If an existing default value is selected, the lower expression pane also is displayed with populated fields available for editing. The fields in the lower expression pane are used to create and define the default value field attribute that is Idoc Script enabled.

To access the Edit Default Value screen to define default value field attributes, select the **Use default value** check box and click the corresponding **Edit** button on the [Add/Edit Rule Field 'name' Screen](#).



Element	Description
Conditions text pane	Displays the names of the conditions created for the metadata field attribute value.
Add button	Displays the Edit Default Value: Add Condition Screen .
Delete button	Enables you to delete the selected condition for the metadata field attribute value.
Field list	Displays a choice list of metadata options.
Operator list	<p>The operator specifies the method for searching the metadata fields. The selected field determines the set of available values. The following operators are available for all fields except Release Date and Expiration Date:</p> <p>Matches: The entire text within the specified metadata field contains the specified metadata Value.</p> <p>Contains Word: The text within the specified metadata field contains the metadata Value.</p> <p>Begins With: The text within the specified metadata field starts with the metadata Value.</p> <p><i>Release Date and Expiration Date operators:</i></p> <p>Is Date Before: The date in the specified metadata field occurs before the Value date.</p> <p>Is Date After: The date in the specified metadata field occurs after the Value date.</p>

Element	Description
Value field/ Select button	<p><i>Value field:</i></p> <p>Depending on the selected metadata Field, the Value field provides:</p> <ul style="list-style-type: none"> ■ An editable field to enter the data. ■ A choice list of appropriate options. ■ An editable field with a corresponding Select button. <p><i>Select button:</i></p> <ul style="list-style-type: none"> ■ If the Field value is Content ID, clicking the Select button displays the Edit Default Value: Select Field Screen. ■ If the metadata Field is Author, clicking the Select button displays the User View Screen.
Add button	Adds the completed clause (Field + Operator + Value) to the Clause pane
Update button	Used to edit the completed clause without deleting and redefining the clause. Use it by highlighting the clause in the Clause pane, edit the Value field, and click Update . The revised clause displays in the Clause pane.
Condition expression pane	Lists the existing clauses for the metadata field attribute value.
Delete button	Enables you to delete the selected clause.
Value field	Displays the computed value after clicking the Compute button on this screen and the OK button on the Edit Default Value: Select Field Screen .
Compute button	Displays the Edit Default Value: Select Field Screen .

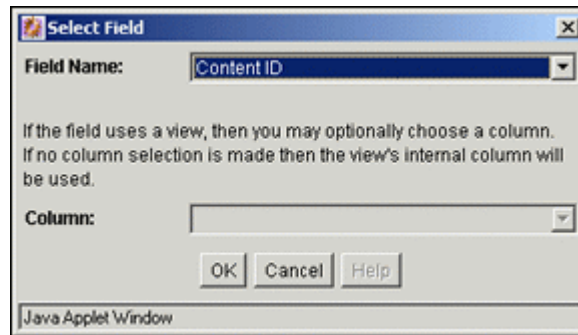
A.1.12.9 Edit Default Value: Add Condition Screen

The Add Condition screen is used to provide the name of the new default value field attribute. To access this screen, click **Add** on the [Edit Default Value: Conditions Tab](#).

Note: This screen is identical to the Add Condition screen used to add a new activation condition. To view a sample Add Condition screen and read the applicable field description, see "[Edit Activation Condition: Add Condition Screen](#)" on page A-78.

A.1.12.10 Edit Default Value: Select Field Screen

The Select Field screen is used to select a default metadata value to include when the completed default value clause (Field + Operator + Value) is processed. Additionally, schema values can be used to create the default value field attribute if the metadata field is associated with a schema view. To access this screen, click **Compute** on the [Edit Default Value: Conditions Tab](#). For more detailed information about schema views, see "[Configuration Manager: Views Tab](#)" on page A-49.



Element	Description
Field Name list	Displays a choice list of metadata options.
Column list	Displays a choice list of table columns. A column is shown only if the metadata field is associated with a schema view. In this case, you can select a column value from the table and use it in the computation. For more detailed information about schema views, see " Configuration Manager: Views Tab " on page A-49.

A.1.12.11 Edit Default Value: Custom Tab

The Edit Default Value screen is used to add and define default value field attributes. The Conditions tab and Custom tab are mutually exclusive. If the Custom tab is used to define the default value field attribute, the Conditions tab is disabled and vice versa. See "[Edit Default Value: Conditions Tab](#)" on page A-82.

Note: This screen is identical to the Custom tab used to define specific activation condition attributes for a rule. To view a sample Custom tab and read the applicable field descriptions, see "[Edit Activation Condition Screen Tabs](#)" on page A-72, Custom Tab.

A.1.12.12 Edit Derived Value: Conditions Tab

The Edit Default Value screen is used to add and define derived value field attributes. The Conditions tab and Custom tab are mutually exclusive. If the Conditions tab is used to define the default value field attribute, the Custom tab is disabled and vice versa. When the Conditions tab on the Edit Default Value screen initially displays, only the Conditions list pane is visible.

After a new default value is added using the [Edit Derived Value: Add Condition Screen](#), the lower expression pane is displayed. Or, if an existing default value is selected, the lower expression pane displays with populated fields available to be edited. The fields in the lower expression pane are used to create and define the default value field attribute that is Idoc Script enabled. To access the Edit Default Value screen to define derived value field attributes, select the Use derived value check box and click the corresponding **Edit** button on the [Add/Edit Rule Field 'name' Screen](#).

Note: This screen is identical to the Conditions tab (on the Edit Default Value screen) used to add and define default value field attributes. To view a sample Custom tab and read the applicable field descriptions, see "[Edit Default Value: Conditions Tab](#)" on page A-82.

A.1.12.13 Edit Derived Value: Add Condition Screen

The Add Condition screen is used to provide the name of the new derived value field attribute. To access this screen, click **Add** on the [Edit Derived Value: Conditions Tab](#).

Note: This screen is identical to the Add Condition screen used to add a new activation condition. To view a sample Add Condition screen and read the applicable field description, see the "[Edit Activation Condition: Add Condition Screen](#)" on page A-78.

A.1.12.14 Edit Derived Value: Select Field Screen

The Select Field screen is used to select a default metadata value to include when the completed derived value clause (Field + Operator + Value) is processed. Schema values can also be used to create the default value field attribute if the metadata field is associated with a schema view. To access this screen, click **Compute** on the [Edit Derived Value: Conditions Tab](#). For more detailed information about schema views, see "[Configuration Manager: Views Tab](#)" on page A-49.

Note: This screen is identical to the Select Field screen used to select a default metadata value to include in the processed default value clause. To view a sample Select Field screen and read the applicable field descriptions, see "[Edit Default Value: Select Field Screen](#)" on page A-84.

A.1.12.15 Edit Derived Value: Custom Tab

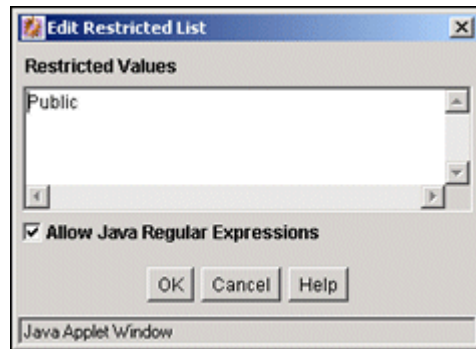
The Edit Derived Value screen is used to add and define default value field attributes. The Conditions tab and Custom tab are mutually exclusive. If the Custom tab is used to define the default value field attribute, the Conditions tab is disabled and vice versa. See "[Edit Derived Value: Conditions Tab](#)" on page A-85.

Note: This screen is identical to the Custom tab used to define specific activation condition attributes for a rule. To view a sample Custom tab and read the applicable field descriptions, see "[Edit Activation Condition Screen Tabs](#)" on page A-72, Custom Tab.

A.1.12.16 Edit Restricted List Screen

The Edit Restricted List screen is used to allow the option list metadata field (on presentation) to be restricted to either a specific list of values or to a filtered list of values resulting from the evaluation process of one or more regular expressions.

Selecting or not selecting the option to use regular expressions determines how the system interprets the values entered in the text pane. To access this screen, select the **Has restricted list** check box and click the corresponding **Edit** button on the [Add/Edit Rule Field 'name' Screen](#).



Element	Description
Restricted value text pane	Allows you to enter the specific items to be included in the modified option list. If the metadata field for this restricted list has been defined as an option list, then the displayed results in the user interface will include the values entered in this pane if they are also in the master option list.
Allow Java Regular Expressions check box	<p>Selected: Enables displaying a filtered list of values based on the evaluation of one or more regular expressions. Using wild cards and other special characters in the expression will display a subset of all values in the metadata field's usual option list that match the evaluated regular expression.</p> <p>Clear: Enables displaying a specific set of actual values, as they are specified in the text pane provided each value is in the master list. This selection overrides the metadata field's master option list and sets the list to a specified set of values. The values are not evaluated, so whatever is entered into the text pane will be displayed.</p>

A.2 Workflows User Interface

This section contains information about the interface screens used with workflows.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

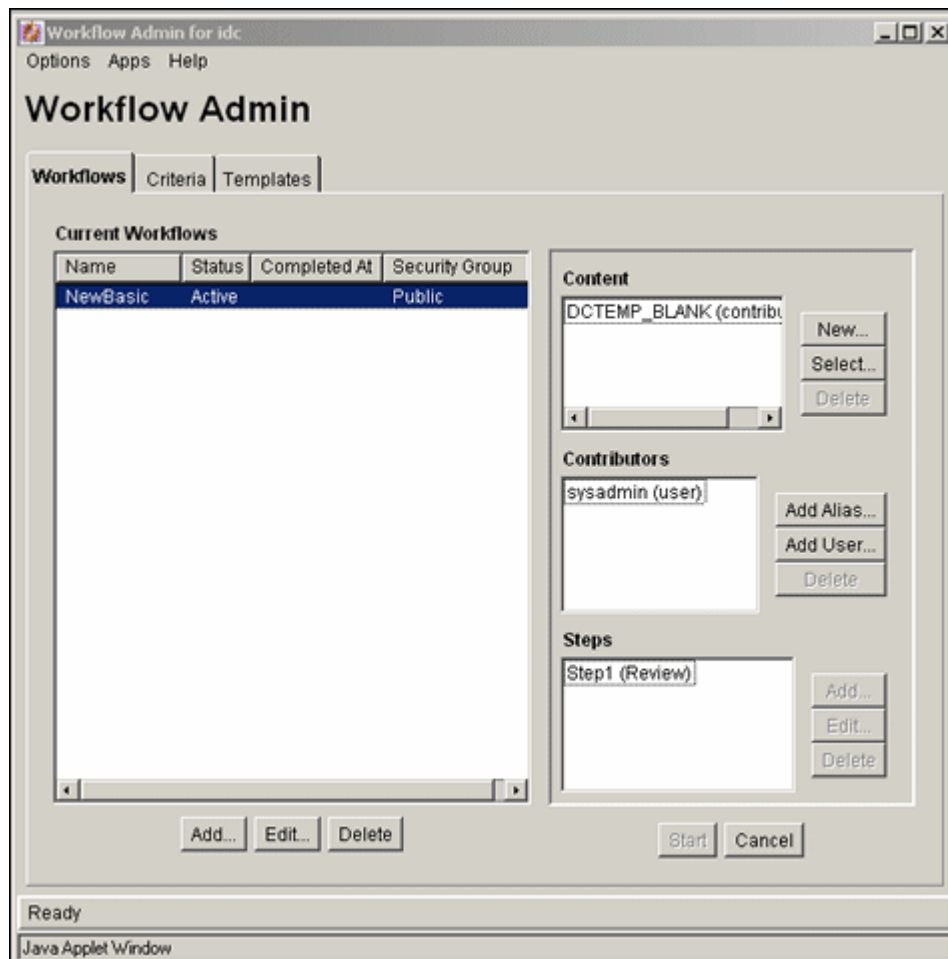
This section covers the following topics:

- ["The Workflow Admin Application"](#) on page A-88
- ["The Criteria Workflow User Interface"](#) on page A-89
- ["The Basic Workflow User Interface"](#) on page A-96
- ["Tokens User Interface"](#) on page A-105
- ["The Jump User Interface"](#) on page A-107
- ["Workflow Template Interface Screens"](#) on page A-117
- ["Workflow Scripts User Interface"](#) on page A-124

A.2.1 The Workflow Admin Application

The Workflow Admin application is an administration application used to manage workflows. To access this screen, launch the **Administration** menu and select **Admin Applets**.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.



Element	Description
Options menu	<p>Script Templates: Displays the Workflow Scripts User Interface.</p> <p>Tokens: Displays the Workflow Tokens Screen.</p> <p>Tracing: Displays the Tracing Configuration screen.</p> <p>Exit: Closes the Workflow Admin application.</p>
Apps menu	Lets you access other options from the Admin Applets menu. The other applications will open in the same mode (applet or stand-alone) as the current application.

Element	Description
Help menu	Contents: Displays the content server online help. About Content Server: Displays version, build, and copyright information for the content server.
Workflows tab	Used to add, edit, and delete Basic workflows.
Criteria tab	Used to add, edit, and delete Criteria workflows.
Templates tab	Used to add, edit, and delete workflow templates.

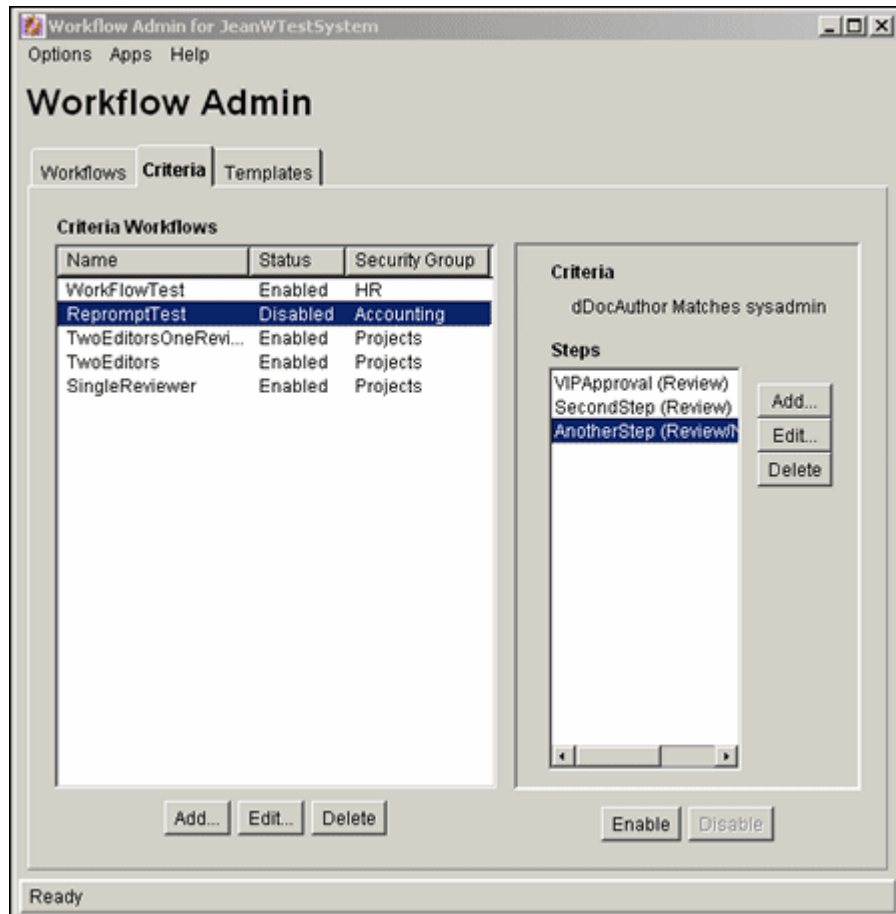
A.2.2 The Criteria Workflow User Interface

The following screens are used in the creation of criteria workflows:

- [Workflow Admin: Criteria Tab](#)
- [New/Edit Criteria Workflow Screen](#)
- [Add New/Edit Step Screen](#)
- [Add Alias to Step Screen](#)
- [Add User to Step](#)
- [Add Token to Step](#)
- [Edit Additional Exit Condition Screen](#)

A.2.2.1 Workflow Admin: Criteria Tab

The Criteria tab of the Workflow Admin application is used to add, edit, enable, disable, and delete Criteria workflows and sub-workflows.



Element	Description
Name column	Lists the workflow names.
Status column	The status of the workflow: enabled or disabled.
Security Group column	The security group that will cause the content to enter the workflow.
Add (Workflow) button	Displays the New/Edit Criteria Workflow Screen .
Edit (Workflow) button	Displays the New/Edit Criteria Workflow Screen .
Delete (Workflow) button	Enables you to delete the selected workflow.
Criteria field	Shows the criteria defined for the selected workflow.
Steps list	Lists the steps and step types included in the selected workflow.
Add (Step) button	Displays the Add New/Edit Step Screen .
Edit (Step) button	Displays the Add New/Edit Step Screen .
Delete (Step) button	Enables you to delete the selected step.
Enable button	Enables the selected workflow.
Disable button	Disables the selected workflow. If there are any content items still in the workflow process, all of the content revisions will be released to the system before the workflow is disabled.

A.2.2.2 New/Edit Criteria Workflow Screen

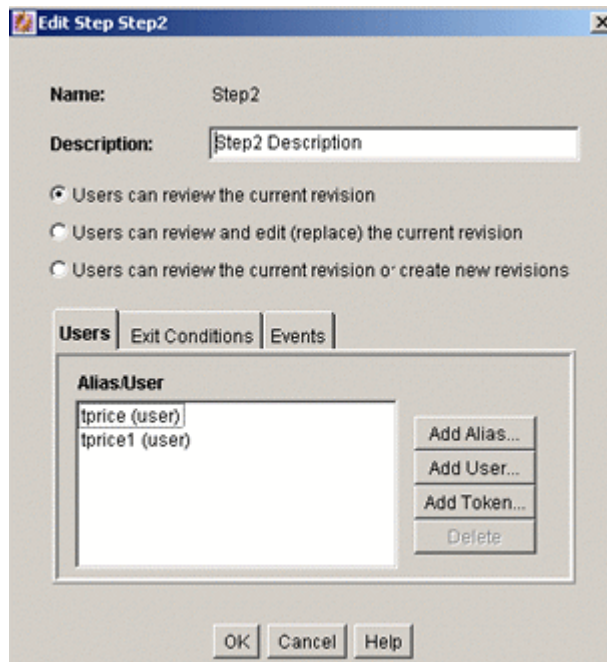
The New/Edit Criteria Workflow screen is used to add or edit a Criteria workflow or sub-workflow. To access this screen, click **Add** or **Edit** in the left pane of the [Workflow Admin: Criteria Tab](#).

Element	Description
Workflow Name field	The name for the workflow. The Workflow Name has a maximum field length of 30 characters, and the following characters should not be used: spaces, tabs, and the symbols ; ^ : @ & + " # % < > * ~
Description field	A description of the workflow.
Security Group list	Specifies the security group that the revisions must be in to enter the workflow process.
Use Template check box	Select this check box if you want to use a workflow template. This check box is displayed only if at least one workflow template exists.
Use Template list	Lists the workflow templates that have been created. This list is displayed only if at least one workflow template exists.
Original Author Edit Rule	Edit Revision: Ensures that the content item in the workflow stays at the existing revision when the original author edits it. New Revision: Permits the original author to create a new revision of the content when the author edits the content item during the workflow.
Has Criteria Definition check box	Selected: Criteria workflow Cleared: Sub-workflow
Field list	The metadata field that will be evaluated when each content item is checked in. Options are Content ID, Author, Type, Account (if accounts are enabled), and any custom metadata fields that you have created.
Operator field	Defaults to <i>matches</i> .

Element	Description
Value field	<p>The value for the specified metadata field.</p> <ul style="list-style-type: none"> Depending on the option selected in the Field list, this field can be a text entry field, text entry field with Select button, or list of the available options. The following wildcards can be used in this field: <ul style="list-style-type: none"> * = one or more characters; ? = single character
Select button	Displays a list of existing items (such as content items or users), from which you can select a value for the Value field. This button appears only when certain metadata fields are selected.

A.2.2.3 Add New/Edit Step Screen

The Add New/Edit Step screen is used to add or edit a Criteria workflow step. To access this screen, select a workflow in the left pane and click **Add** or **Edit** in the right pane of the [Workflow Admin: Criteria Tab](#).



Element	Description
Name field	The name for the step. Typically this is the type of review (such as <i>initial review</i> or <i>copy edit</i>) or the function of the reviewer (such as <i>manager</i> or <i>copy editor</i>).
Description field	A description for the step.
Users can review the current revision	Users can approve or reject the revision.
Users can review and edit (replace) the current revision	Users can edit the revision, approve it, or reject it. Any edit will not update the revision of the content item.
Users can review the current revision or create new revisions.	Users can edit the revision, approve it, or reject it. Any edit updates the revision of the content item.

Users Tab Fields

Element	Description
Alias/User list	Lists the users, aliases, and tokens currently assigned to the step.
Add Aliases button	Displays the Add Alias to Step Screen .
Add User button	Displays the Add User to Step .
Add Token button	Displays the Add Token to Step .
Delete button	Enables you to delete the selected step from the workflow.

Exit Conditions Tab Fields

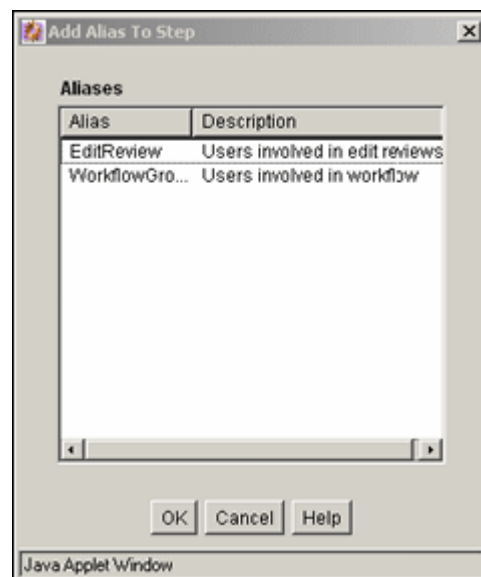
Element	Description
All reviewers option	If this is selected, all users assigned to the step must approve the revision before the workflow passes to the next step.
At least this many reviewers option and field	If this is selected, the workflow passes to the next step as soon as the specified number of users have approved the revision.
Use Additional Exit Condition check box	If this is selected, the conditions defined in the text box must be met before the workflow passes to the next step.
Edit button	Displays the Edit Additional Exit Condition Screen .
Clear button	Clears the Exit Condition text box.

Events Tab Fields

See "[Add New/Edit Step Screen: Events Tab](#)" on page A-107

A.2.2.4 Add Alias to Step Screen

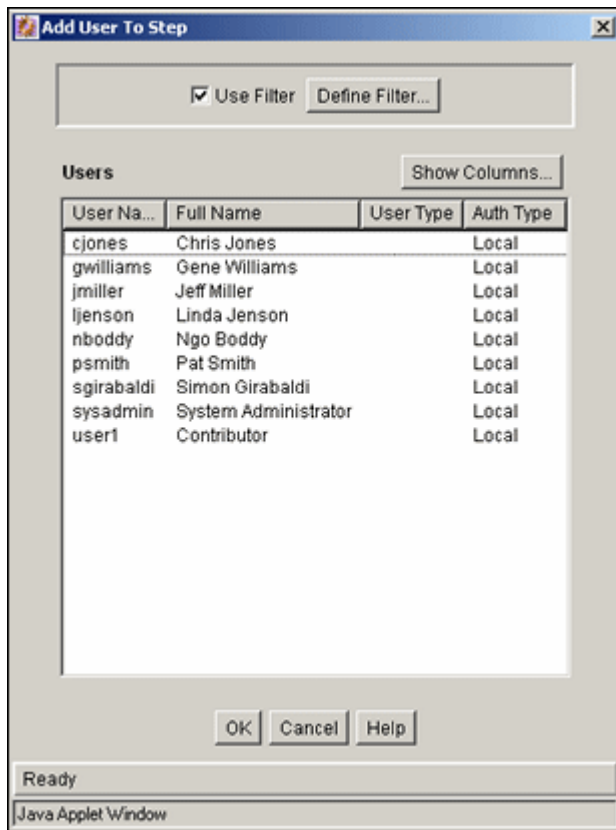
The Add Alias to Step screen is used to assign aliases to a Criteria workflow step. To access this screen, click **Add Alias** on the Users tab of the [Add New/Edit Step Screen](#).



Element	Description
Alias column	Lists the available aliases.
Description column	A description of the alias.

A.2.2.5 Add User to Step

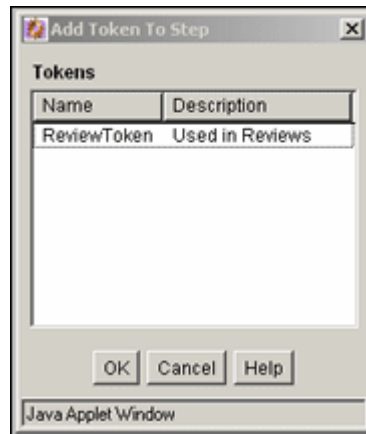
The Add User to Step screen is used to assign users to a Criteria workflow step. To access this screen, click **Add User** on the Users tab of the [Add New/Edit Step Screen](#).



Element	Description
Use Filter check box	Select this check box to narrow the Users list as defined by the Define Filter Screen (described in the <i>Oracle Fusion Middleware Application Administrator's Guide for Content Server</i>).
Define Filter button	Displays the Define Filter Screen (described in the <i>Oracle Fusion Middleware Application Administrator's Guide for Content Server</i>).
Show Columns button	Displays the Show Columns Screen.
Users list	Shows the users that match the filter settings.

A.2.2.6 Add Token to Step

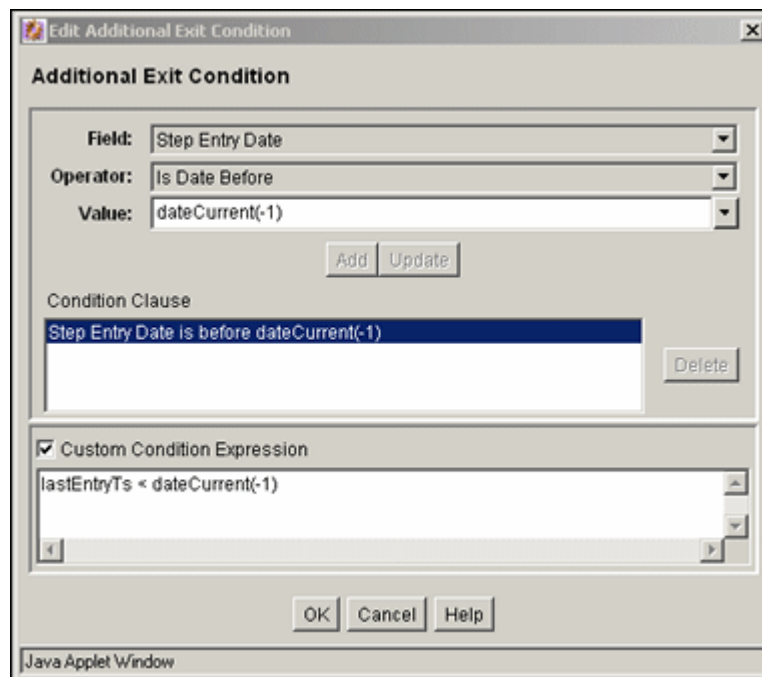
The Add Token to Step screen is used to assign workflow tokens to a Criteria workflow step. To access this screen, click **Add Token** on the Users tab of the [Add New/Edit Step Screen](#). This screen is only accessible if tokens have already been added to the system.



Element	Description
Name column	Lists the available tokens.
Description column	A description of the token.

A.2.2.7 Edit Additional Exit Condition Screen

The Edit Additional Exit Condition screen is used to define exit conditions for a Criteria workflow step. To access this screen, click **Edit** on the Exit Conditions tab of the [Add New/Edit Step Screen](#).



Element	Description
Field list	Select the workflow condition or metadata field to be evaluated.
Operator list	Select an operator. This is a dependent option list that shows only the operators associated with the Field option.

Element	Description
Value field	<p>The value for the specified metadata field.</p> <ul style="list-style-type: none"> Depending on the option selected in the Field list, this field can be a text entry field, text entry field with Select button, or list of the available options. The following wildcards can be used in this field: <ul style="list-style-type: none"> * = one or more characters; ? = single character
Select button	Displays a list of existing items (such as content items or users), from which you can select a value for the Value field. This button appears only when certain fields are selected.
Add button	Adds the conditional statement defined by the Field, Operator, and Value fields to the exit condition clause.
Update button	Changes the selected conditional statement to the statement defined by the Field, Operator, and Value fields.
Condition Clause box	Lists the conditional statements that have been added to the exit condition. Multiple clauses can be appended as <i>AND</i> statements.
Delete button	Deletes the selected conditional statement.
Custom Condition Expression check box and field	<p>Enables display and edit of the Idoc Script generated from the condition clauses.</p> <ul style="list-style-type: none"> The additional exit conditions must be Idoc Script statements that evaluate to true or false. Do not enclose the code in Idoc Script tags <\$ \$>. <p>Caution: If you clear the Custom Condition Expression check box, the expression reverts to its original definition; all modifications will be lost.</p>

A.2.3 The Basic Workflow User Interface

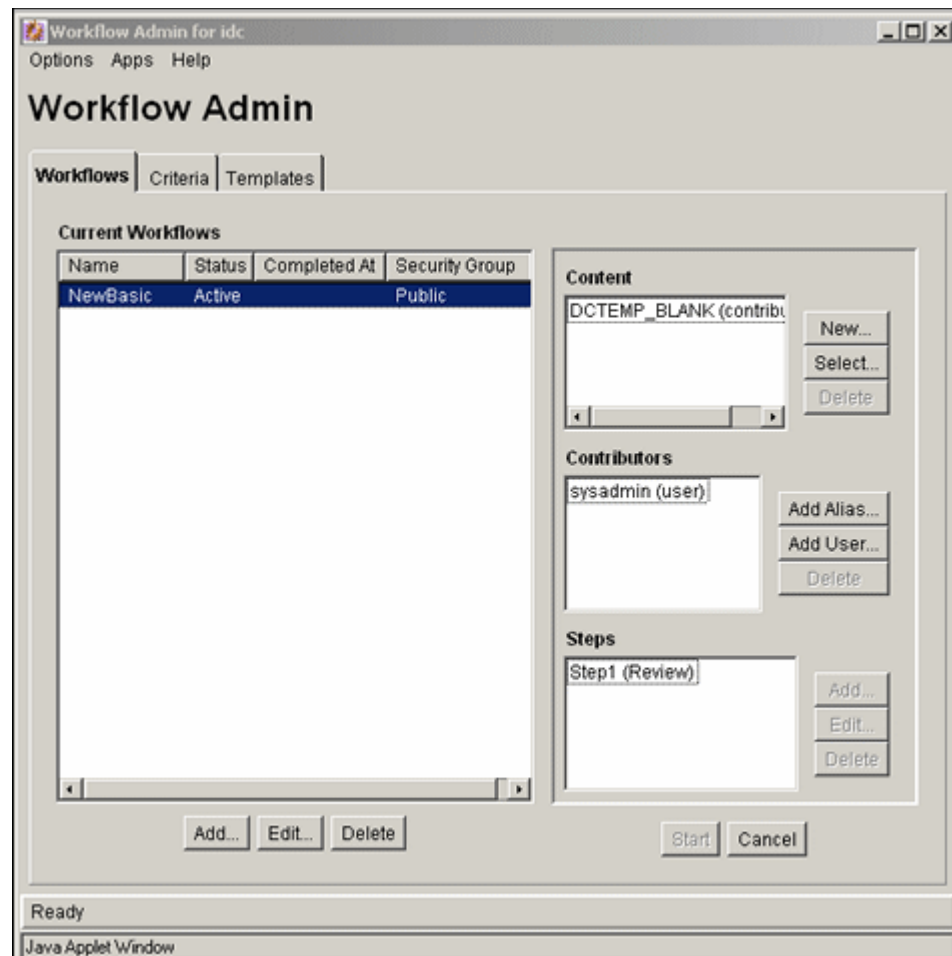
The following screens are used in the creation of Basic workflows:

- [Workflow Admin: Workflows Tab](#)
- [Add New/Edit Workflow Screen](#)
- [Add Content to Workflow \(New Content\) Screen](#)
- [Add Content to Workflow \(Existing Content\) Screen](#)
- [Add Alias to Workflow Screen](#)
- [Add New/Edit Step Screen](#)
- [Add Alias to Step Screen](#)
- [Add User: Basic Workflow](#)
- [Add Token: Basic Workflow](#)
- [Edit Additional Exit Condition Screen](#)
- [Start Workflow Screen](#)

Many of the screens used in the creation of the Criteria workflow are the same screens used in Basic workflows. They are repeated here for completeness.

A.2.3.1 Workflow Admin: Workflows Tab

The Workflows tab of the Workflow Admin application is used to add, edit, start, cancel, and delete Basic workflows. To access this tab, click the Workflows tab on the [The Workflow Admin Application](#).

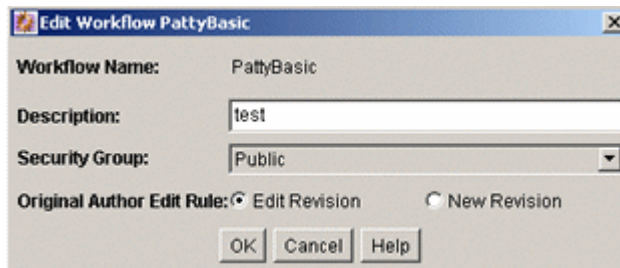


Element	Description
Name column	Lists the workflow names.
Status column	The status of the workflow: active or inactive.
Completed At column	Date and time the content in a finished workflow was released to the system.
Security Group column	The security group assigned to the workflow. This security group will be assigned to all new content in the workflow.
Add (Workflow) button	Displays the Add New/Edit Workflow Screen .
Edit (Workflow) button	Displays the Add New/Edit Workflow Screen .
Delete (Workflow) button	Enables you to delete the selected workflow.
Content list	Lists the content items included in the selected workflow.
New button	Displays the Add Content to Workflow (New Content) Screen .

Element	Description
Select button	Displays the Add Content to Workflow (Existing Content) Screen .
Delete (Content) button	Enables you to delete the selected content item.
Contributors list	Lists the users, aliases, and tokens assigned to the initial contribution step of the selected workflow.
Add Alias button	Displays the Add Alias to Workflow Screen .
Add User button	Displays the Add User: Basic Workflow .
Delete (Contributor) button	Enables you to delete the selected user from the initial contribution step.
Steps list	Lists the steps and step types included in the selected workflow.
Add (Step) button	Displays the Add New/Edit Step Screen .
Edit (Step) button	Displays the Add New/Edit Step Screen .
Delete (Step) button	Enables you to delete the selected step.
Start button	Displays the Start Workflow Screen .
Cancel button	Cancels the selected workflow. If there are any content items still in the workflow process, any revisions in the workflow are deleted from the system. Any edits that have been made to the content items will be lost unless they have also been saved on a local hard drive.

A.2.3.2 Add New/Edit Workflow Screen

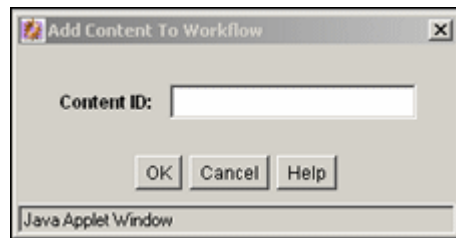
The Add New/Edit Workflow screen is used to add or edit a Basic workflow. To access this screen, click **Add** or **Edit** in the left pane of the [Workflow Admin: Workflows Tab](#).



Element	Description
Workflow Name field	The name for the workflow. Workflow Name has a maximum field length of 30 characters. The following characters are NOT acceptable: spaces, tabs, and the symbols ; ^ : @ & + " # % < > * ~
Description field	A description of the workflow.
Security Group list	Specifies the security group for the content items.
Original Author Edit Rule	Identifies whether to permit the original author to create a new revision of the content when the author edits the content item.
Use Template check box and field	Select this check box and a template name if you want to use a workflow template. This box is displayed only if a template exists.

A.2.3.3 Add Content to Workflow (New Content) Screen

The Add Content to Workflow (New Content) screen is used to specify a new content item for a Basic workflow. To access this screen, select a workflow in the left pane and click **New** in the Content pane of the [Workflow Admin: Workflows Tab](#).



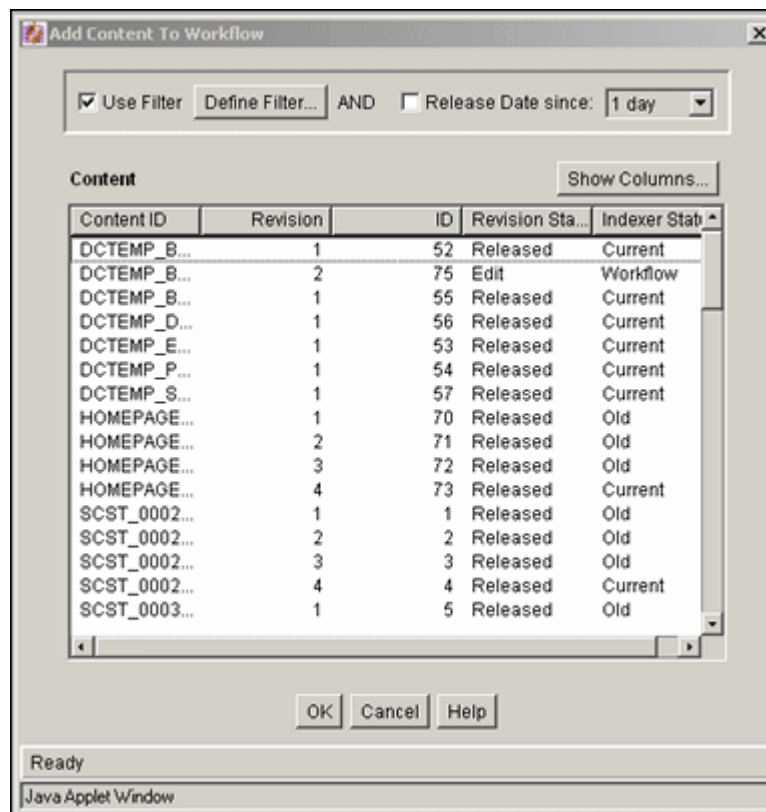
Element	Description
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Content ID field	The name or the ID of the content to add to the workflow. Content ID has a maximum field length of 30 characters, and the following should not be used: spaces, tabs, and the symbols ; ^ : @ & + " # % < > * ~
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If you are using an Oracle database, all Content IDs will be converted to uppercase letters automatically.

A.2.3.4 Add Content to Workflow (Existing Content) Screen

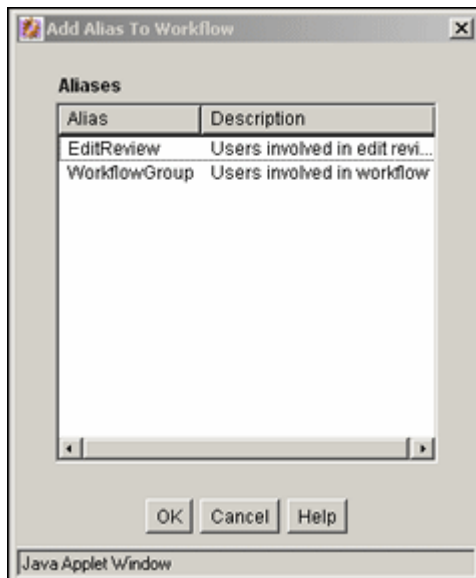
The Add Content to Workflow (Existing Content) screen is used to add existing content items to a Basic workflow. To access this screen, select a workflow in the left pane and click **Select** in the Content pane of the [Workflow Admin: Workflows Tab](#).



Element	Description
Use Filter check box	Select this check box to narrow the content list as defined by the Define Filter screen.
Define Filter button	Displays the Define Filter screen.
Release Date since check box and list	Select this check box to narrow the content list as defined by the Release Date option list.
Show Columns button	Displays the Show Columns screen, used to select the columns to display.
Content list	Shows the revisions in the content server repository that match the filter settings. Double-clicking a revision displays the Info screen for that revision.

A.2.3.5 Add Alias to Workflow Screen

The Add Alias to Workflow screen is used to assign aliases to the initial contribution step of a Basic workflow. To access this screen, select a workflow in the left pane and click **Add Alias** in the Contributors pane of the [Workflow Admin: Workflows Tab](#).



Element	Description
Alias column	Lists the available aliases.
Description column	A description of the alias.

A.2.3.6 Add New/Edit Step Screen

The Add New/Edit Step screen is used to add or edit a Basic workflow review step. To access this screen, select a workflow in the left pane and click **Add** or **Edit** in the Steps pane of the [Workflow Admin: Workflows Tab](#).

Element	Description
Name field	The name for the step. Typically this is the type of review (such as <i>initial review</i> or <i>copy edit</i>) or the function of the reviewer (such as <i>manager</i> or <i>copy editor</i>).
Description field	A description for the step.
Users can review the current revision	Users can approve or reject the revision.
Users can review and edit (replace) the current revision	Users can edit the revision, approve it, or reject it. Any edit will not update the revision of the content item.
Users can review the current revision or create new revisions.	Users can edit the revision, approve it, or reject it. Any edit updates the revision of the content item.

Users Tab Fields

Element	Description
Alias/User list	Lists the users, aliases, and tokens currently assigned to the step.
Add Aliases button	Displays the Add Alias to Step Screen .
Add User button	Displays the Add User: Basic Workflow screen.
Add Token button	Displays the Add Token: Basic Workflow screen.
Delete button	Enables you to delete the selected step from the workflow.

Exit Conditions Tab Fields

Element	Description
All reviewers option	If this is selected, all users assigned to the step must approve the revision before the workflow passes to the next step.

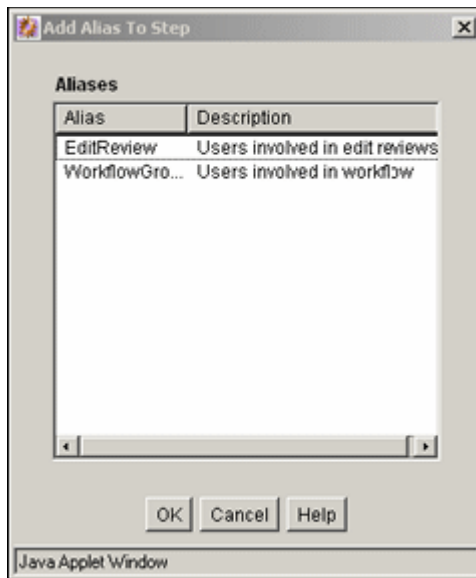
Element	Description
At least this many reviewers option and field	If this is selected, the workflow passes to the next step as soon as the specified number of users have approved the revision.
Use Additional Exit Condition check box and field	If this is selected, the conditions defined in the text box must be met before the workflow passes to the next step.
Edit button	Displays the Edit Additional Exit Condition Screen .
Clear button	Clears the Exit Condition text box.

Events Tab Fields

See "[Add New/Edit Step Screen: Events Tab](#)" on page A-107.

A.2.3.7 Add Alias to Step Screen

The Add Alias to Step screen is used to assign aliases to a Basic workflow review step. To access this screen, click **Add Alias** on the [Add New/Edit Step Screen](#).



Element	Description
Alias column	Lists the available aliases.
Description column	A description of the alias.

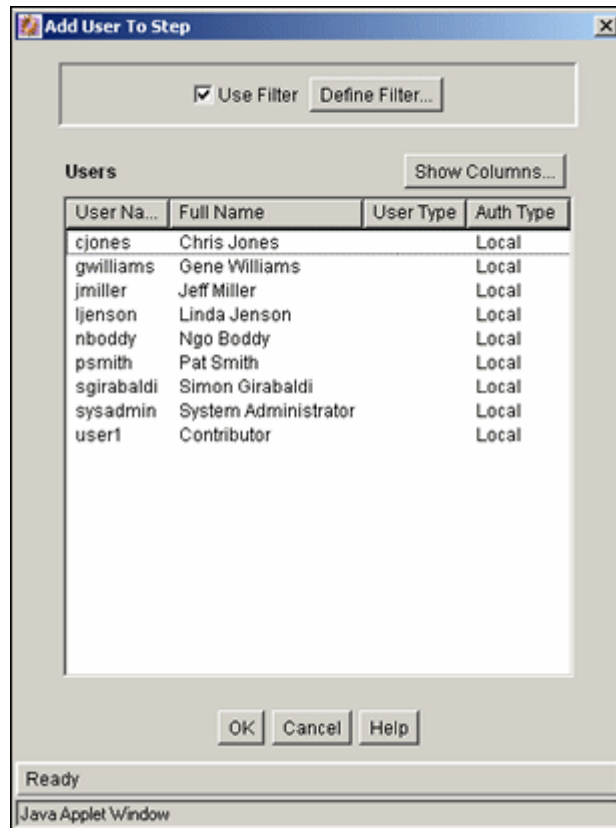
A.2.3.8 Add User: Basic Workflow

The Add User to Step screen is used to assign users to a Basic workflow step. To access this screen, do one of the following:

- For the contribution step, select a workflow in the left pane and click **Add User** in the Contributors pane of the [Workflow Admin: Workflows Tab](#).
- For a review step, click **Add User** on the [Add New/Edit Step Screen](#).

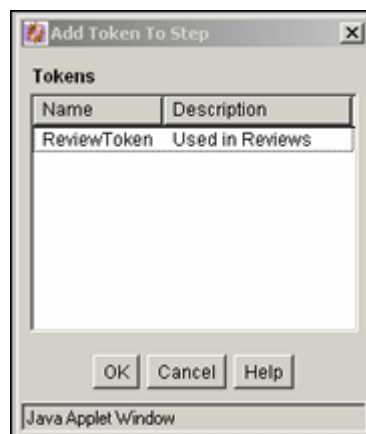
Element	Description
Use Filter check box	Select this check box to narrow the Users list as defined by the Define Filter Screen.

Element	Description
Define Filter button	Displays the Define Filter Screen.
Show Columns button	Displays the Show Columns Screen.
Users list	Shows the users that match the filter settings.



A.2.3.9 Add Token: Basic Workflow

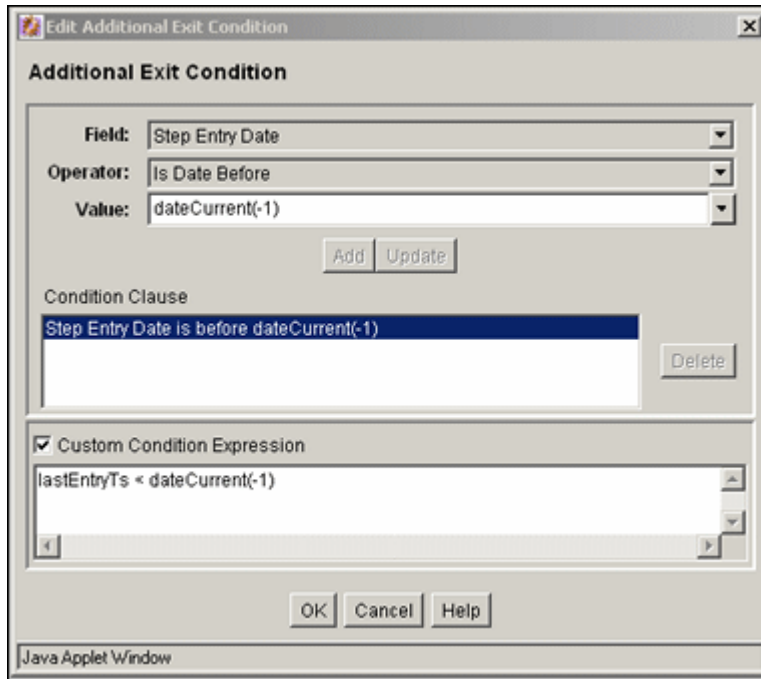
The Add Token to Step screen is used to assign a workflow token to a Basic workflow review step. To access this screen, click **Add Token** on the [Add New/Edit Step Screen](#).



Element	Description
Name column	Lists the available tokens.
Description column	A description of the token.

A.2.3.10 Edit Additional Exit Condition Screen

The Edit Additional Exit Condition screen is used to define exit conditions for a Basic workflow review step. To access this screen, click **Edit** in the Exit Conditions tab of the [Add New/Edit Step Screen](#).

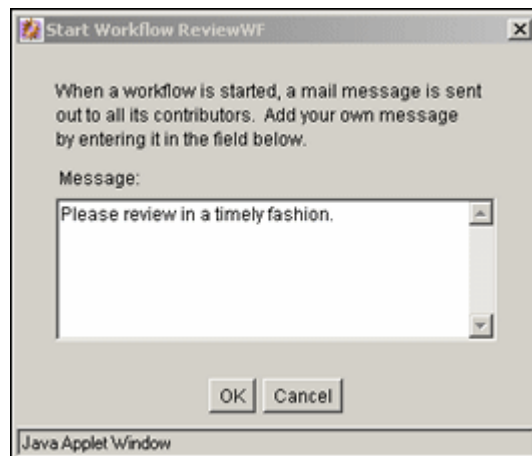


Element	Description
Field list	Select the workflow condition or metadata field to be evaluated.
Operator list	Select an operator. This is a dependent option list that shows only the operators associated with the Field option.
Value list	The value for the specified metadata field. <ul style="list-style-type: none"> ■ Depending on the option selected in the Field list, this field can be a text entry field, text entry field with Select button, or list of the available options. ■ The following wildcards can be used in this field: <ul style="list-style-type: none"> * = one or more characters; ? = single character
Select button	Displays a list of existing items (such as content items or users), from which you can select a value for the Value field. This button appears only when certain metadata fields are selected.
Add	Adds the conditional statement defined by the Field, Operator, and Value fields to the exit condition clause.
Update	Changes the selected conditional statement to the statement defined by the Field, Operator, and Value fields.

Element	Description
Condition Clause	Lists the conditional statements that have been added to the exit condition. Multiple clauses can be appended as <i>AND</i> statements.
Delete	Deletes the selected conditional statement.
Custom Condition Expression	<p>Enables display and edit of the Idoc Script generated from the condition clauses.</p> <ul style="list-style-type: none"> ■ The additional exit conditions must be Idoc Script statements that evaluate to true or false. ■ Do not enclose the code in Idoc Script tags <\$ \$>. <p>If you clear the Custom Condition Expression check box, the expression reverts to its original definition; all modifications are lost.</p>

A.2.3.11 Start Workflow Screen

The Start Workflow screen is used to start a Basic workflow and add to the e-mail message that is sent to initial contributors. To access this screen, select a workflow in the left pane and click **Start** on the [Workflow Admin: Workflows Tab](#).



Element	Description
Message field	Enter a message for the workflow contributors.

A.2.4 Tokens User Interface

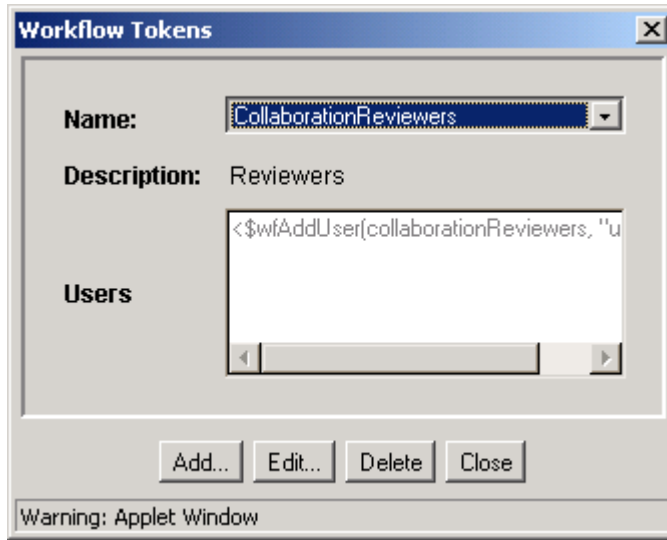
The following screens are all used in the creation and editing of tokens:

- [Workflow Tokens Screen](#)
- [Add/Edit Token Screen](#)
- [Add Token User Screen](#)

A.2.4.1 Workflow Tokens Screen

The Workflow Tokens screen is used to add, edit, and delete workflow tokens. To access this screen, select **Tokens** from the **Options** menu in [Workflow Admin: Workflows Tab](#).

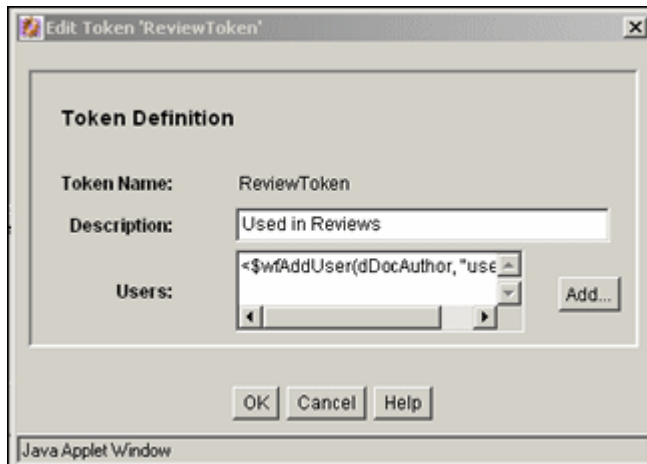
The predefined tokens in the Name list are associated with the sample workflow template that is included with the Workflow Admin application. You can use these tokens as is, or you can use them as templates to customize your own tokens.



Element	Description
Name list	Lists the token names.
Description field	A description of the selected token.
Users box	Shows the Idoc Script code that defines the token.
Add button	Displays the Add/Edit Token Screen .
Edit button	Displays the Add/Edit Token Screen .
Delete button	Enables you to delete the selected token.
Close button	Closes the Workflow Tokens screen.

A.2.4.2 Add/Edit Token Screen

The Add/Edit Token screen is used to add or edit a workflow token. To access this screen, click **Add** or **Edit** on the [Workflow Tokens Screen](#).



Element	Description
Token Name field	The name of the workflow token.
Description field	A description of the token.
Users box	The Idoc Script code that defines the token.
Add button	Displays the Add Token User Screen .

A.2.4.3 Add Token User Screen

The Add Token User screen is used to add a user or alias to a workflow token. To access this screen, click **Add** on the [Add/Edit Token Screen](#).



Element	Description
Type options	User: An individual user login. Alias: A group of users defined by an alias.
Name field	Enter the metadata field that corresponds to a user or alias. Original author (User): Type <i>dDocAuthor</i> . Alias: Type the alias name exactly.

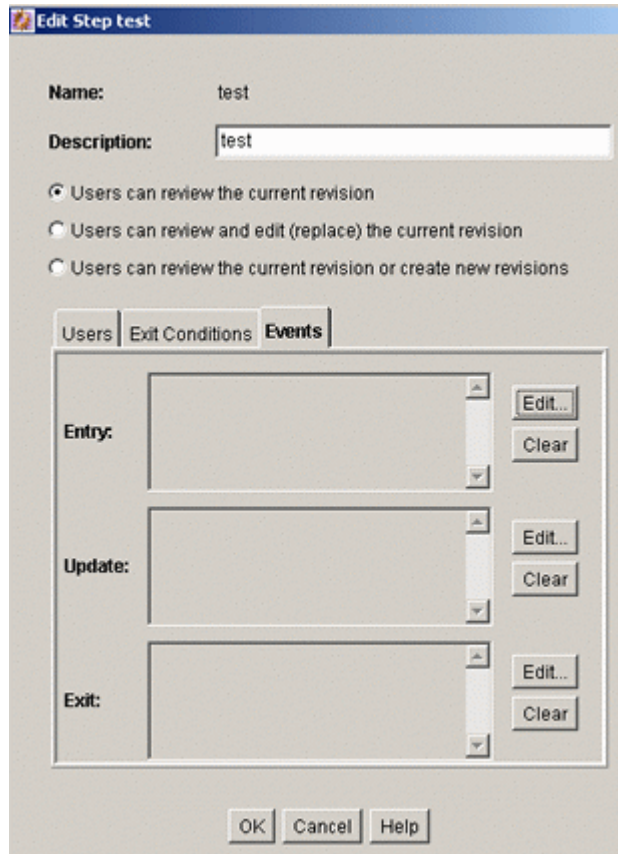
A.2.5 The Jump User Interface

The following screens are used to create jumps:

- [Add New/Edit Step Screen: Events Tab](#)
- [Edit Script for StepName Screen](#)
- [Script Properties Screen](#)
- [Select Target Step Screen](#)
- [Add/Edit Jump Screen Tabs](#)
- [Content Item View Screen](#)

A.2.5.1 Add New/Edit Step Screen: Events Tab

The Events tab of the Add New/Edit Step screen is used to add or edit step event scripts. To access this tab, click the Events tab on the [Add New/Edit Step Screen](#) for a Criteria workflow or the [Add New/Edit Step Screen](#) for a Basic workflow.

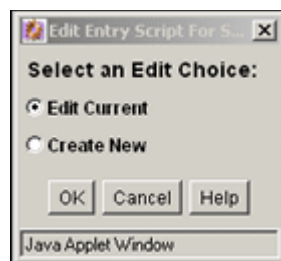


Element	Description
Name field	The name for the step. Typically this is the type of review (such as <i>initial review</i> or <i>copy edit</i>) or the function of the reviewer (such as <i>manager</i> or <i>copy editor</i>).
Description field	A description for the step.
Users can review the current revision	Users can approve or reject the revision.
Users can review and edit (replace) the current revision	Users can edit the revision, approve it, or reject it. Any edit will not update the revision of the content item.
Users can review the current revision or create new revisions.	Users can edit the revision, approve it, or reject it. Any edit updates the revision of the content item.
Entry field	Displays the script that will be evaluated when the step is entered.
Edit (Entry) button	<ul style="list-style-type: none"> ■ If an entry event script or script template exists, the Edit Script for StepName Screen is displayed. ■ If no entry event script or script template exists, the Script Properties Screen is displayed.
Clear (Entry) button	Deletes the script from the Entry field.

Element	Description
Update field	Displays the script that will be evaluated when any of the following events occurs: <ul style="list-style-type: none"> Hourly workflow update cycle Update of the revision's metadata Any approval of the revision Any checkin of the revision
Edit (Update) button	<ul style="list-style-type: none"> If an update event script or script template exists, the Edit Script for StepName Screen is displayed. If no update event script or script template exists, the Script Properties Screen is displayed.
Clear (Update) button	Deletes the script from the Update field.
Exit field	Displays the script that will be evaluated when the revision has completed the requirements of the workflow step.
Edit (Exit) button	<ul style="list-style-type: none"> If an exit event script or script template exists, the Edit Script for StepName Screen is displayed. If no exit event script or script template exists, the Script Properties Screen is displayed.
Clear (Exit) button	Deletes the script from the Exit field.

A.2.5.2 Edit Script for *StepName* Screen

The Edit Script for *StepName* screen is used to select an editing option for a step event script. To access this screen, click **Edit** for the desired event on the [Add New/Edit Step Screen: Events Tab](#).



Element	Description
Edit Current option	Displays the Jump Tab with the current script. This option is displayed only if a script already exists for the event.
Create New option	Displays a blank Jumps Tab.
Use Script Template option and list	Displays the Jumps Tab with the selected script template. This option is displayed only if a script template exists.

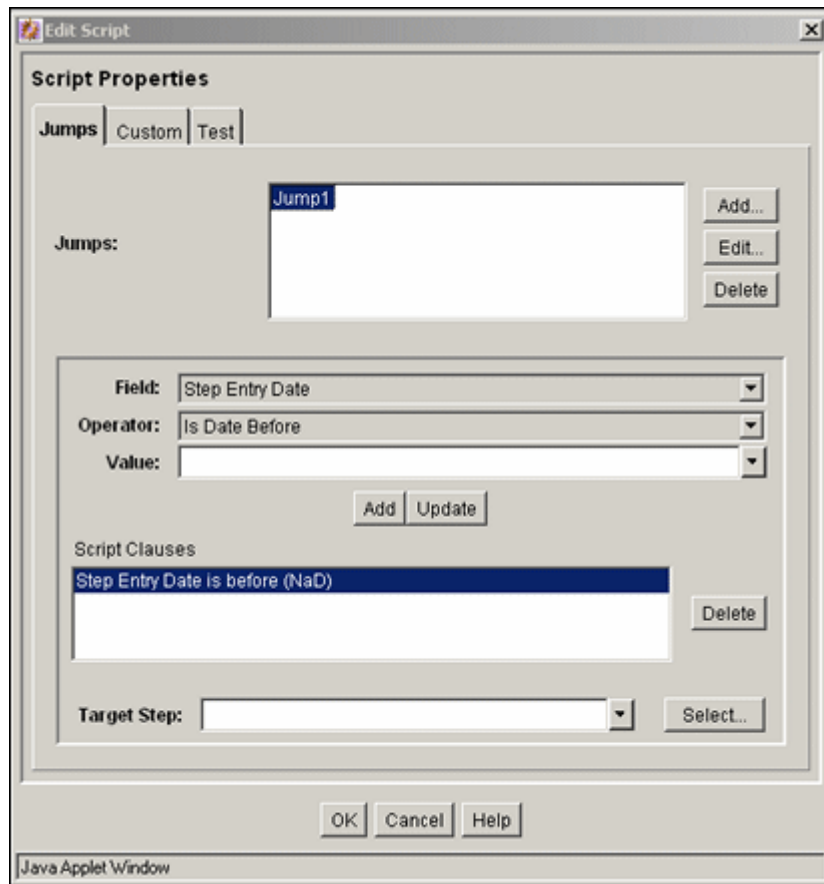
A.2.5.3 Script Properties Screen

The Edit Script Properties screen is used to create, modify, and test step event scripts. To access this screen, do one of the following:

- If an event script or script template does not exist, click **Edit** on the [Add New/Edit Step Screen: Events Tab](#).

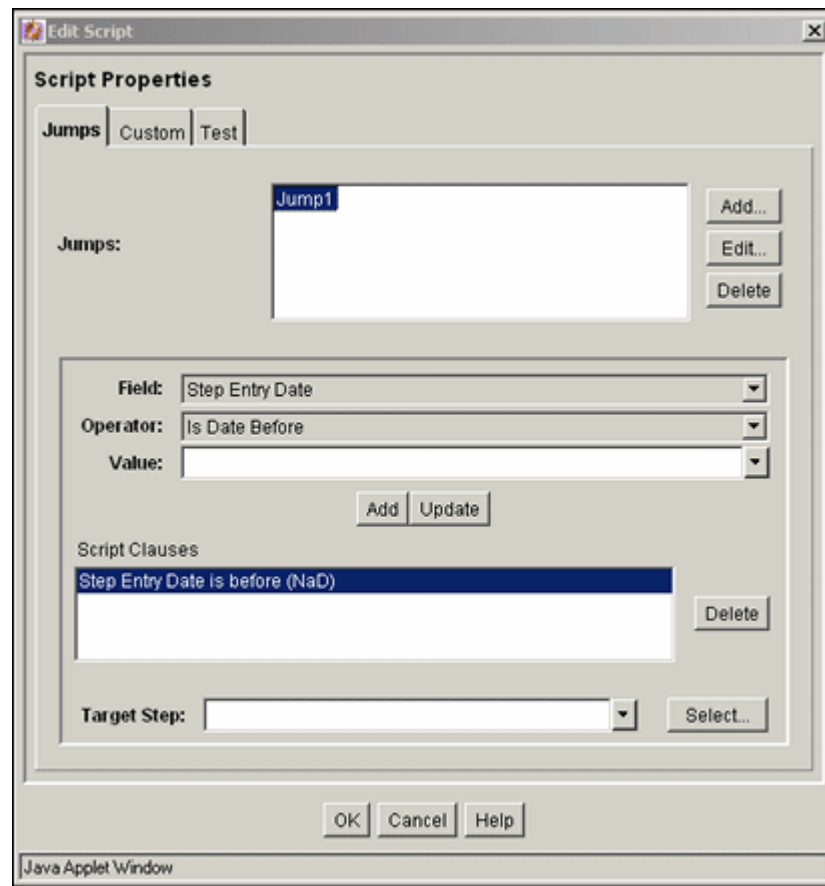
- If an event script or script template exists, click **OK** on the [Edit Script for StepName Screen](#).

Element	Description
Jumps tab	Used to create the step event script.
Custom tab	Used to view and customize the step event script.
Test tab	Used to test the step event script.



Script Properties: Jumps Tab

The Jumps tab of the Edit Script screen is used to create step event script code. To access this tab, click the tab on the [Script Properties Screen](#).

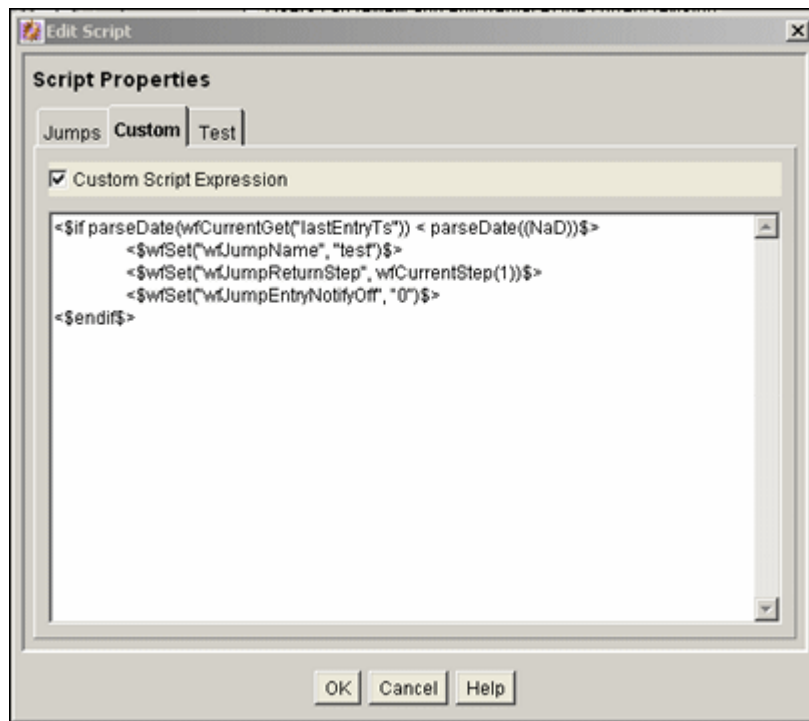


Element	Description
Jumps list	Lists the jumps that are included in the script.
Add or Edit (Jumps) button	Displays the Side Effects Tab.
Delete (Jumps) button	Enables you to delete the selected jump.
Field list	Select the workflow condition or metadata field to be evaluated.
Operator list	Select an operator. This is a dependent option list that shows only the operators associated with the Field option.
Value list	The value for the specified metadata field. <ul style="list-style-type: none"> Depending on the option selected in the Field list, this field can be a text entry field, text entry field with Select button, or list of the available options. The following wildcards can be used in this field: * = one or more characters; ? = single character
Select button	Displays a list of existing items (such as content items or users), from which you can select a value for the Value field. This button appears only when certain metadata fields are selected.
Add (Script Clauses) button	Adds the conditional statement defined by the Field, Operator, and Value fields to the selected jump.
Update button	Changes the selected conditional statement to the statement defined by the Field, Operator, and Value fields.

Element	Description
Script Clauses list	Lists the conditional statements that have been added to the jump. Multiple clauses can be appended as <i>AND</i> statements.
Delete (Script Clauses) button	Deletes the selected conditional statement.
Target Step list	Specifies a target step for the jump. <ul style="list-style-type: none"> ■ Select a value from the option list to specify a symbolic step name. ■ Click Select to display the Select Target Step Screen.

Script Properties: Custom Tab

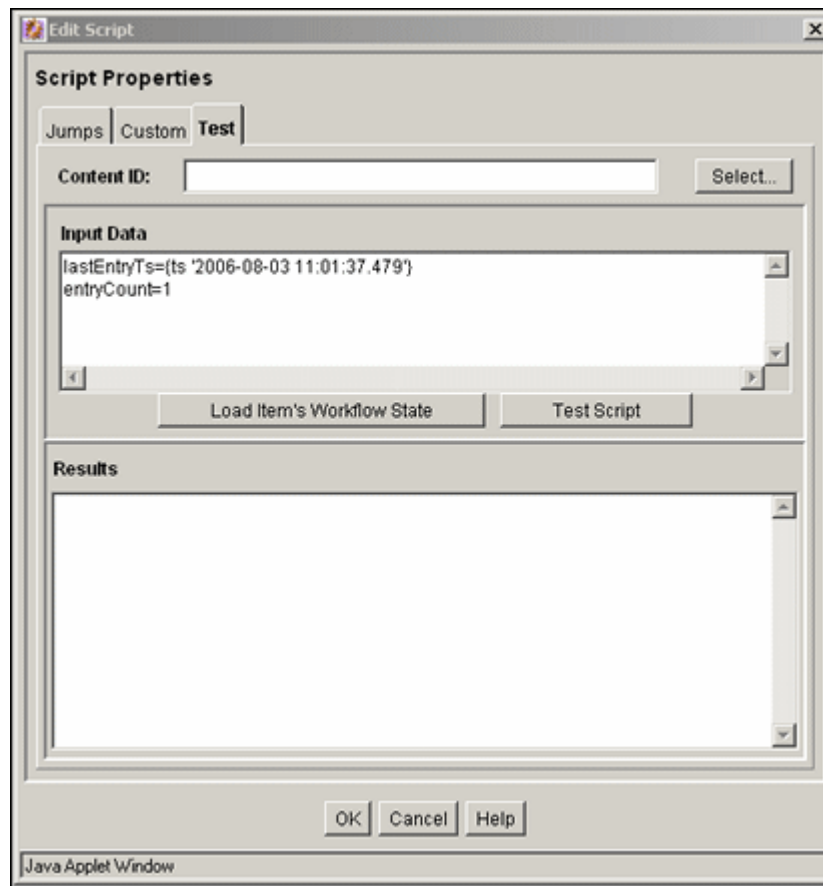
The Custom tab of the Edit Script screen is used to edit the script that was generated automatically by the options on the Jumps tab. To access this tab, click the tab on the [Script Properties Screen](#).



Element	Description
Custom Script Expression check box	<p>Selected: The script can be edited, and the revised script will be saved. The jumps cannot be edited from the Jumps tab.</p> <p>Cleared: The script reflects the statements as defined on the Jumps tab.</p> <p>If you clear the Custom Script Expression check box, the expression reverts to its original definition; all modifications will be lost.</p>
Script field	Shows the script of all jumps in the script template.

Script Properties: Test Tab

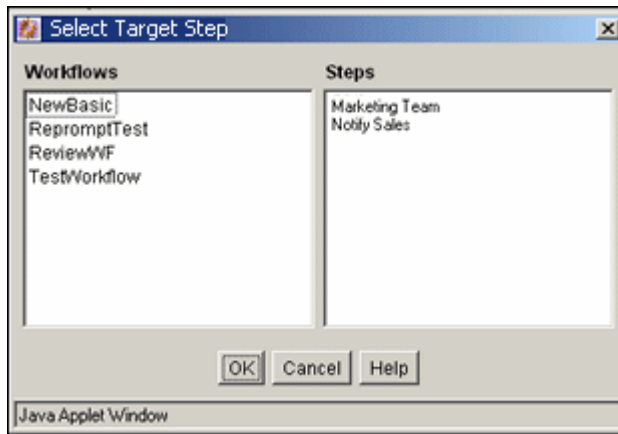
The Test tab of the Edit Script screen is used to test a step event script. To access this tab, click the tab on the [Script Properties Screen](#).



Element	Description
Content ID field	Enter the Content ID for a content item to be tested.
Select button	Displays the Content Item View Screen .
Input Data field	When the screen is first displayed, this field shows the default state. When a workflow is selected and when the content items's workflow state is loaded, this field shows the data that will be tested.
Load Item's Workflow State button	Loads the companion file for the selected content item. If the selected content item is not in a workflow, the content item is treated like it newly entered the workflow.
Test Script button	Tests the script and displays the results in the Results pane.
Results field	Displays the results of the script test. Idoc script error messages will be displayed if there are processing errors.

A.2.5.4 Select Target Step Screen

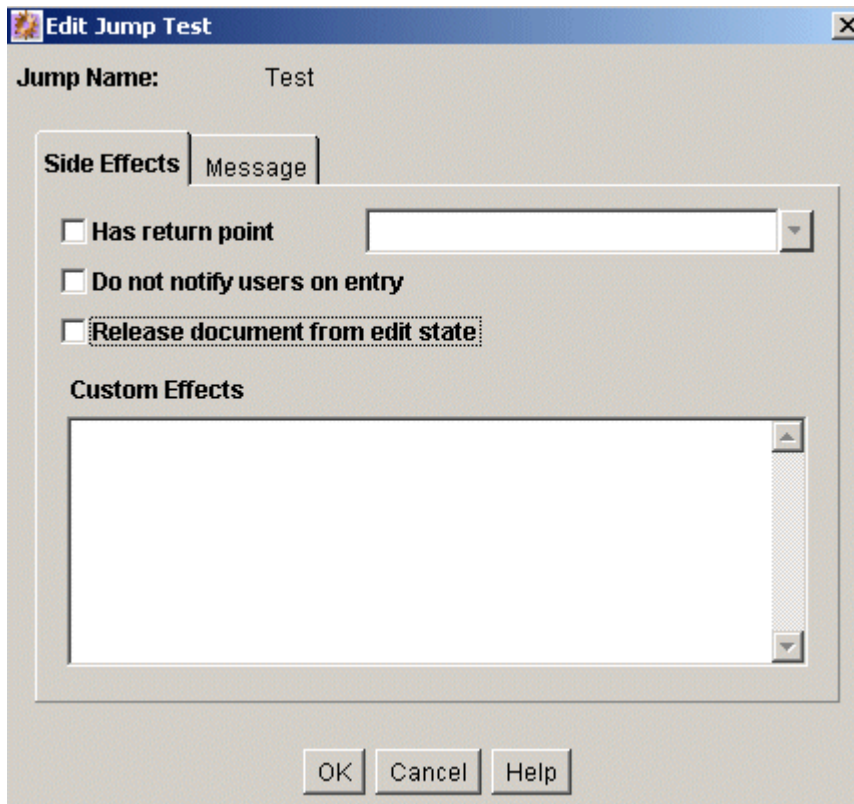
The Select Target Step screen is used to add a specific target step to a jump. To access this screen, click **Select** on the [Script Properties Screen](#), Jump Tab.



Element	Description
Workflows list	Select a workflow to display the workflow steps in the Steps field.
Steps list	Select a step to use as the target step.

A.2.5.5 Add/Edit Jump Screen Tabs

The Add/Edit Jump screen is used to add or edit jump side effects and notification messages. To access this screen, click **Add** or **Edit** in the Jumps pane of the [Script Properties Screen](#), Jump Tab.



Element	Description
Side Effects tab	Used to specify the jump name, return point, custom side effects, and to enable notification for the jump.
Message tab	Used to enter a notification message for the jump.

Add/Edit Jump Screen: Side Effects Tab

The Side Effects tab of the Add/Edit Jump screen is used to add or edit jump side effects. To access this tab, click the tab on the [Script Properties Screen](#), Jump Tab.

The screenshot shows a dialog box titled "Edit Jump Test" with a close button (X) in the top right corner. The "Jump Name:" field contains the text "Test". Below this are two tabs: "Side Effects" (which is selected) and "Message". Under the "Side Effects" tab, there are three checkboxes:

- Has return point: To the right of this checkbox is a dropdown menu.
- Do not notify users on entry
- Release document from edit state

 Below the checkboxes is a section labeled "Custom Effects" with a large, empty text area. At the bottom of the dialog are three buttons: "OK", "Cancel", and "Help".

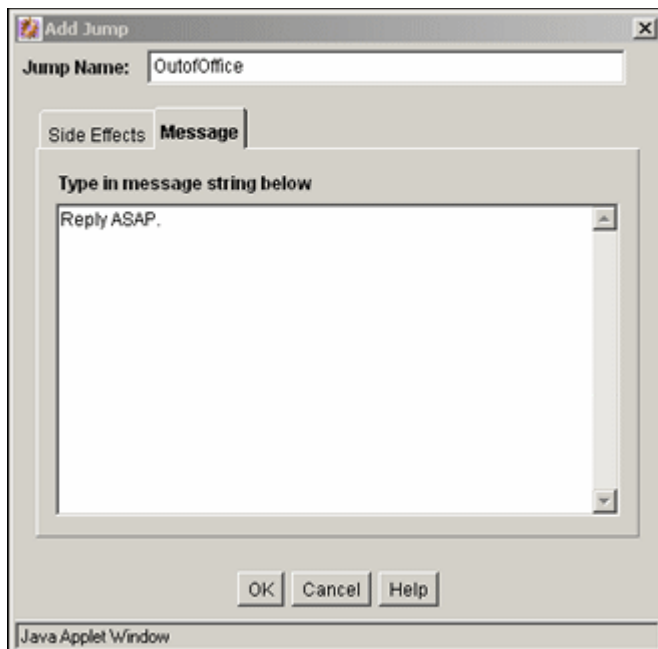
Element	Description
Jump Name field	The name of the jump.
Has return point check box and list	Cleared: No return step is defined for the jump. Selected: Select a return step for the jump.
Do not notify users on entry check box	Cleared: Reviewers for the step will receive the message defined on the Message tab when the jump is entered. Selected: Reviewers will not be notified that the jump has been entered.
Release document from edit state	Cleared: Document is not released until it is approved. Selected: Document is released for indexing, searching, and so forth prior to approval.
Custom Effects field	Enter custom side effects using Idoc script.

Add/Edit Jump Screen: Message Tab

The Message tab of the Add/Edit Jump screen is used to enter a notification message for the jump. To access this tab, click the tab on the [Script Properties Screen](#).

To change a notification message, you can use Component Architecture to customize the following include files and templates. These files contain the mail information that is the default for the system:

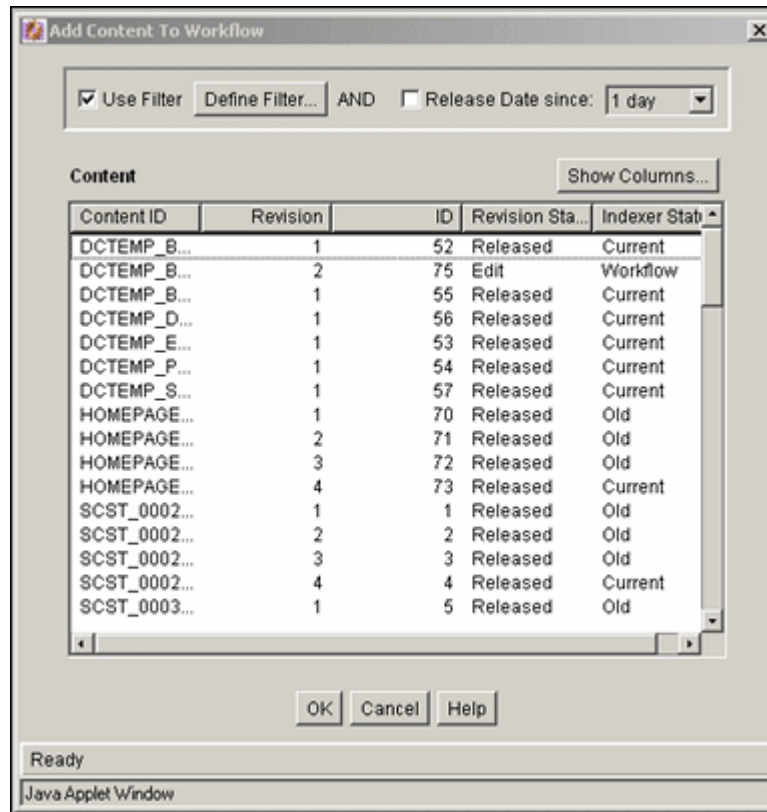
- *wf_approve_mail_subject* include
- *wf_approve_mail_message* include
- *wf_started_subject* include
- *wf_rejected_subject* include
- *reviewer_mail.htm* template
- *reject_mail.htm* template
- *contributor_mail.htm* template



Element	Description
Type in message string below field	Enter the message that reviewers for the step will receive when the jump is entered. This field can include Idoc Script (for example, <\$dDocName\$> is ready for your review.).

A.2.5.6 Content Item View Screen

The Content Item View screen is used to select an existing revision for event script testing purposes. To access this screen, click **Select** on the [Script Properties Screen](#), Test Tab.



Element	Description
Use Filter check box	Select this check box to narrow the Content list as defined by the Define Filter Screen.
Define Filter button	Displays the Define Filter Screen.
Release Date since check box and list	Select this check box to narrow the Content list as defined by the Release Date option list.
Show Columns button	Displays the Show Columns screen.
Content list	Shows the revisions in the content server repository that match the filter settings. <ul style="list-style-type: none"> The list displays 50 revisions per page. Double-clicking a revision displays the Info page for that revision.

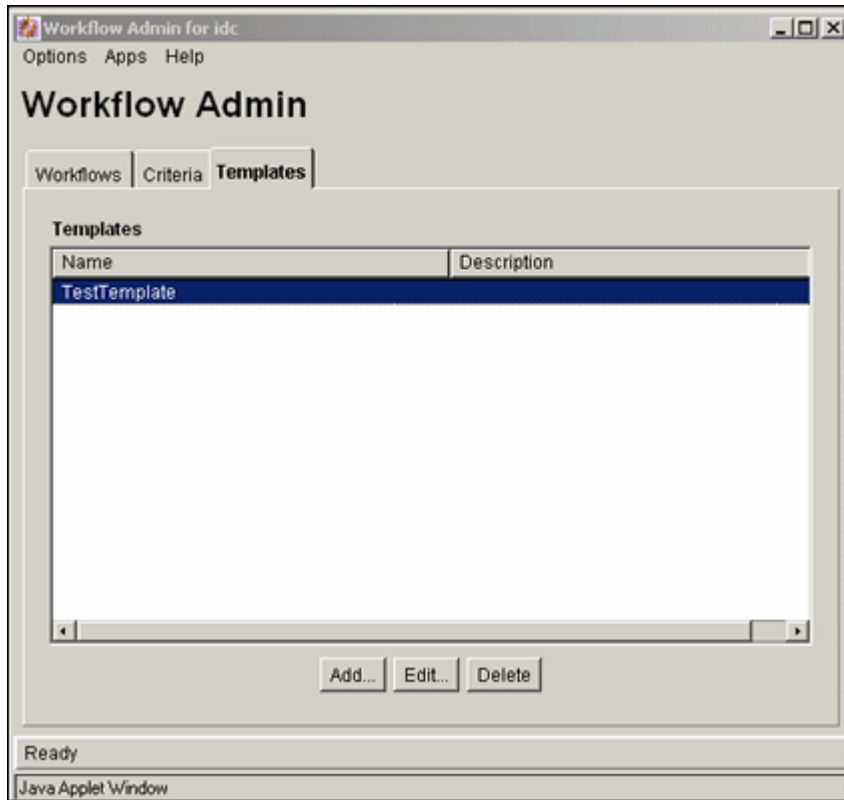
A.2.6 Workflow Template Interface Screens

The following screens are used to create templates:

- [Workflow Admin: Templates Tab](#)
- [Add/Edit Template Screen](#)
- [Add New/Edit Step Screen](#)
- [Add Alias to Step Screen](#)
- [Add User to Step](#)
- [Add Token: Templates](#)
- [Edit Additional Exit Condition Screen](#)

A.2.6.1 Workflow Admin: Templates Tab

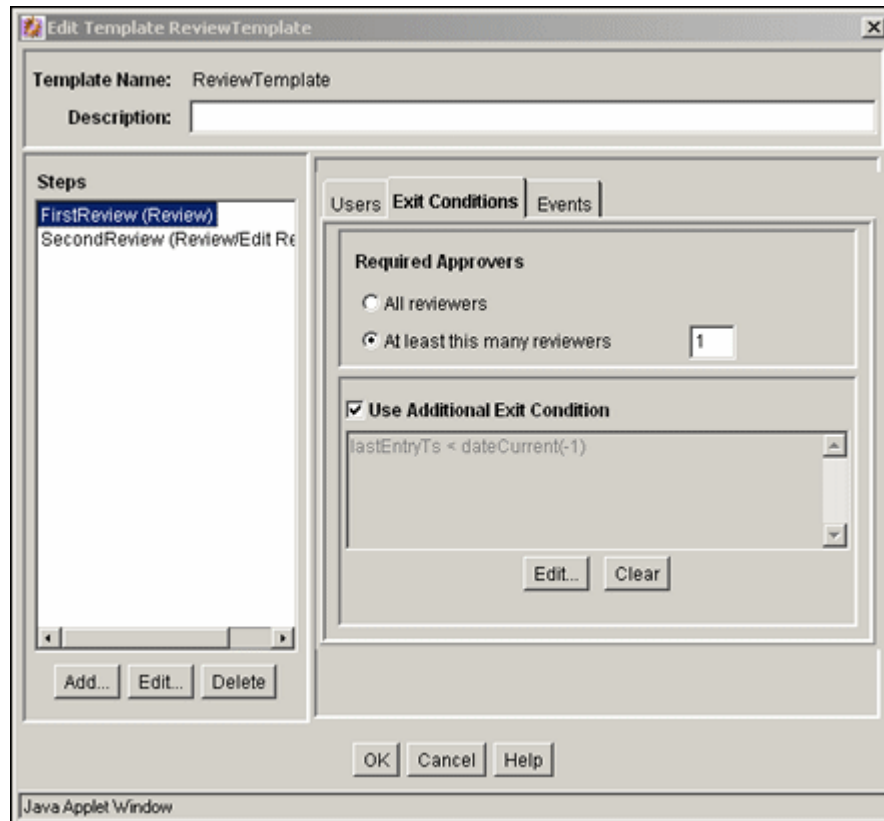
The Templates tab of the Workflow Admin application is used to add, edit, and delete workflow templates. To access this tab, click the tab on [The Workflow Admin Application](#).



Element	Description
Name column	Lists the workflow template names. The following characters are not allowed: spaces, tabs, line feeds, carriage returns, and ; : ^ ? @ & + " # % < * ~
Description column	A description of the workflow template.
Add button	Displays the Add/Edit Template Screen .
Edit button	Displays the Add/Edit Template Screen .
Delete button	Enables you to delete the selected workflow template.

A.2.6.2 Add/Edit Template Screen

The Add/Edit Template screen is used to add or edit a workflow template. To access this screen, click **Add** or **Edit** on the [Workflow Admin: Templates Tab](#).



Element	Description
Template Name field	The name of the workflow template. The following characters are not allowed: spaces, tabs, line feeds, returns, and ; : ^ ? @ & + " # % < * ~
Description field	A description of the workflow template.

Steps Pane Fields

Element	Description
Steps list	Lists the steps included in the workflow template.
Add button	Displays the Add New /Edit Step Screen .
Edit button	Displays the Add New /Edit Step Screen .
Delete (Step) button	Enables you to delete the selected step from the workflow template.

Users Tab Fields

Element	Description
Alias/User list	Lists the users, aliases, and tokens currently assigned to the selected step.
Add Alias button	Displays the Add Alias to Step Screen .
Add User button	Displays the Add User to Step .

Element	Description
Add Token button	Displays the Add Token: Templates .
Delete (User) button	Enables you to delete the selected alias, user, or token from the step.

Exit Conditions Tab Fields

Element	Description
All reviewers option	If this is selected, all users assigned to the step must approve the revision before the workflow passes to the next step.
At least this many reviewers option and field	If this is selected, the workflow passes to the next step as soon as the specified number of users have approved the revision.
Use Additional Exit Condition check box and field	If this is selected, the conditions defined in the text box must be met before the workflow passes to the next step.
Edit button	Displays the Edit Additional Exit Condition Screen .
Clear button	Clears the Exit Condition text box.

Events Tab Fields

See "[Add New/Edit Step Screen: Events Tab](#)" on page A-107.

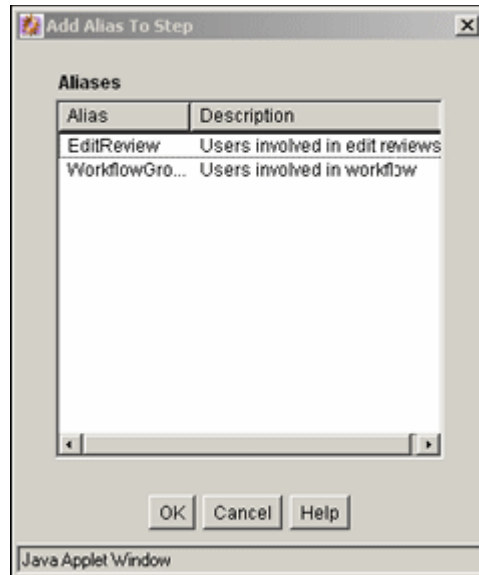
A.2.6.3 Add New/Edit Step Screen

The Add New/Edit Step screen is used to add or edit a step in a workflow template. To access this screen, select a step and click **Add** or **Edit** in the Steps pane of the [Add/Edit Template Screen](#).

Element	Description
Name field	The name for the step. Typically this is the type of review (such as <i>initial review</i> or <i>copy edit</i>) or the function of the reviewer (such as <i>manager</i> or <i>copy editor</i>).
Description field	A description for the step.
Type list	Reviewer: Approves or rejects the revision. Reviewer/Contributor: Can edit the revision and approves or rejects it.

A.2.6.4 Add Alias to Step Screen

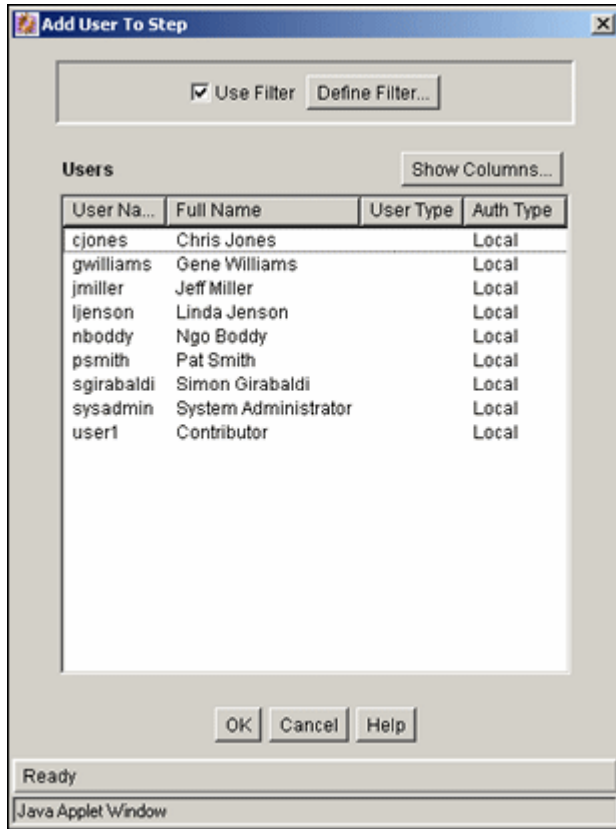
The Add Alias to Step screen is used to assign aliases to a workflow template step. To access this screen, click **Add Alias** on the Users tab of the [Add/Edit Template Screen](#).



Element	Description
Alias column	Lists the available aliases.
Description column	A description of the alias.

A.2.6.5 Add User to Step

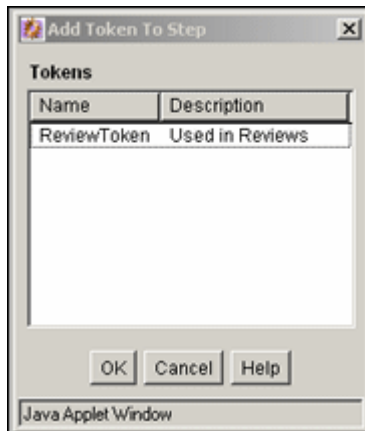
The Add User to Step screen is used to assign users to a workflow template step. To access this screen, click **Add User** on the Users tab of the [Add/Edit Template Screen](#).



Element	Description
Use Filter check box	Select this check box to narrow the Users list as defined by the Define Filter screen.
Define Filter button	Displays the Define Filter screen.
Show Columns button	Displays the Show Columns screen.
Users list	Shows the users that match the filter settings.

A.2.6.6 Add Token: Templates

The Add Token to Step screen is used to assign workflow tokens to a workflow template step. To access this screen, click **Add Token** on the Users tab of the [Add/Edit Template Screen](#).



Element	Description
Name column	Lists the available tokens.
Description column	A description of the token.

A.2.6.7 Edit Additional Exit Condition Screen

The Edit Additional Exit Condition screen is used to define exit conditions for a workflow template step. To access this screen, click **Edit** on the Exit Conditions tab of the [Add/Edit Template Screen](#).

Element	Description
Field list	Select the workflow condition or metadata field to be evaluated.
Operator list	Select an operator. This is a dependent option list that shows only the operators associated with the Field option.
Value list	The value for the specified metadata field. <ul style="list-style-type: none"> Depending on the option selected in the Field list, this field can be a text entry field, text entry field with Select button, or list of the available options. The following wildcards can be used in this field: <ul style="list-style-type: none"> * = one or more characters; ? = single character
Select button	Displays a list of existing items (such as content items or users), from which you can select a value for the Value field. This button appears only when certain metadata fields are selected.
Add button	Adds the conditional statement defined by the Field, Operator, and Value fields to the exit condition clause.
Update button	Changes the selected conditional statement to the statement defined by the Field, Operator, and Value fields.

Element	Description
Condition Clause list	Lists the conditional statements that have been added to the exit condition. Multiple clauses can be appended as <i>AND</i> statements.
Delete button	Deletes the selected conditional statement.
Custom Condition Expression check box and field	<p>Enables display and edit of the Idoc Script generated from the condition clauses.</p> <ul style="list-style-type: none"> The additional exit conditions must be Idoc Script statements that evaluate to true or false. Do not enclose the code in Idoc Script tags <\$ \$>. <p>Caution: If you clear the Custom Condition Expression check box, the expression reverts to its original definition; all modifications will be lost.</p>

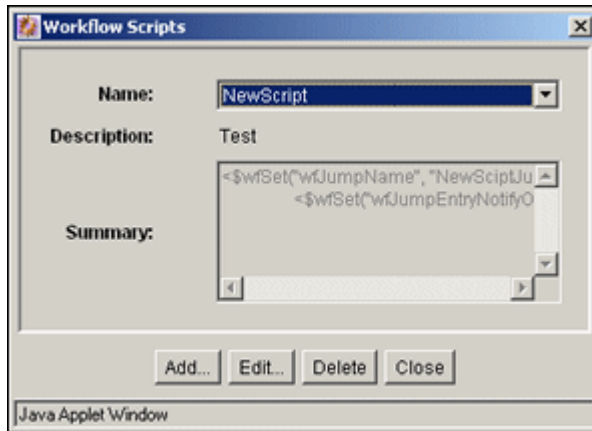
A.2.7 Workflow Scripts User Interface

The following screens are used to create workflow scripts:

- Workflow Scripts Screen
- Add/Edit Script Screen
- Add/Edit Script Screen: Jumps Tab
- Add/Edit Script Screen: Custom Tab
- Add/Edit Script Screen: Test Tab
- Add/Edit Jump Screen
- Add/Edit Jump Screen: Side Effects Tab
- Add/Edit Jump Screen: Message Tab
- Content Item View Screen
- Select Workflow Step Screen

A.2.7.1 Workflow Scripts Screen

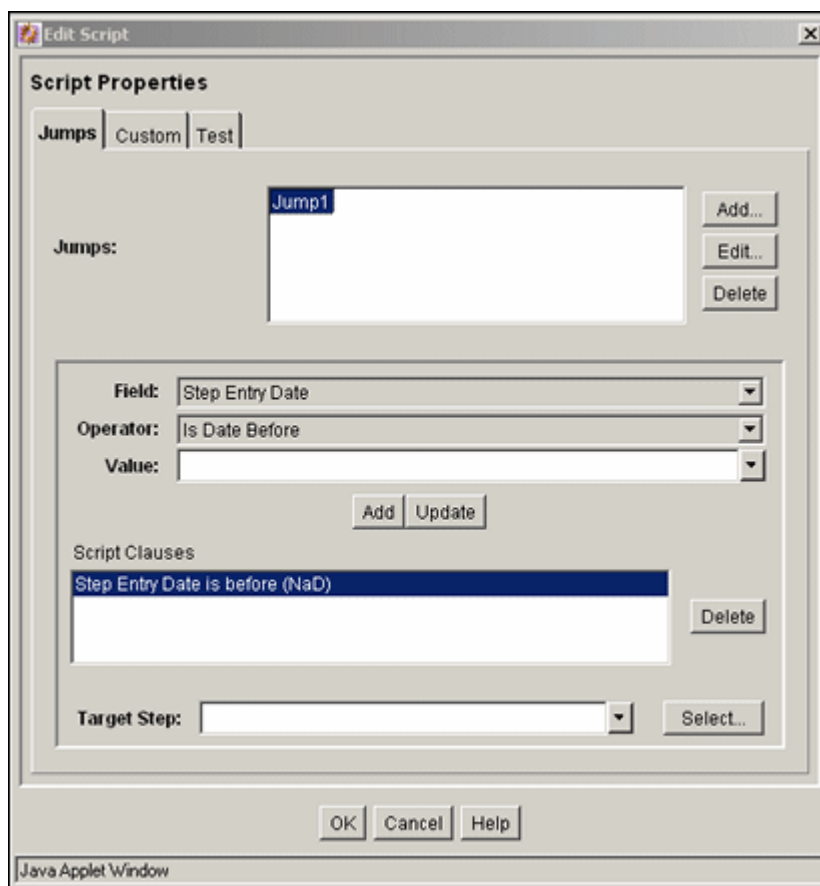
The Workflow Scripts screen is used to add, edit, and delete script templates. To access this screen, select **Script Templates** from the **Options** menu in [The Workflow Admin Application](#).



Element	Description
Name field	Lists the script template names.
Description field	A description of the script template.
Summary field	Shows the code that is defined for the script template.
Add button	Displays the Add/Edit Script Screen .
Edit button	Displays the Add/Edit Script Screen .
Delete button	Enables you to delete the selected script template.
Close button	Closes the Workflow Scripts screen.

A.2.7.2 Add/Edit Script Screen

The Add/Edit Script screen is used to create, modify, and test script templates. To access this screen, click **Add** or **Edit** on the [Workflow Scripts Screen](#).

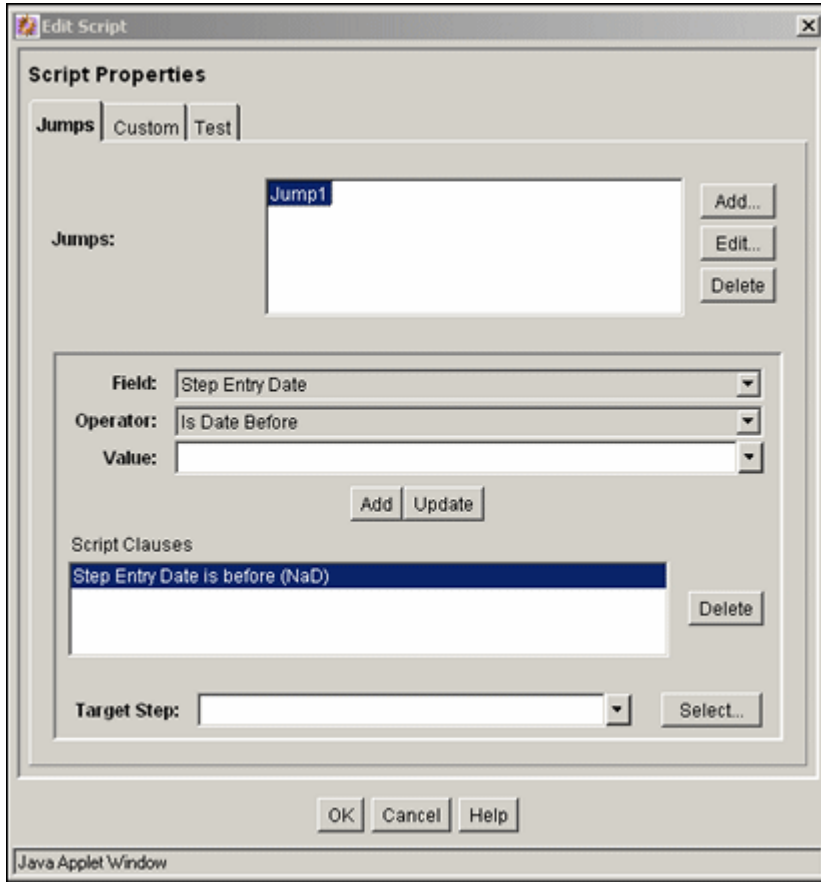


Element	Description
Script Name field	The name of the script template. The following characters are not allowed: spaces, tabs, line feeds, returns, and ; : ^ ? @ & + " # % < * ~
Description field	A description of the script template.
Jumps tab	Used to create the script template code. See " Add/Edit Script Screen: Jumps Tab " on page A-126.

Element	Description
Custom tab	Used to view and customize the script template code. See "Add/Edit Script Screen: Custom Tab" on page A-127.
Test tab	Used to test the script template. See "Add/Edit Script Screen: Test Tab" on page A-128.

A.2.7.3 Add/Edit Script Screen: Jumps Tab

The Jumps tab is used to create the script template code. To access this tab, click the tab on the [Add/Edit Script Screen](#).

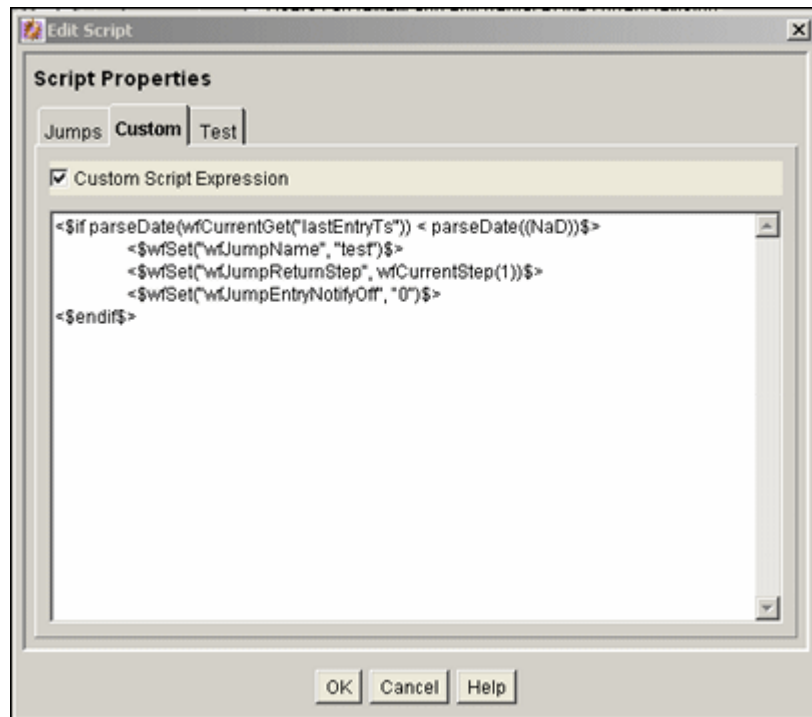


Element	Description
Jumps list	Lists the jumps that are included in the script.
Add (Jumps) button	Displays the Add/Edit Jump Screen .
Edit button	Displays the Add/Edit Jump Screen .
Delete (Jumps) button	Enables you to delete the selected jump.
Field list	Select the workflow condition or metadata field to be evaluated.
Operator list	Select an operator. This is a dependent option list that shows only the operators associated with the Field option.

Element	Description
Value list	<p>The value for the specified metadata field.</p> <ul style="list-style-type: none"> Depending on the option selected in the Field list, this field can be a text entry field, text entry field with Select button, or list of the available options. The following wildcards can be used in this field: <ul style="list-style-type: none"> * = one or more characters; ? = single character
Select button	Displays a list of existing items (such as content items or users), from which you can select a value for the Value field. This button appears only when certain metadata fields are selected.
Add (Script Clauses) button	Adds the conditional statement defined by the Field, Operator, and Value fields to the selected jump.
Update button	Changes the selected conditional statement to the statement defined by the Field, Operator, and Value fields.
Script Clauses list	Lists the conditional statements that have been added to the jump. Multiple clauses can be appended as <i>AND</i> statements.
Delete (Script Clauses) button	Deletes the selected conditional statement.
Target Step list	Select a target step for the jump.

A.2.7.4 Add/Edit Script Screen: Custom Tab

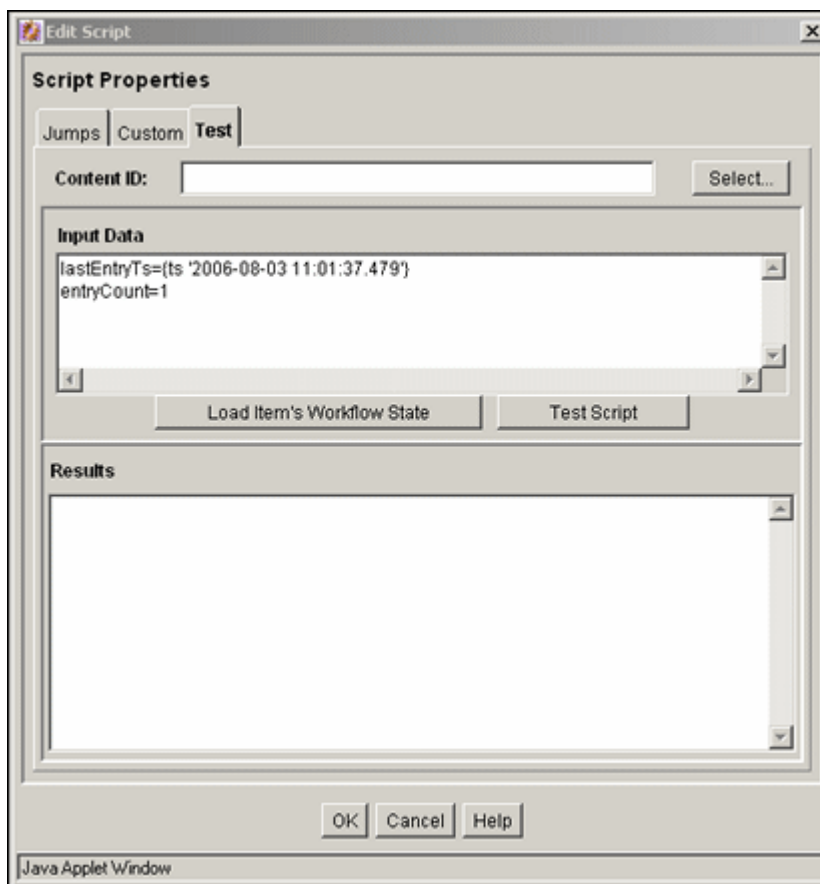
The Custom tab is used to edit the script that was generated automatically by the options on the Jumps tab. To access this tab, click the tab on the [Add/Edit Script Screen](#).



Element	Description
Custom Script Expression check box	<p>Selected: The script can be edited, and the revised script will be saved. The jumps cannot be edited from the Jumps tab.</p> <p>Cleared: The script reflects the statements as defined on the Jumps tab.</p> <p>Caution: If you clear the Custom Script Expression check box, the expression reverts to its original definition; all modifications will be lost.</p>
Script field	Shows the script of all jumps in the script template.

A.2.7.5 Add/Edit Script Screen: Test Tab

The Test tab is used to test a script template. To access this tab, click the tab on the [Add/Edit Script Screen](#).

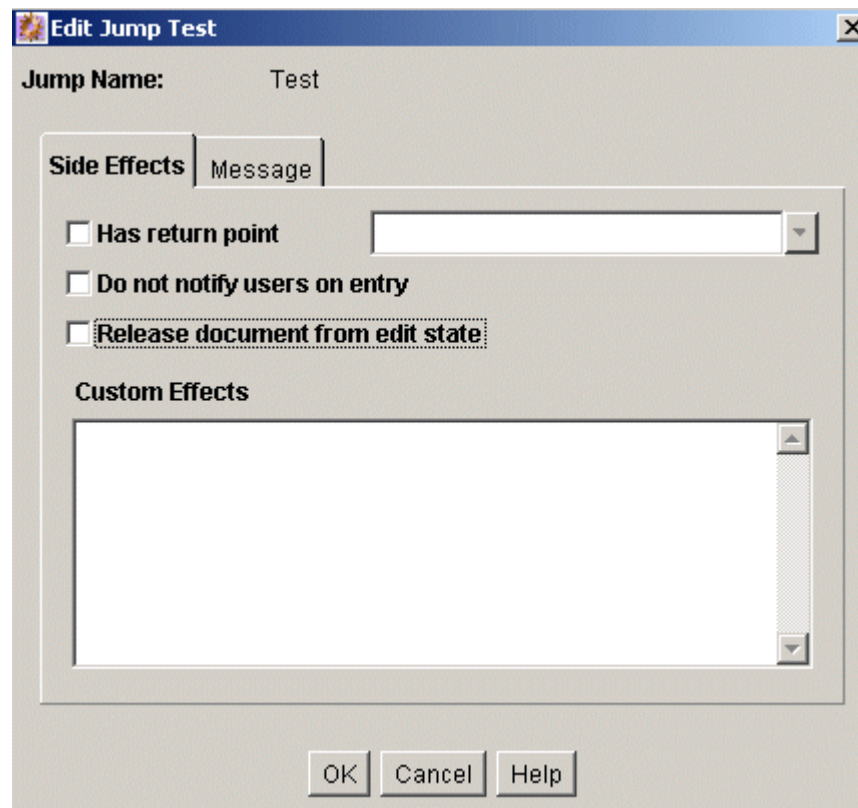


Element	Description
Content ID field	Enter the Content ID for a content item to be tested.
Select button	Displays the Content Item View Screen .
Input Data field	When the screen is first displayed, this field shows the default state. When a workflow is selected and when the content item's workflow state is loaded, this field shows the data that will be tested.
Select Workflow button	Displays the Select Workflow Step Screen

Element	Description
Load Item's Workflow State button	Loads the companion file for the selected content item. If the selected content item is not in a workflow, the content item is treated like a new contribution.
Test Script button	Tests the script and displays the results in the Results pane.
Results field	Displays the results of the script test. Idoc script error messages will be displayed if there are processing errors.

A.2.7.6 Add/Edit Jump Screen

The Add/Edit Jump screen is used to add or edit jump side effects and notification messages for a script template. To access this screen, click **Add** or **Edit** in the Jumps pane of the [Add/Edit Script Screen: Jumps Tab](#).



Element	Description
Side Effects tab	Used to specify the jump name, return point, custom side effects, and to enable notification for the jump. See " Add/Edit Jump Screen: Side Effects Tab " on page A-129.
Message tab	Used to enter a notification message for the jump. See " Add/Edit Jump Screen: Message Tab " on page A-130.

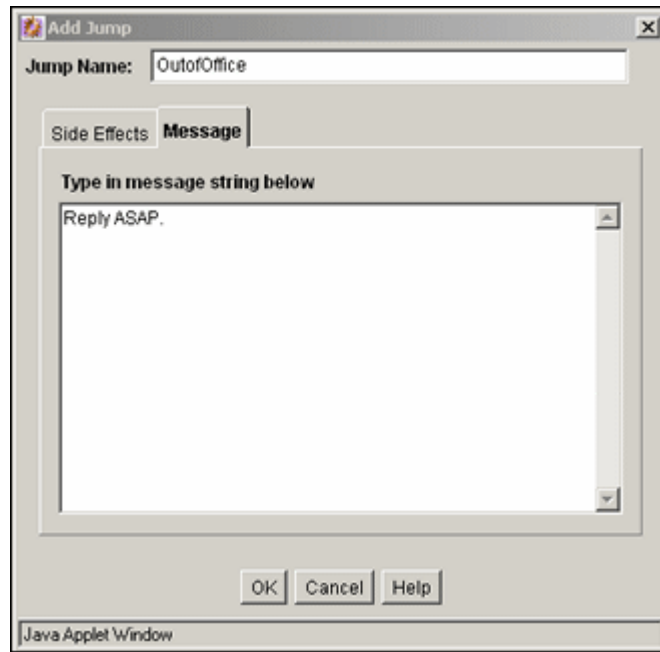
A.2.7.7 Add/Edit Jump Screen: Side Effects Tab

The Side Effects tab is used to add or edit jump side effects for a script template. To access this tab, click the tab on the [Add/Edit Jump Screen](#).

Element	Description
Jump Name field	The name of the jump.
Has return point check box and list	Cleared: No return step is defined for the jump. Selected: Select a return step for the jump.
Do not notify users on entry check box	Cleared: Reviewers for the step will receive the message defined on the Message tab when the jump is entered. Selected: Reviewers will not be notified that the jump has been entered.
Release document from edit state	Cleared: Document is not released until it is approved. Selected: Document is released for indexing, searching, and so forth prior to approval.
Custom Effects field	Enter custom side effects using Idoc Script.

A.2.7.8 Add/Edit Jump Screen: Message Tab

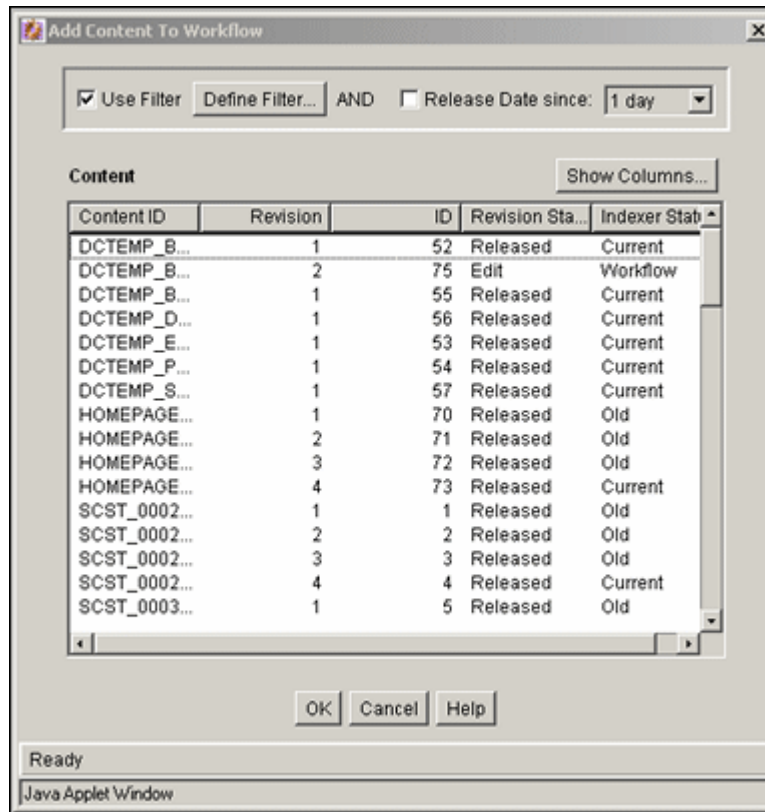
The Message tab is used to enter a notification message for a jump in a script template. To access this tab, click the tab on the [Add/Edit Jump Screen](#).



Element	Description
Type in message string below field	Enter the message that reviewers for the step will receive when the jump is entered.

A.2.7.9 Content Item View Screen

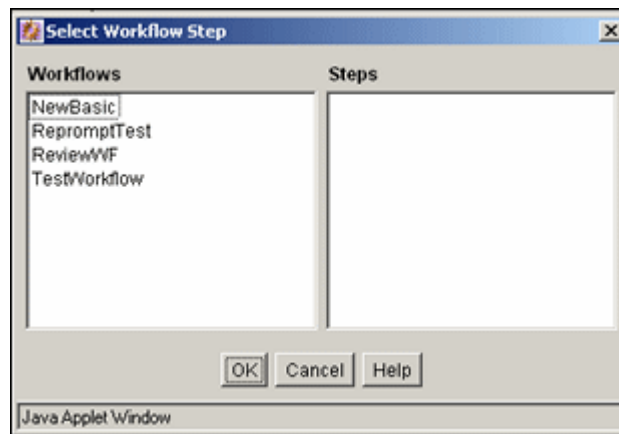
The Content Item View screen is used to select an existing revision for script template testing purposes. To access this screen, click **Select** on the [Add/Edit Script Screen: Test Tab](#).



Element	Description
Use Filter check box	Select this check box to narrow the Content list as defined by the Define Filter screen.
Define Filter button	Displays the Define Filter screen.
Release Date since check box and list	Select this check box to narrow the Content list as defined by the Release Date option list.
Show Columns button	Displays the Show Columns screen, where you can select which columns to display.
Content list	Shows the revisions in the content server repository that match the filter settings. <ul style="list-style-type: none"> Double-clicking a revision displays the Info screen for that revision.

A.2.7.10 Select Workflow Step Screen

The Select Workflow Step screen is used to select an existing workflow step for script template testing purposes. To access this screen, click **Select Workflow** on the [Add/Edit Script Screen: Test Tab](#).



Element	Description
Workflows list	Selecting a workflow displays the workflow steps in the Steps field.
Steps list	The selected step will be used for testing purposes.

A.3 PDF Watermark Interface

This section displays and describes the PDF Watermark user interface screens.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

This section covers the following topics:

- ["PDF Watermark Administration Screen"](#) on page A-133
- ["Rules Tab"](#) on page A-134
- ["Add New/Edit Rule Screen"](#) on page A-135
- ["Add New/Edit Criteria Screen"](#) on page A-135
- ["Templates Tab"](#) on page A-136
- ["Add New/Edit Template Screen"](#) on page A-136
- ["Add New/Edit Text Watermark Screen"](#) on page A-138
- ["Add New/Edit Image Watermark Screen"](#) on page A-139
- ["Configuration Tab"](#) on page A-140
- ["Edit Default Value Screen"](#) on page A-141

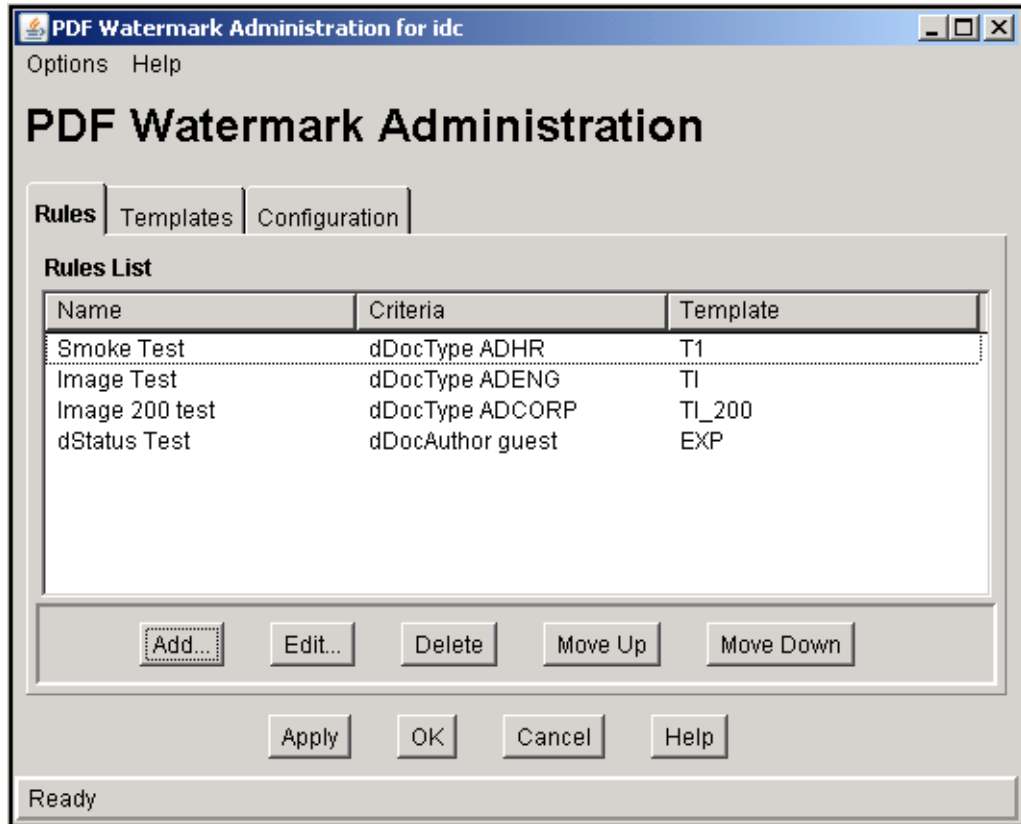
A.3.1 PDF Watermark Administration Screen

The PDF Watermark Administration screen is used to specify rules, templates, and metadata values for templates used in watermarking content. Access this screen by selecting **Administration**, then selecting **PDF Watermark Administration**. The Help menu provides a Contents option.

Administration Screen Tabs	Description
Rules	Displays the Rules Tab .
Templates	Displays the Templates Tab .
Configuration	Displays the Configuration Tab .

A.3.2 Rules Tab

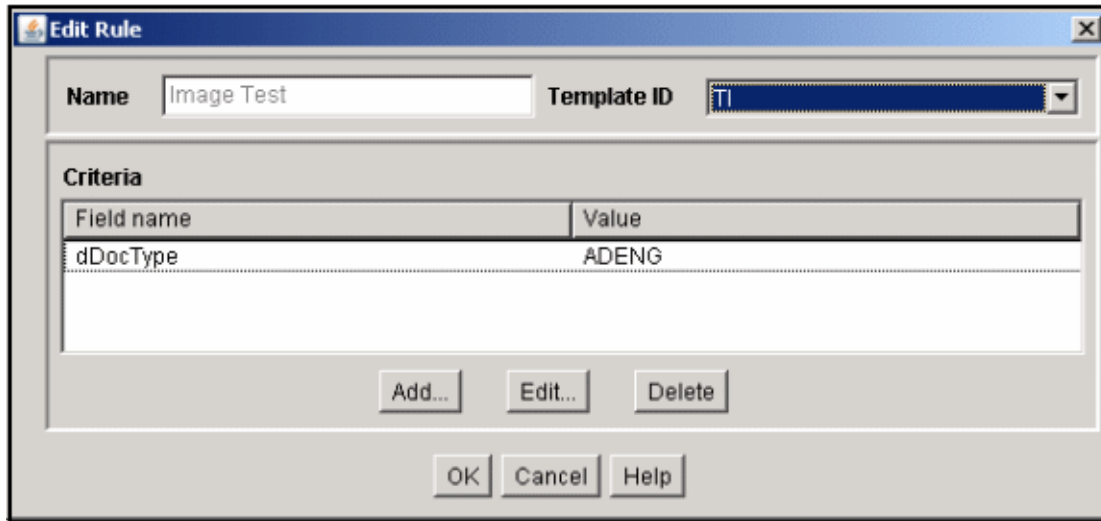
Use the Rules tab to define a rule or ruleset, which determines which content is dynamically watermarked, upon user request.



Field	Description
Add	Adds a new rule and displays the Add New/Edit Rule Screen .
Edit	Enables you to edit the selected rule and displays the Add New/Edit Rule Screen .
Delete	Removes the selected rule from the list.
Move Up/Down	Used to adjust the specific placement order of the selected entry in the rules list. The position of each rule in the list is relevant to its priority. The higher or lower a rule is positioned in the list, the higher or lower its priority is in the hierarchy.
Apply	Applies the changes to the rules list.
OK	Saves the changes and exits the screen.
Cancel	Discards the changes and exits the screen.

A.3.3 Add New/Edit Rule Screen

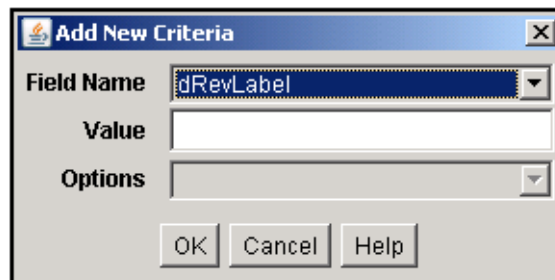
The Add New/Edit Rule screen is used to specify a rule for a PDF watermark template. The Edit Rule screen has a list of previously defined templates.



Field	Description
Name	Rule Name
Template ID	Template Content ID
Add	Adds new criteria to the rule and displays the Add New/Edit Criteria Screen . Specify a value for any or all of the available criteria.
Edit	Permits editing of the individual criteria as previously defined and displays the Add New/Edit Criteria Screen .
Delete	Deletes the selected criteria from the list.
OK	Saves the changes and exits the screen.
Cancel	Discards the changes and exits the screen.

A.3.4 Add New/Edit Criteria Screen

The Add New/Edit Criteria screen enables you to add a new criteria or change an existing one. You can choose a field and specify a trigger value. To access this screen, click **Add** or **Edit** on the [Add New/Edit Rule Screen](#).

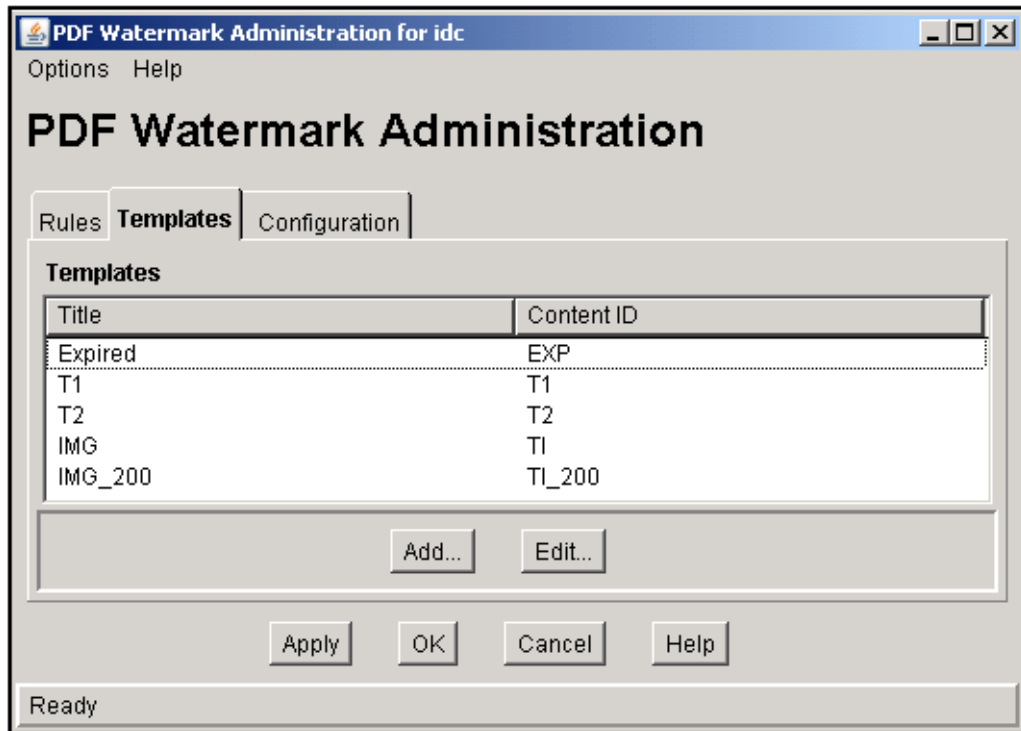


Field	Description
Field Name	Name of the new or edited field.

Field	Description
Value	Name of the trigger value.
Options	If the field is an Option List, the available values populate this drop-down list.
OK	Saves the changes and exits the screen.
Cancel	Discards the changes and exits the screen.

A.3.5 Templates Tab

Use the Templates tab to design and edit templates. Templates are checked into content server as managed content items. Templates may be used for either static or dynamic watermarking. Templates are stored as .hda files.



Field	Description
Add	Adds a new template and displays the Add New/Edit Template Screen .
Edit	Enables you to edit the selected template and displays the Add New/Edit Template Screen .
Apply	Applies the changes to the templates list.
OK	Saves the changes and exits the screen.
Cancel	Discards the changes and exits the screen.

A.3.6 Add New/Edit Template Screen

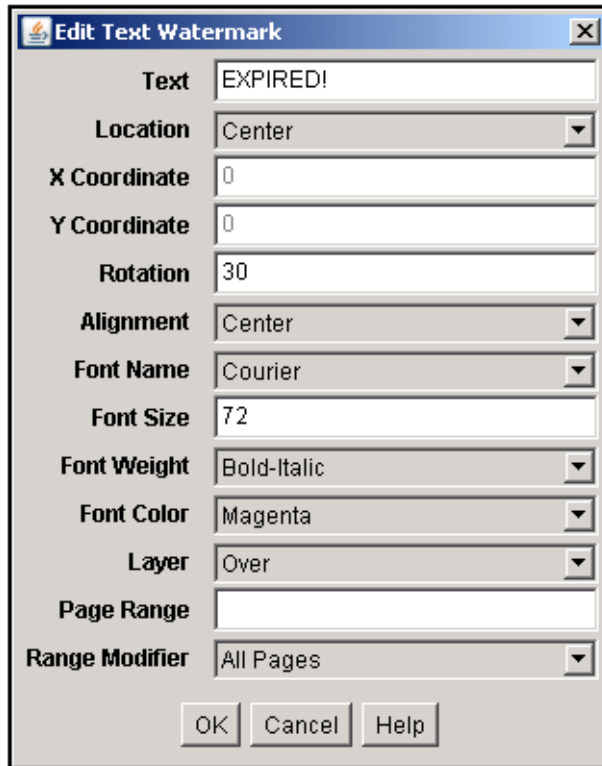
The Add New/Edit Template screen is used to specify values for a template for PDF watermarks.

Field	Description
Title	Enter the template title.
Content ID	Content ID for this template. This must be manually assigned; auto-generation of Content # ID is not currently supported.
Security Level	Set to NONE, 40, or 128. 40 and 128 signify the level of bit encryption. Default is NONE.
User Password	When security is applied, this password is required to view the PDF. No modification of the PDF is allowed.
Owner Password	When security is applied, this password permits the user to modify the PDF passwords, permissions, and security level.
Allow Print	Set to YES to allow printing, NO to disallow, or DEGRADED.
Allow Copy	Set to YES to allow copying, NO to disallow.
Text Watermarks Summary	Enables users to create, edit, or delete text watermarks for this template.
Image Watermarks Summary	Enables users to specify image watermarks, and edit or delete them.

Field	Description
OK	Applies the selections made, saves the template, and exits the screen.
Cancel	Cancels the selections made and exits the screen.

A.3.7 Add New/Edit Text Watermark Screen

The Add New/Edit Text Watermark screen is used to specify values for text appearing in a PDF watermark.

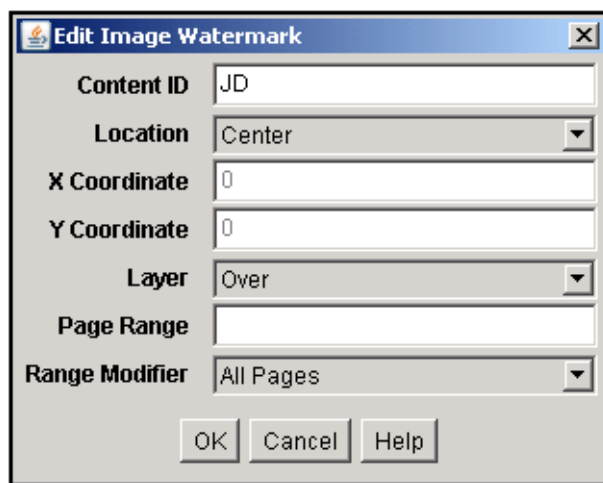


Field	Description
Text	Text to appear in the watermark. The text may include embedded symbols.
Location	Location where the watermark appears. Choices are CENTER, HEADER, FOOTER, or EXPLICIT, with CENTER as the default.
X Coordinate	X coordinate specified in points with each point =1/72" from baseline 0;0 location.
Y Coordinate	Y coordinate specified in points with each point =1/72" from baseline 0;0 location
Rotation	0 through 359 degrees counter clock wise.
Alignment	Alignment of the watermark is selected here. Choices are: ALIGN LEFT, ALIGN RIGHT, ALIGN CENTER and EXPLICIT.

Field	Description
Font Name	Available fonts are COURIER, TIMES ROMAN, HELVETICA, SYMBOL, ZAPFDINGBATS, STSong-Light, STSongStd-Light, MHei-Medium, MSung-Light, MSungStd-Light, HeiseiMin-W3, HeiseiKakuGo-W5, KozMinPro-Regular, HYGoThic-Medium, HYSMyeongJo-Medium, HYSMyeongJoStd-Medium. COURIER is the default.
Font Size	The size of the font in the watermark. Values are: 8, 9, 10, 11, 12, and so on.
Font Weight	The weight of the font in the watermark. Choices are NORMAL, BOLD, ITALIC, BOLDITALIC. This selection is disabled for fonts not having an extended weight (Asian fonts).
Font Color	BLACK, BLUE, CYAN, DKGRAY, GRAY, GREEN, LTGRAY, MAGENTA, ORANGE, PINK, RED, WHITE, YELLOW.
Layer	Places the watermark in the layer either OVER or UNDER the text. Default is OVER.
Page Range	Pages number ranges to watermark, for example 1,2,4,10:15,19,23:LAST. Ranges are indicated with a colon. When left blank the watermark includes all pages.
Range Modifier	All Pages, Odd Pages Only, and Even Pages Only.

A.3.8 Add New/Edit Image Watermark Screen

The Add New/Edit Image Watermark screen is used to specify values for an image appearing in a PDF watermark.

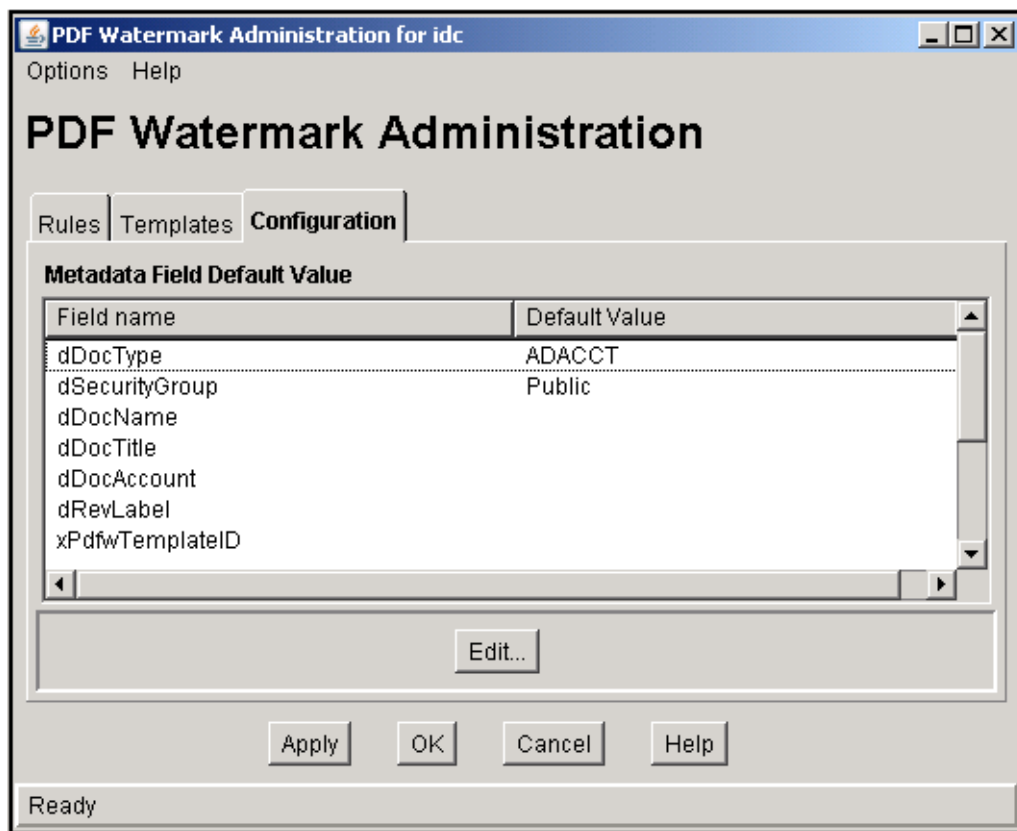


Field	Description
Content ID	The Content ID of the image to be used for the watermark.
Location	Location where the watermark appears. Choices are CENTER, HEADER, FOOTER, or EXPLICIT, with CENTER as the default.
X Coordinate	X coordinate specified in points with each point =1/72" or from baseline 0;0 location.

Field	Description
Y Coordinate	Y coordinate specified in points with each point =1/72" or from baseline 0;0 location.
Layer	Places the watermark in the layer either OVER or UNDER the text. Default is OVER.
Page Range	Pages number ranges to watermark, for example 1,2,4,10:15,19,23:LAST. Ranges are indicated with a colon. When left blank the watermark includes all pages.
Range Modifier	All Pages, Odd Pages Only, and Even Pages Only.

A.3.9 Configuration Tab

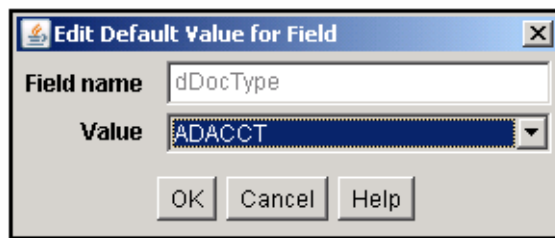
Use the Configuration tab to specify default metadata field values for PDF watermarking.



Field	Description
Edit	Permits the user to specify a value for any or all of the available metadata field default values.
Apply	Applies the changes to the metadata.
OK	Applies the changes to the metadata and exits the screen.
Cancel	Exits the screen without applying any changes to the metadata.

A.3.10 Edit Default Value Screen

Use the Edit Default Value screen to edit the default values of the metadata fields for checking in new templates.



Field	Description
Field Name	Name of the new or edited field.
Value	Name of the trigger value.
OK	Saves the changes and exits the screen.
Cancel	Discards the changes and exits the screen.

A.4 Folders Interface

This section describes the Folders administrative interface screens.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

This section covers the following topics:

- ["Folder Configuration Link"](#) on page A-141
- ["Virtual Folder Administration Configuration Page"](#) on page A-142
- ["System Folder Configuration Page"](#) on page A-143
- ["System Default Information Field Configuration Page"](#) on page A-144
- ["Local Folders Page"](#) on page A-145
- ["Information Field Inherit Configuration Page"](#) on page A-146

A.4.1 Folder Configuration Link

When the Folders component is enabled, a new **Folder Configuration** link appears in the Administration tray.

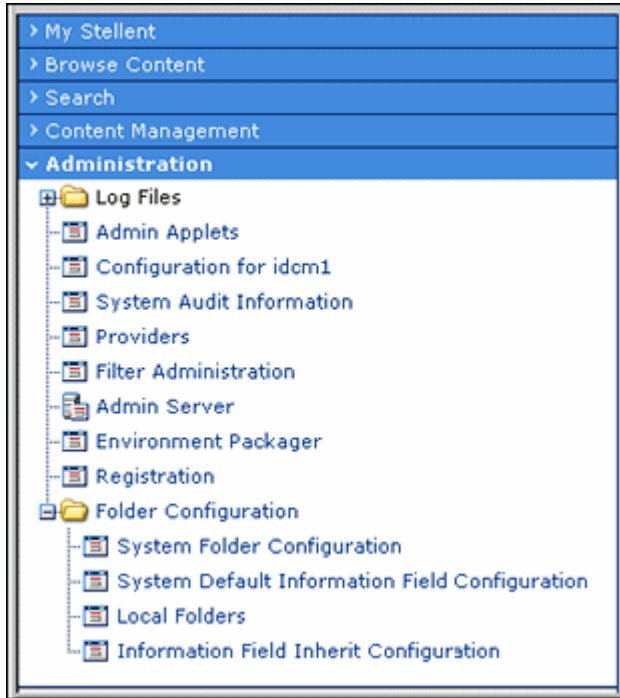
If you click on this link, the [Virtual Folder Administration Configuration Page](#) is displayed.

If you expand this link, the following pages are displayed:

- ["System Folder Configuration Page"](#) on page A-143
- ["System Default Information Field Configuration Page"](#) on page A-144

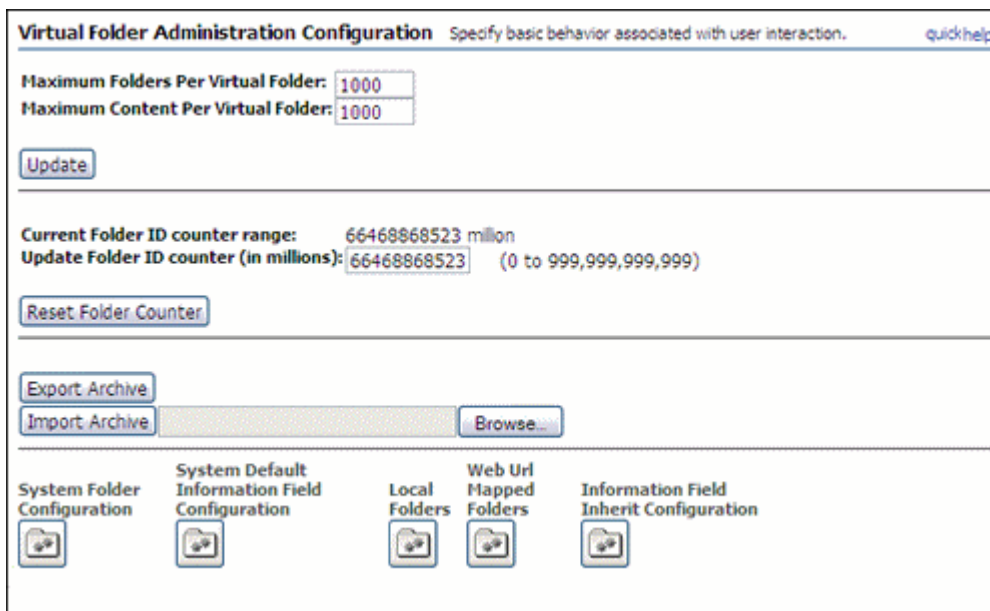
- "Local Folders Page" on page A-145
- "Information Field Inherit Configuration Page" on page A-146

Figure A-1 Folder Configuration Link



A.4.2 Virtual Folder Administration Configuration Page

The Virtual Folder Administration Configuration page is used to limit the number of virtual folders and content items in the folders, and provides access to the other Folder system configuration pages. To access this page, click the Folder Configuration link in the Administration tray.

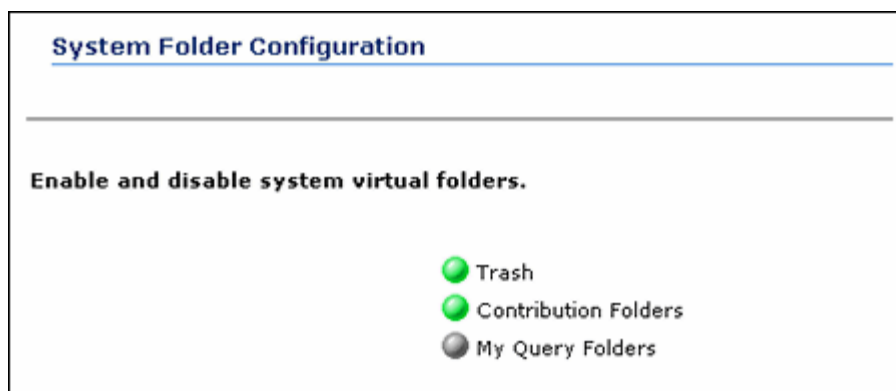


Element	Description
Maximum Folders Per Virtual Folder field	Sets the maximum number of virtual folders that any user can define. If a user attempts to define more than this number of virtual folders, the Save command will return an error message.
Maximum Content Per Virtual Folder field	Sets the maximum number of files that any virtual folder can contain.
Update button	Applies the changes to the system.
Export Archive button	Exports the folder hierarchy as an archive file.
Import Archive button and field	Imports the specified folder archive. Caution: When you import a folder archive file, all current folders are removed from the content server and replaced by the imported hierarchy.
Browse button	Enables you to select the folder archive file that you want to import.
System Folder Configuration button	Displays the System Folder Configuration Page .
System Default Information Field Configuration button	Displays the System Default Information Field Configuration Page .
Local Folders button	Displays the Local Folders Page .
Information Field Inherit Configuration button	Displays the Information Field Inherit Configuration Page .

A.4.3 System Folder Configuration Page

The System Folder Configuration page is used to enable and disable system-level virtual folders. To access this page, do either of the following:

- In the Administration tray, expand the [Folder Configuration Link](#) and click the **System Folder Configuration** link.
- Click the **System Folder Configuration** button on the [Virtual Folder Administration Configuration Page](#).



Element	Description
Enabled/Disabled icon	<p>Clicking an icon displays the associated system folder and enables or disables the folder.</p> <p>Green = Enabled; users see the folder in the Exploring pages.</p> <p>Gray = Disabled; users do not see the folder in the Exploring pages.</p>

Important: Query folders are supported only for use with Check Out and Open, and not for other purposes.

A.4.4 System Default Information Field Configuration Page

The System Default Information Field Configuration page is used to set system default metadata for folders. To access this page, do either of the following:

- In the Administration tray, expand the [Folder Configuration Link](#) and click the **System Default Information Field Configuration** link.
- Click the **System Default Information Field Configuration** button on the [Virtual Folder Administration Configuration Page](#).

System Default Information Field Configuration

Specify the information field defaults that will be applied for all users.

Type

Security Group

Folder

Comments

Hidden

Read Only

Trash Delete Date

Trash Delete Location

Trash Delete Old Name

Trash Deleter

Release Date

Expiration Date

Element	Description
Information fields	<p>Define the metadata values that will be applied to content checked in through a virtual folder if values are not already defined for the folder or by the user.</p> <p>These metadata values are applied only on initial check-in. The setting do not affect revisions to existing content.</p> <ul style="list-style-type: none"> ■ Idoc Script can be used in any of the information fields. ■ Although the Release Date field is required, the content server will automatically use the current date and time if this field is left blank.
Update button	Applies changes to the system defaults.
Reset button	Resets the fields to the last saved values.

A.4.5 Local Folders Page

The Local Folders page is used to map a contribution folder structure to a local file system. To access this page, do either of the following:

- In the Administration tray, expand the [Folder Configuration Link](#) and click the **Local Folders** link.

- Click the **Local Folders** button on the [Virtual Folder Administration Configuration Page](#).

Element	Description
Rebuild button	Deletes the existing local directory structure and recreates the folder structure. Any subdirectories and files will be deleted from and then re-copied to the local directory.
Remove button	Removes the local directory from the file system.
Folder field	The contribution folder to be mapped to a local directory.
Browse button	Displays the Browsing dialog, which is used to select the folder to be mapped to a local directory.
Local Directory field	The directory on a file system where the folder structure will be replicated.
Add button	Replicates the specified folder to the specified directory on the file system.

A.4.6 Information Field Inherit Configuration Page

The Information Field Inherit Information page is used to select which metadata values will be propagated from a folder to its subfolders and content items. To access this page, do either of the following:

- In the Administration tray, expand the [Folder Configuration Link](#) and click the **Information Field Inherit Configuration** link.
- Click the **Information Field Inherit Configuration** button on the [Virtual Folder Administration Configuration Page](#).

Information Field Inherit Configuration

Select information fields that are to be propagated to content.

- Title
- Author
- Type
- Security Group
- Release Date
- Expiration Date
- Folder
- Comments
- Hidden
- Inhibit Propagation
- Read Only
- Trash Delete Date
- Trash Delete Location
- Trash Delete Old Name
- Trash Deleter

Element	Description
Information Field check boxes	Selects the metadata fields to be propagated.
Update button	Saves the current settings.
Reset button	Resets the check boxes to their last saved settings.

A.5 Folios Interface

Folio structure can be pre-defined in a template using the [Create/Edit Folio Template Page](#). Also, default properties can be specified for both the folio and the template.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

This section covers the following topics:

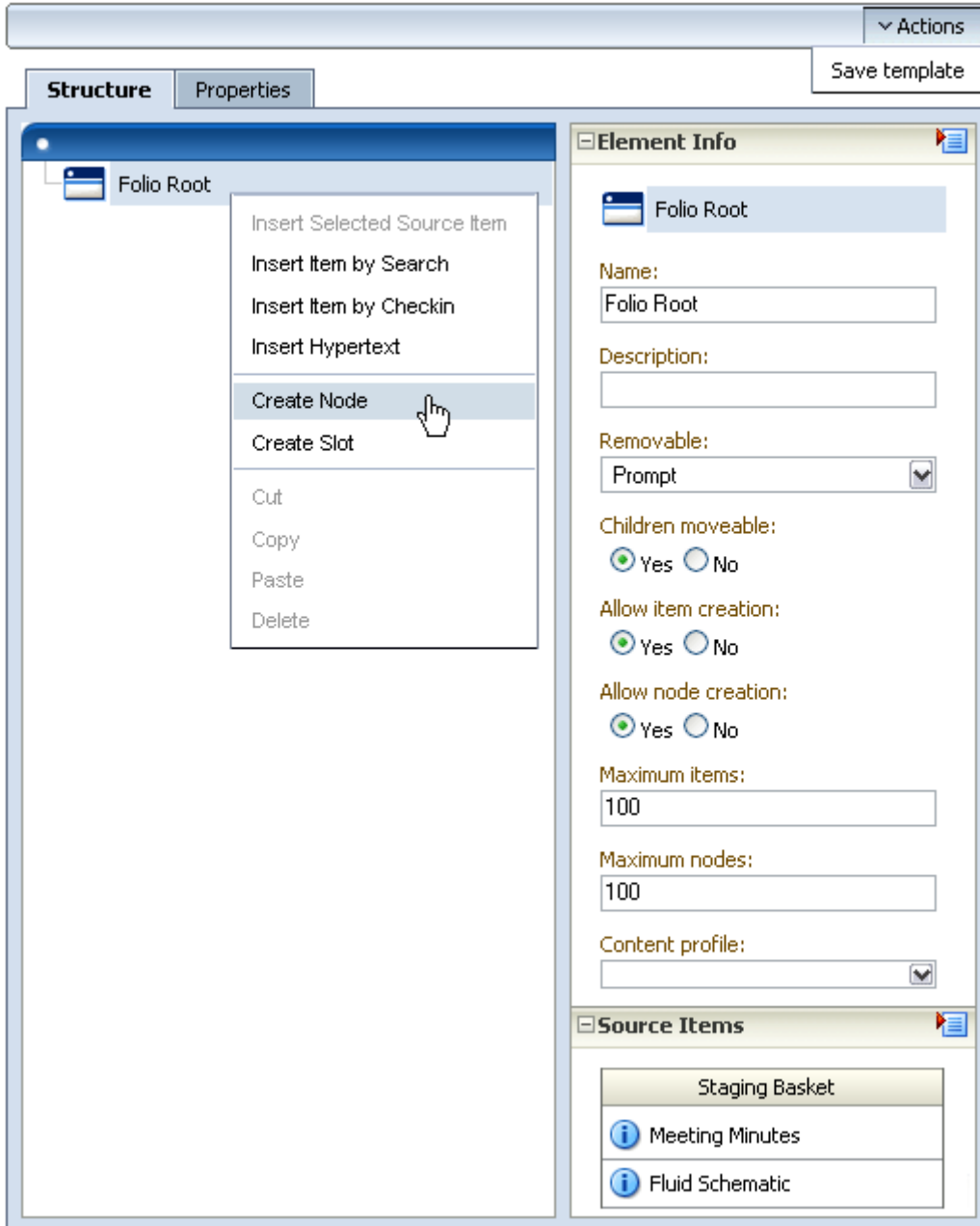
- ["Create/Edit Folio Template Page"](#) on page A-148

A.5.1 Create/Edit Folio Template Page

The Create/Edit Folio Template page is accessed by clicking **Create Folio Template** in the Folio Administration folder on the Administration tray. It is used to create a template that can be selected by a user when creating an advanced folio to provide predefined structure to the folio. The main areas of the Create/Edit Folio Template page are:

- "Structure Tab" on page A-149
- "Properties Tab" on page A-153

Edit Folio Template



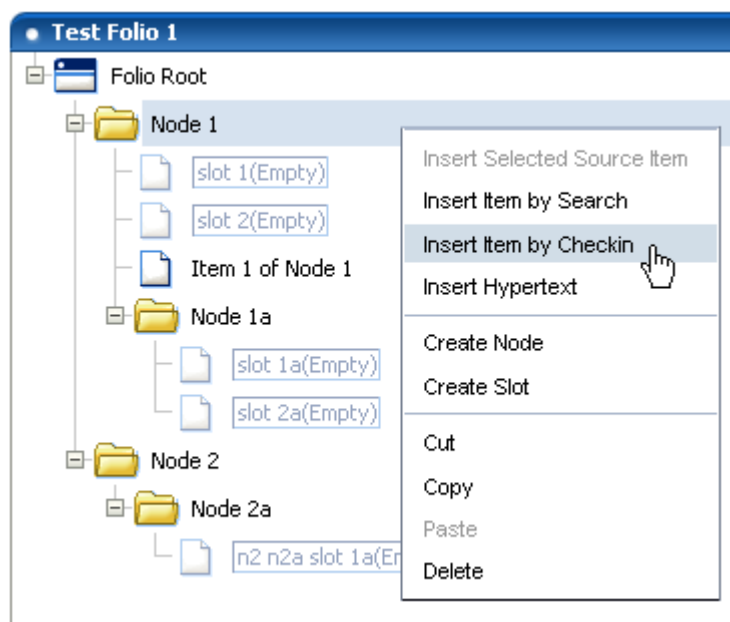
A.5.1.1 Structure Tab

One side of the Create/Edit Folio Template Structure tab displays the folio structure. The other side of the tab is a series of trays, similar to the navigation area of Content Server. Clicking the heading of a tray expands or collapses the tray. The main areas on the Create/Edit Folio Template page are:

- "Folio Structure Tray" on page A-149
- "Element Info Tray" on page A-150
- "Source Items Tray" on page A-152

A.5.1.2 Folio Structure Tray

One side of the Create/Edit Folio Template page is the folio structure section. It displays the nodes, slots, and items that make up the folio hierarchy. Right-clicking within the folio structure area displays a contextual menu for performing a variety of tasks, such as adding and deleting nodes and slots, or inserting content items.



Item	Description
Insert Selected Source Item	Inserts the item in the folio slot with the selected item from the Source Items Tray . If the slot currently contains a content item, the item is replaced with the source item.
Insert Item by Search	Displays a child window with a search form that searches Content Server for a previously checked-in item, and adds it to the folio in the selected node or slot. If the slot currently contains a content item, the item is replaced with the found content. Available in all contexts: Nodes, Slots, and Items.
Insert Item by Checkin	Displays a child window with a content check in form that checks a new content item into Content Server and adds it to the folio in the selected node or slot. If the slot currently contains a content item, the content item is replaced with the checked in content. Available in all contexts: Nodes, Slots, and Items

Item	Description
Remove Content Item	Removes a content item from a slot. Note that this does not delete the slot, but empties it, leaving the folio structure intact. To delete a slot, you must select Delete from the contextual menu. Available in Item context only.
Insert Hypertext	Creates a new item in the folio structure that can establish a hypertext link to the specified URL. Available in all contexts: Nodes, Slots, and Items
Create Node	Creates a new node or sub-node in the folio structure.
Create Slot	Creates an empty slot in the folio structure.
Cut	Cuts an item, node, or slot from the folio structure for placement elsewhere in the same folio. Available in all contexts: Nodes, Slots, and Items
Copy	Copies an item, node, or slot from the folio structure for placement elsewhere in the same folio. Available in all contexts: Nodes, Slots, and Items
Paste	Pastes an item, node, or slot that was previously cut or copied from the folio structure into another area of the same folio. Available in all contexts: Nodes, Slots, and Items
Delete	Deletes an item, node, or slot from the folio structure. Available in all contexts: Nodes, Slots, and Items

A.5.1.3 Element Info Tray

The first tray on the other side of the Create/Edit Folio Template page is the element info tray. Use this tray to articulate the details of each element of the XML template file checked into Content Server to define the folio. When a node, slot, or item is selected in the folio structure section of the page, information about what is selected is displayed in the element info section, where it can be modified. Modified information is written back to the XML file checked into Content Server.

Element Info

Folio Root

Name:
Folio Root

Description:

Removable:
Prompt

Children moveable:
 Yes No

Allow item creation:
 Yes No

Allow node creation:
 Yes No

Maximum items:
100

Maximum nodes:
100

Content profile:

Important: The element information is unique to the folio template, and not to the content item associated with the template. A single content item may be associated with several different folio templates, and the element information about that item may be different in each template. It is important to remember that if you change the element information in one template, it does not change in another.

Use the following fields to specify the information for each element in the template.

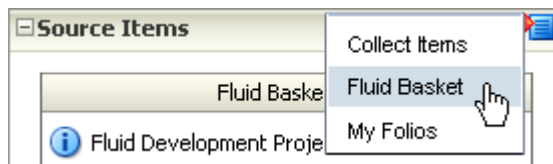
Information	Description
Name	The name given the element, as displayed in the folio hierarchy. Displayed for all elements.
Description	A description of the element to help identify its intended use. For example, a slot named <i>Field Report</i> could have a description of <i>Information gathered at the scene by first responders</i> . Displayed for all elements.

Information	Description
Attributes (slots and items)	<p>Allowable uses and limitations of an element. Attributes are identical for slots and items, but differ for nodes.</p> <p>Default attributes for slots and items:</p> <ul style="list-style-type: none"> ■ Allow empty: The slot can be empty. ■ Lock content: Items cannot be deleted from the slot. ■ Removable: The slot can be deleted. ■ Allow external: An external link can be specified. ■ Restrict formats: Specifies what content item formats are allowed to populate the slot. Formats are identified by the file extension. Syntax for this field is a comma-delimited list of formats as specified in the <i>Map To Format</i> information associated with each file extension in the Content Server Configuration Manager. For example, if you want to allow only HTML and text files in the slot, you would enter <i>text/html,text/plain</i>. ■ Allow folio: Specifies whether or not a folio can populate the slot. ■ Content profile: Specifies the content profile used when adding an item by search or check in. ■ Clone Item: Specifies whether or not the associated item is cloned. A cloned item is copied and checked into Content Server as a new item at the time a folio based on the template is created. If an item is not cloned, then the original content item is associated with any folio created using the template.
Attributes (nodes)	<p>Default attributes for nodes:</p> <ul style="list-style-type: none"> ■ Removable: The node can be deleted. ■ Children moveable: Items, slots, and subnodes can be moved within the folio hierarchy. ■ Allow item creation: An item can be created within the node. ■ Allow node creation: Subnodes can be created within the node. ■ Maximum Items: The total number of items that can be created within the node. ■ Maximum Nodes: The total number of nodes that can be created within the node. ■ Content Profile: Specifies the content profile used when adding an item by search or check in.
Content ID	<p>The unique identifier of a content item used by Content Server.</p> <p>Displayed for items and slots. Slots display this attribute as blank.</p>
Create Date	<p>The date a content item was created.</p> <p>Displayed for items and slots.</p>
last modified	<p>The date changes were last made to the content item.</p> <p>Displayed for items and slots.</p>
link	<p>The URL of the hyperlink.</p> <p>Displayed for hyperlinks only.</p>

A.5.1.4 Source Items Tray

The Source Items tray provides the ability to collect items checked into Content Server for use in the folio. The default allows you to search Content Server and display a

listing of search results in the tray, from which you can select items to insert into the folio. This is useful if you have multiple items from a search result that you want included in your folio.



Additionally, the selection menu in the Source Items tray heading allows you to choose a content basket to display in the tray. This is useful if you have previously collected items in a content basket, and now want to add them to a folio.

A.5.1.5 Properties Tab

The Properties tab of the Create/Edit Folio Template page allows a system administrator to define the default folio template properties and enable a folio template. The main sections of the Properties tab are Template Properties and Folio Default Properties.

Form Element	Description
Template Enabled	Specifies whether or not the template is enabled and available to the user when creating an advanced folio.
Checkin Profile	Specifies the profile to be used when a user checks in a newly created folio based on this template. Specifying a profile here suppresses the option for the user to select one on check in.
Viewer	Specifies the viewer to use for the View Folio page.
Renderers	Specifies what options are available in the Renderers menu on the Edit Folio page. Options are: <ul style="list-style-type: none"> ▪ zip rendition ▪ pdf rendition ▪ XML rendition
Archive revised folio content	Enabling this causes the current revisions of folio content to be compressed into a flat file and stored as the native file of the folio revision each time it is locked or a snapshot is made. This would allow for a system administrator to recover a content item from a previous revision of a folio, even if the content item was subsequently remove from Content Server. This is disabled by default.
Clone Folio Items	Enabling this causes any content items you specify in the template to be cloned when a folio is created from the template. Cloning an item causes a copy to be made and checked into Content Server as a new content item. If this is not enabled, any content item specified in the template is associated with the folio using the existing content ID.

Form Element	Description
Default Folio Profile	Specifies the profile to be used for searching and checking in when adding content items to the folio.
Allow Node Creation	Specifies if nodes can be created.
Allow Item Creation	Specifies if items can be created.
Allow Nested Folios	Specifies if other folios can be added as an item to the folio.

Form Element	Description
Allow External Items	Specifies if external links can be added to the folio.

A.6 Content Tracker Interface

This section describes the Content Tracker interface screens.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

This section covers the following topics:

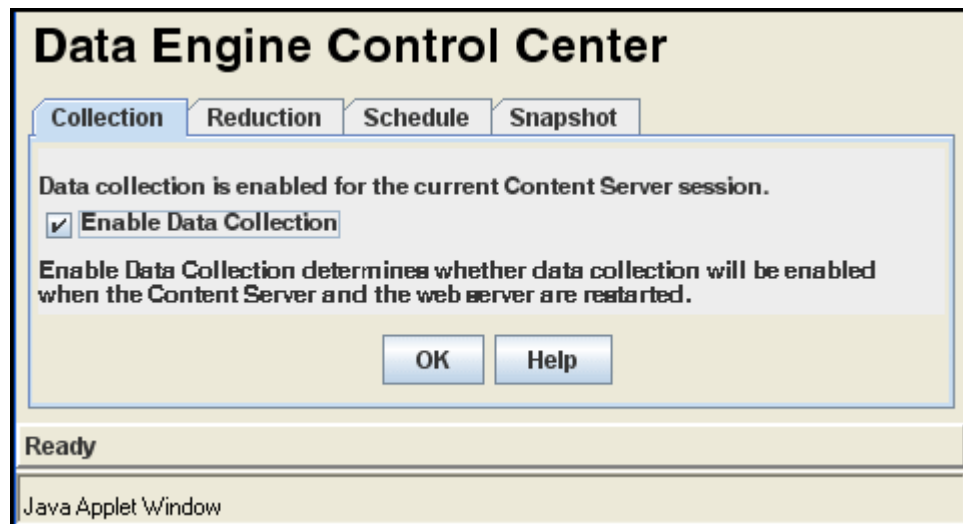
- ["Data Engine Control Center"](#) on page A-154
- ["Content Tracker Report Generator Main Page"](#) on page A-164

A.6.1 Data Engine Control Center

The Data Engine Control Center is the applet interface that provides access to the user-controlled functions of the Data Engine. You access the applet by clicking the Content Tracker Administration link on the Administration tray. Then you click the Data Engine Control Center icon on the resulting page.

Through the interface, you can:

- Enable and disable data collection.
- Start and stop data reduction.
- Monitor progress of data reduction.
- Delete data.
- Schedule data reduction to run automatically.
- Enable activity metrics and collect search relevance information about managed content accesses.
- Add, configure, and edit service calls to be logged.
- Define specific event details that are to be logged for a given service.



This section covers the following topics:

- ["Collection Tab"](#) on page A-155
- ["Reduction Tab"](#) on page A-156
- ["Schedule Tab"](#) on page A-157
- ["Snapshot Tab"](#) on page A-158
- ["Services Tab"](#) on page A-161
- ["Extended Services Tracking Screen"](#) on page A-162
- ["Field Map Screen"](#) on page A-163

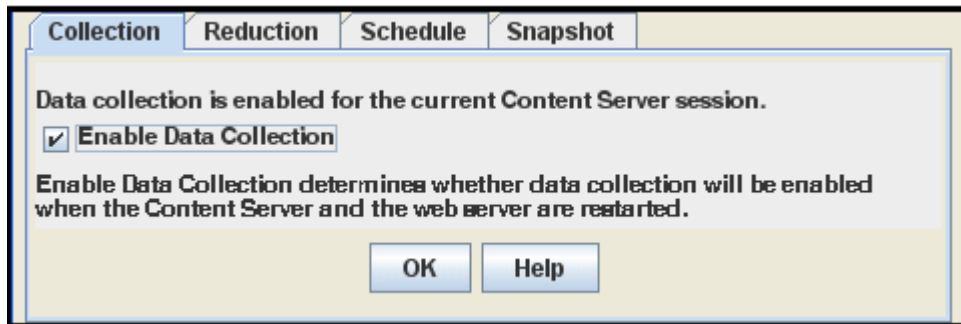
A.6.1.1 Collection Tab

Use the Collection tab to enable web traffic data collection for a Content Server session. When data collection is enabled, the Content Tracker Data Engine collects and writes raw data to logs located in the /data directory (`<cs_root>/data/contenttracker/data/`). These logs provide part of the input used in the reduction process and will accumulate as long as the collection process is properly enabled. Data accumulates whether or not the reduction process is performed.

Note: Changing the status of the check box does not immediately enable or disable data collection. The Content Server and the web server must be restarted before any changes will be in effect. Look carefully at the sentence above the check box to determine whether data collection is enabled.

When enabled, the sentence reads "Data collection is enabled..."

When disabled, the sentence reads "Data collection is not enabled..."

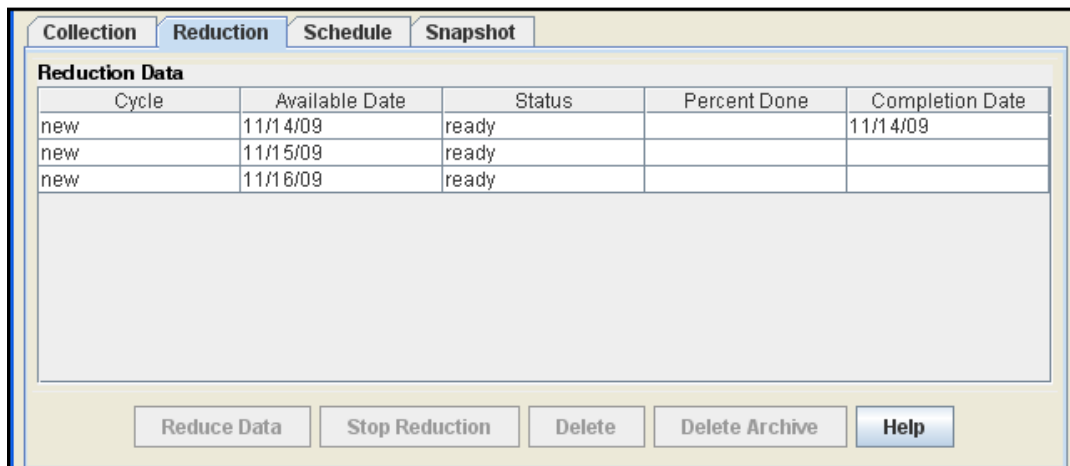


Element	Description
Enable Data Collection check box	Selecting this check box enables data collection for the current Content Server session.
OK button	Implements the current data collection setting.
Help Button	Opens the online Help system.

A.6.1.2 Reduction Tab

Use the Reduction tab to start and stop data reduction manually, to monitor progress of a data reduction operation, and to delete the raw data files from which the table rows are generated. During reduction, data is written to the appropriate tables and creates a log file that reflects the reduction process. These log files reside in the log/ directory (<cs_root>/data/contenttracker/logs/).

Each line item on the Reduction tab is raw (input) data that is gathered and organized on a daily basis. The raw data is the unprocessed data collected from the web server filter plugin. This data is ultimately used as input to the Content Tracker reduction process.



Element	Description
Enable Data Collection check box	Selecting this check box enables data collection for the current Content Server session.
OK button	Implements the current data collection setting.
Help Button	Opens the online Help system.

Element	Description
Enable Data Collection check box	Selecting this check box enables data collection for the current Content Server session.
OK button	Implements the current data collection setting.
Help Button	Opens the online Help system.
Cycle column	Shows the state of the input data. new = the input data for an available date has not been reduced. After input data has been reduced, the cycle changes to 'recent.' Exception: If input data for the current system date is reduced, the cycle continues to display the data as 'new.' recent = the input data has been reduced but has not been moved to archive. The number of recent sets is user configurable. The default is sixty days (sets) of input data that have been most recently run through data reduction and, therefore, will be displayed as 'recent.' archive = the input data has been reduced and has been moved out the cycle 'recent.' Data will remain in archive cycle until deleted.
Available Date column	Shows the date for which and on which the input data was collected.
Status column	Shows the status of the reduction data. ready = the input data is available to be reduced. running = the selected input data is being reduced. archiving = the input data is being moved from 'recent' to 'archive' cycle
Percent Done column	Shows the progress of the data reduction process. Displays only while the input data is 'running.'
When Finished	Shows the date and time when the data reduction process was completed.
Reduce Data button	Pressing this button initiates the data reduction process on the selected input data.
Stop Reduction button	Pressing this button terminates a running data reduction process.
Delete button	Pressing this button deletes the selected input data.
Delete Archive button	Pressing this button deletes the input data that is in the archive cycle.

The **Delete** and **Delete Archive** buttons enable users to eliminate raw data logs. Records are 'deleted' from the primary tables when they are moved to the archive tables. Users are responsible for deleting records from the archive tables. If the raw data is deleted using the Delete and Delete Archive buttons, any reduced data in the tables will not be affected.

A.6.1.3 Schedule Tab

Use the Schedule tab to enable automatic data reduction. Using the Schedule tab, reduction runs can be configured to run on a scheduled basis. The recommended policy is to schedule reduction runs for each and every day.

Element	Description
Scheduling Enabled check box	Selecting this check box enables data reduction to run automatically.
Days to Run check boxes	Selecting one or more check boxes sets the days when the data reduction will run.
Time to Run fields	Used to select the hour and minute to set the time when the data reduction will run.
OK button	Saves the current reduction schedule settings.
Help button	Opens the online Help system.

A.6.1.4 Snapshot Tab

Use the Snapshot tab to selectively enable and automatically assign specific activity metrics to pre-defined, custom metadata fields.

The fields on the Snapshot tab are case-sensitive. Therefore, it is important that all field values are spelled and capitalized correctly. Content Tracker uses the following error checks to validate each enabled activity metric field value:

- Content Tracker checks the DocMeta database table to ensure that the custom metadata field actually exists.
- Content Tracker ensures that the custom metadata field is of the correct type. That is, the Last Access metadata field must be of type Date and the Short / Long Access Count fields must be of type Integer.
- Content Tracker checks to explicitly exclude the dID metadata field.

Note: If you make any changes to the configuration, all of the content items are updated during the next reduction cycle.

Element	Description
Enable Snapshot post-processing check box	<p>Selecting this check box activates the activity metrics functions and enables users to individually select and assign functions to applicable metadata fields. When you enable the snapshot function, the metadata auto-load occurs after the next reduction cycle. By default, the snapshot function is disabled.</p> <p>Before you activate the snapshot function, you must decide which custom metadata fields will be associated with each of the enabled activity metrics. Also, the custom metadata fields must already exist and must be of the correct type.</p> <p>The search relevance metadata field associated with the Last Access metric must be of type Date. The search relevance metadata fields associated with the Access Count metrics must be of type Integer.</p>
Enable Metadata Field updates check box and corresponding field	<p>Selecting this check box activates the associated search relevance metadata field and the Autoload check box. In the Field field, enter the internal name of the metadata or custom metadata field to be linked to this activity metric.</p> <p>When content is checked in, the Last Access field in Content Server's DocMeta database table is initially empty. After a data reduction has been performed, the Last Access field is updated with the most recent date and time of access, or with the date and time of checkin if no accesses have occurred. But, some applications need to have the Last Access field contain a valid value at all times. You can do this using the Default Value field, the Autoload option, or the Batch Loader.</p> <p>For the Last Access metric, Content Tracker only checks for accesses on the reduction date. As a result, there may be gaps in the record.</p>

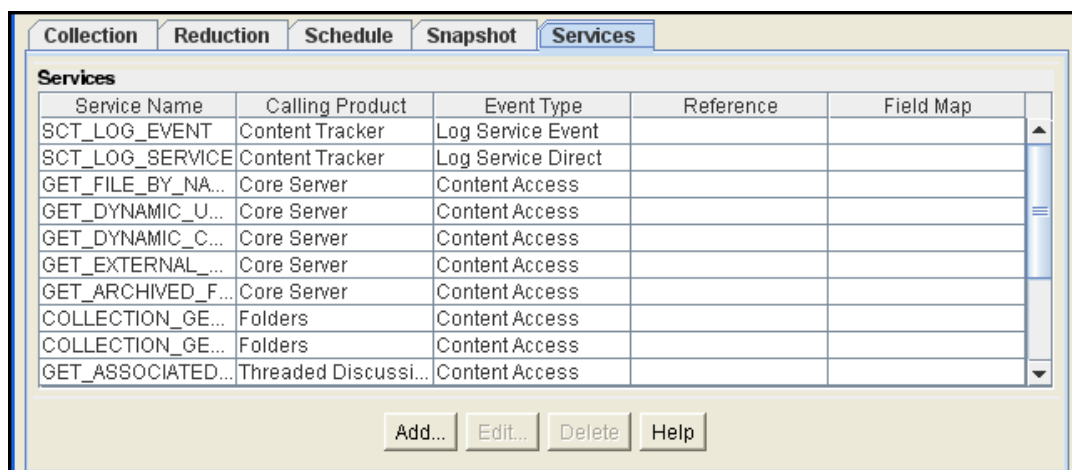
Element	Description
Autoload check box	<p>Selecting this check box and clicking the OK button invokes a query that, by default, uses the current date and time to populate any empty Last Access metadata fields in Content Server's DocMeta database table.</p> <p>If you use the Autoload option, be aware of the following operational considerations:</p> <ul style="list-style-type: none"> ■ Autoload is primarily intended for use with applications that count checkin operations as an access activity. ■ The effect of Autoload is to backfill the current date and time for all existing content that does not already have a date value in the Last Access field. Any content checked in after the Last Access field is defined should have the field automatically populated with the checkin date and time as a default value. ■ Running Autoload may affect every record in Content Server's DocMeta database table. therefore, you should use this option sparingly. ■ The only DocMeta records that are affected are those where the Last Access metadata field is empty (NULL). ■ Autoload is persistent. The state of the Autoload check box is saved along with all the other Snapshot settings. To ensure that you do not inadvertently use this option, you should clear the Autoload check box and re-save your activity metrics field settings immediately after performing the autoload function. ■ Content Tracker does not invoke Content Server's indexer after Autoload completes the update. You must decide when to rebuild the collection. ■ By default, the Autoload query sets the Last Access metadata field to the current date and time. However, you may customize the query to meet the needs of your application.
Enable Short / Long Access Count updates check boxes and corresponding Fields / Intervals	<p>Selecting these check boxes activates the associated search relevance metadata fields and time interval fields.</p> <p>In the Field field(s), enter the internal name(s) of the metadata field(s) to be linked to the activity metric(s). For example, xShortAccess or xLongAccess.</p> <p>Specify the interval in days for the activity metric count(s).</p> <p>The two Access Count metrics differ only in the accounting period. For example, last 30 days versus last 90 days, last week versus last year, etc. Also, the time intervals specified in the activity metrics are independent of each other. For example, you can set the number of days in the first interval period (Short Access) to more than those in the second interval period (Long Access).</p> <p>Access counts are only tabulated for dates that have been reduced. If you do not reduce data for one or more days, the accesses on those days are not logged or counted.</p> <p>You should not reduce data in random order because the Access Count metrics are affected by the reduction date order.</p>

Element	Description
OK button	Saves the snapshot configuration and updates Content Tracker's sct.cfg file with the current settings in the activity metrics fields. If the Autoload check box is selected, immediately after the activity metrics settings are saved, the Last Access field is updated in the DocMeta database table.
Help Button	Opens the online Help system.

A.6.1.5 Services Tab

Use the Services tab to log additional Content Server service calls along with data values relevant to the associated services. The Services tab enables you to conveniently add or configure service entries and, optionally, their corresponding field map ResultSets in the service call configuration file (SctServiceFilter.hda). Every service that you want to be logged must have a service entry in the SctServiceFilter.hda file.

Note: The Services tab is not displayed if Content Access Only mode is ON (the default). The Content Access Only mode is one of Content Tracker's optimization functions that ensure information tracking processes are performed as efficiently as possible. This operating mode determines what types of information is collected. When enabled (the default), only content access events are recorded which excludes content searches and user profile information.



Element	Description
Services list	Provides the names and result set values of each service logged by Content Tracker.
Add button	Opens the Extended Services Tracking Screen .
Edit button	Opens the Extended Services Tracking Screen . Applicable fields are populated with the current result set values.
Delete button	Deletes the selected service.
Help button	Opens the online Help system.

A.6.1.6 Extended Services Tracking Screen

Use the Extended Services Tracking screen to configure (add, edit, or delete) the service entries contained in the ServiceExtraInfo ResultSet that is included in the SctServiceHandler.hda file. To access this screen, click the **Add** button on the [Services Tab](#).

Content Tracker does not perform error checking (such as field type or spelling verification) for the extended services tracking function in the Data Engine Control Center. Errors resulting from field name conflicts are not generated until you perform a reduction. The fields on the Extended Services Tracking screen are case-sensitive. Therefore, be careful to enter proper service entry field values, especially service call names. Ensure that all field values are spelled and capitalized correctly.

The ServiceExtraInfo ResultSet in the SctServiceHandler.hda file contains a service entry for each service to be logged. If you select an existing service entry from the Service Name field, the applicable fields will already be populated with the existing service entry's field values. However, if you are adding a service, the new service entry will use the values you enter for the Service Name field, Calling Product field, Event Type field, Reference field, and Field Map field.

Element	Description
Service Name field	The name of the service to be logged. For example, GET_FILE. If the line for the service name is not included in the service entry, the service is not logged.
Calling Product field	An arbitrary string that will be copied to the SctAccessLog table when the service is logged. It is generally set to "Core Server" for all standard Content Server entries.
Event Type field	An arbitrary string that will be copied to the SctAccessLog table when the service is logged. It is generally set to "Content Access" for all standard Content Server entries.
Reference field	Used to set the sc_scs_reference field in the SctAccessLog table. If blank, the internal getReference logic is used.

Element	Description
Field Map field	<p>The name of the field map ResultSet that is added to the SctServiceFilter.hda file. This field is only required if you plan to use the extended service call tracking function. This function enables you to log arbitrary DataBinder field information to one or more of the general purpose columns in the SctAccessLog table.</p> <p>To help you design your field map, a configuration variable can be set that writes out the object when the service is called. This enables you to see what data is available at the time the event is recorded.</p>
Field Name/Field Location/Column Name list	Lists each set of data field, location, and table column names associated with a field map ResultSet. The Field Map Screen field values are used to populate this list.
Add button	Opens the Field Map Screen .
Delete button	Deletes the selected field map ResultSet.
OK button	Saves the field values and adds or updates the service entry to the ServiceExtraInfo ResultSet. Clicking OK will also add the field map ResultSet to the SctServiceFilter.hda file if you have created one. Refer to the " Field Map Screen " on page A-163.
Cancel button	Closes the Extended Services Tracking screen without saving any changes.
Help button	Opens the online Help system.

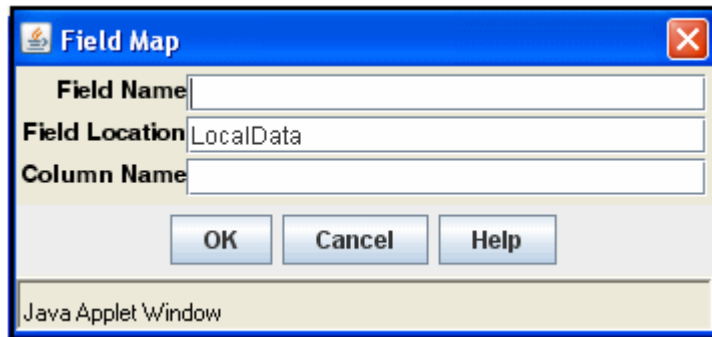
A.6.1.7 Field Map Screen

Use the Field Map screen to configure the field map ResultSets that are linked to the service entries and included in the SctServiceHandler.hda file. To access this screen, click the **Add** button on the [Extended Services Tracking Screen](#).

Content Tracker does not perform error checking (such as field type or spelling verification) for the extended services tracking function in the Data Engine Control Center. Errors are not generated until you perform a reduction. The fields on the Field Map screen are case-sensitive. Therefore, be careful to enter proper field and column names. Ensure that all field values are spelled and capitalized correctly.

To use the extended service call tracking function, you must map a service entry to a field map ResultSet in the SctServiceHandler.hda file. The value in the Field Map field on the [Extended Services Tracking Screen](#) is the name of the field map ResultSet.

Tip: Content Tracker provides a debugging configuration variable that, if enabled, configures the service handler filter to write out the service DataBinder objects into dump files (SctDebugServiceBinderDumpEnable). These can be used as diagnostic tools when you are developing field map screens. The dump files enable you to see what data is available at the time the particular service events are recorded.



Element	Description
Field Name field	The name of the data field in the Content Server service DataBinder whose data values are logged to a general purpose column in the SctAccessLog table. The target column is specified in the Column Name field.
Field Location field	The section in the Content Server service DataBinder where the data field to be logged is located: Three values are supported: LocalData (the default value) Environment BinderResultSet: Returns a comma-delimited string that contains all the values in the ResultSet. Due to space limitations in the SctAccessLog table, this value is only useful for small ResultSets. The size is restricted to 255 characters, allowing for the comma's, etc.) To accommodate more than 255 characters, you can enlarge/redefine the SctAccessLog table columns using standard database tools. For example, if you open up extField_3 to 2047, then it will hold the equivalent amount of data. However, most databases have page size limitations that you need to consider. Also, there is the practical consideration in that SQL does not parse strings efficiently.
Column Name field	The specific general purpose column in the SctAccessLog table where data values from a specified DataBinder field are logged. The data field is specified in the Field Name field.
OK button	Saves the values and adds the field map ResultSet to the SctServiceFilter.hda file.
Cancel button	Closes the Field Map screen without saving the list of DataBinder field names and their corresponding SctAccessLog column names.
Help button	Opens the online Help system.

A.6.2 Content Tracker Report Generator Main Page

The Content Tracker Reports component provides pre-defined queries organized into several main categories. These pre-defined reports are designed to answer the most common questions about system activity. The individual reports provide drill-down reports based on applicable criteria. The Content Tracker Report Generator main screen is accessed by clicking the Content Tracker Reports link in the Administration tray.

Note: By default, Content Tracker is configured for maximum performance using several optimization functions. As such, Content Tracker collects and records only content access event data. This excludes information gathering on non-content access events like searches as well as the collection and synthesis of user profile summaries.

Because non-content event data is not gathered, various pre-defined report options are not displayed on the Content Tracker Report Generator main page. However, all of the pre-defined report options can be available if you reconfigure Content Tracker. This is done by changing the settings of the optimization functions in Content Server's config.cfg file or using the Component Manager's Update function.

Content Tracker Report Generator

Start Date:

End Date:

Rows per Page: 25 **Total Pages:** 10

Criteria:

Content Usage Reports

- Top Content
- Top Content Items by Format
- Top Access Modes by Format
- Top Content by Content Type
- Top Content Items by Author
- Top Content Items by User Role
- Top Content Items by User Type
- Top Content Items by Day

User Access Reports

- Content Items seen by user
- Users who have seen Content
- Users who have seen Security Group
- Users who have seen Content Items by Author
- Users who have seen Content Items by dID
- Users by User Type
- Users by User Role

Admin Reports

- Content Items not accessed in period
- Users not active in period

Custom Reports

Field	Description
Start Date field	Designates the beginning of a specific time period for records to be searched.
End Date field	Designates the end of a specific time period for records to be searched.

Field	Description
Date menu	<p>Yesterday: Enters the date of the previous day into the Start Date and today's date into the End Date fields.</p> <p>Latest Week: Enters the beginning and ending dates of the previous week into the Start Date and End Date fields.</p> <p>Latest Month: Enters the beginning and ending dates of the previous month into the Start Date and End Date fields.</p> <p>Latest Year: Enters the beginning and ending dates of the previous year into the Start Date and End Date fields.</p>
Rows per Page field	Specifies the number of results rows each page of the report can contain.
Total Pages field	Specifies the maximum number of results pages the report can contain.
Criteria field	Filters the search results and immediately accesses the applicable drill-down report. For example, if you are searching top content items by author, entering a specific author in the criteria field displays the drill-down report listing the content items authored by that user. Leaving this field blank causes the top level query to be executed, which provides a list of authors on the system.
Submit button	Generates and displays the selected report type.
Reset button	Clears the screen selections.
Help button	Opens the online Help system.
Top Content radio button	Lists the most frequently accessed content items in the system.
Top Content Items by Format radio button	Lists the most frequently accessed content items by application type (i.e., pdf or txt).
Top Access Modes by Format radio button	Lists the most frequently accessed content item application types (i.e., pdf or txt) by access mode.
Top Content by Content Type radio button	Lists the most frequently accessed content items by content item type.
Top Content Items by Author radio button	Lists the most frequently accessed content items by author.
Top Content Items by User Role radio button	Lists the most frequently accessed content items by user role.
Top Content Items by User Type radio button	Lists the most frequently accessed content items by user type.
Top Content Items by Day radio button	Lists the most frequently accessed content items for each day.
Search Summary radio button	Lists the types of searches that have been done and the search criteria.
Content Items seen by user radio button	Lists, by specific users, the number of content items most frequently opened by the indicated user.
Users who have seen Content radio button	Lists, by specific content item, the users who have accessed the content item.

Field	Description
Users who have seen Security Group radio button	Lists, by specific users, the content items most frequently accessed in specific security groups.
Users who have seen Content Items by Author radio button	Lists, by specific users, the content items most frequently accessed that have been authored (checked in) by specific users.
Users who have seen Content Items by dID radio button	Lists, by specific users, the content items most frequently accessed based on the internal content item identification numbers.
Users by User Type radio button	Lists, by specific users, the content items most frequently accessed based on the user type.
Users by User Role radio button	Lists, by specific users, the content items most frequently accessed based on the user role.
Content Items not accessed in period radio button	Lists the content items that have not been accessed followed by the content items most frequently accessed.
Users not active in period radio button	Lists the users that have not accessed content items followed by users that have accessed content items.
Authorization Failures by User radio button	Lists the users that tried unsuccessfully to access content items to which they did not have authorization privileges.
Login Failures radio button	Lists the users that tried unsuccessfully to log in to the system.

A.7 Content Categorizer Interface

This section describes the Content Categorizer interface screens.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

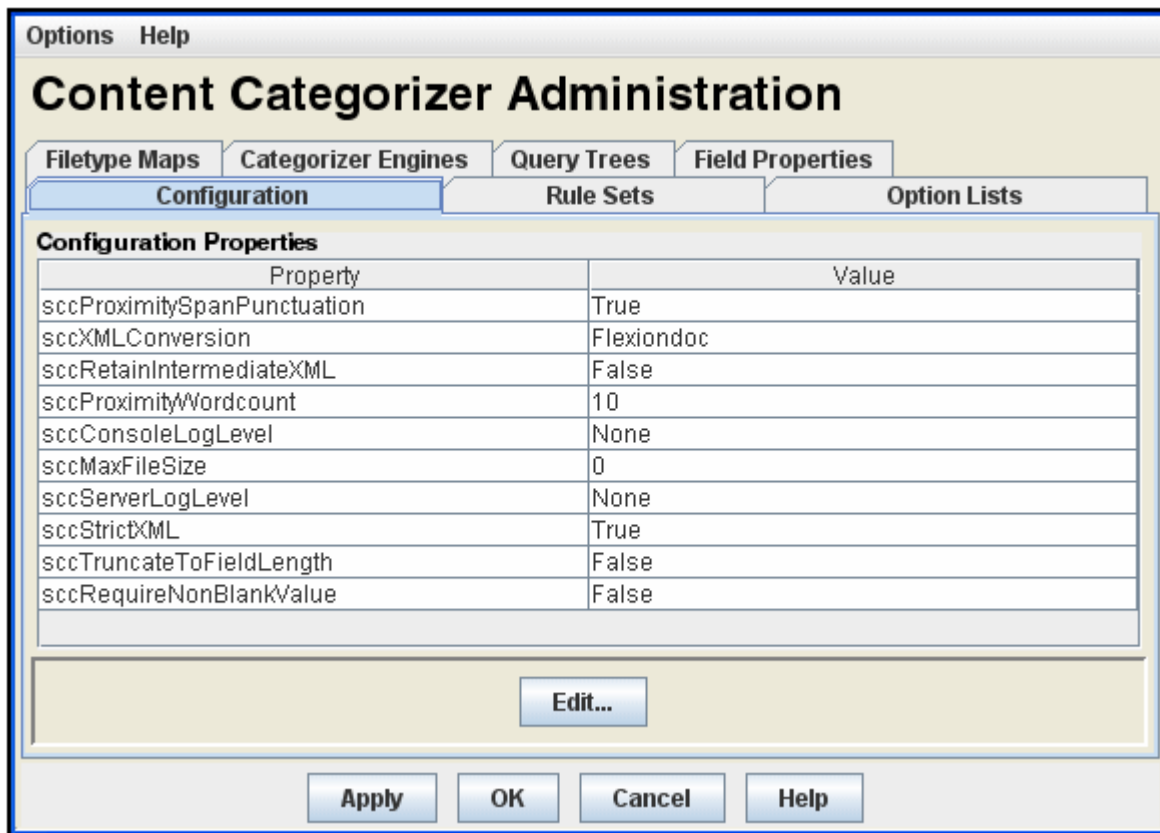
This section covers the following topics:

- ["Content Categorizer Admin Applet Page"](#) on page A-168
- ["Configuration Tab"](#) on page A-169
- ["Rule Sets Tab"](#) on page A-171
- ["Option Lists Tab"](#) on page A-175
- ["Filetype Maps Tab"](#) on page A-177
- ["Categorizer Engines Tab"](#) on page A-179
- ["Query Trees Tab"](#) on page A-181
- ["Field Properties Tab"](#) on page A-184
- ["Batch Categorizer Screen"](#) on page A-186
- ["Define Filter Screen"](#) on page A-188

- ["Show Columns Screen"](#) on page A-192
- ["Categorize Existing Screen"](#) on page A-192

A.7.1 Content Categorizer Admin Applet Page

The Content Categorizer Admin Applet is used to define the configuration and search rules for Content Categorizer, register categorizer engines, and build query trees. Work with the Content Categorizer Administration applet by selecting the applicable link below the Administration area.

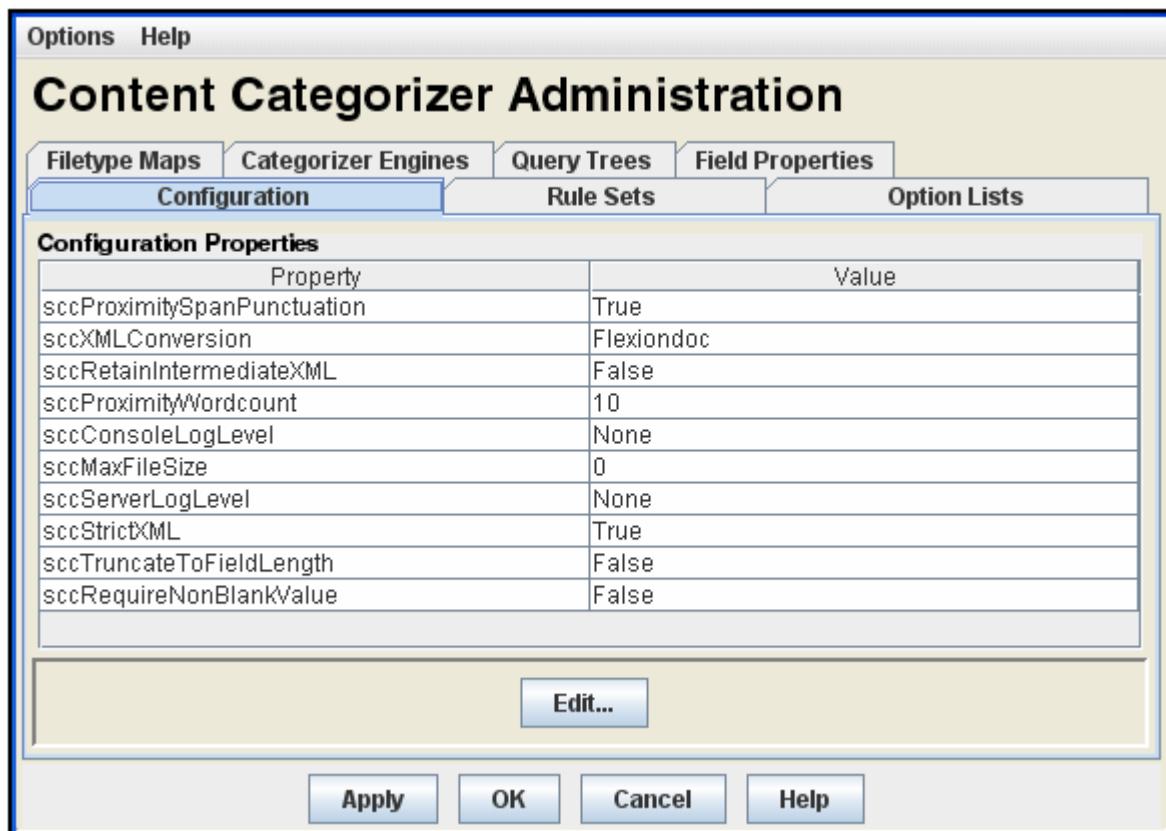


Element	Description
Options menu	<p>Save Tab Changes = Saves the settings on the current tab.</p> <p>Save All Tab Changes = Saves the settings on all tabs.</p> <p>Exit = Closes the CC Admin Applet screen.</p>
Help menu	<p>Help = Opens the online Help system.</p> <p>About Content Categorizer = Displays version information for Content Categorizer and Content Server.</p>

Element	Description
Tabs	The applet screen contains these tabs: <ul style="list-style-type: none"> ▪ Configuration Tab ▪ Rule Sets Tab ▪ Option Lists Tab ▪ Filetype Maps Tab ▪ Categorizer Engines Tab ▪ Query Trees Tab ▪ Field Properties Tab
Apply button	Saves the settings on the current tab.
OK button	Saves the settings on all tabs and exits the CC Admin Applet screen.
Cancel button	Exits the CC Admin Applet screen without saving any changes to settings.
Help button	Opens the online Help system.

A.7.2 Configuration Tab

The Configuration tab is used to set Content Categorizer runtime configuration settings.



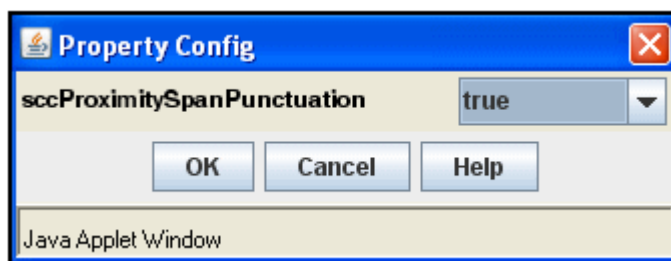
Element	Description
Property column	<p>Lists the properties that can be configured:</p> <p>sccXMLConversion = Name of the XML conversion method used to convert native documents into XML when operating in Interactive mode or Batch mode.</p> <p>sccRetainIntermediateXML = If true, all intermediate files (temporary files created during the categorization process of a content document) are retained and INFO trace entries in the server log map the temp files to the content. If false, all intermediate files are deleted after use.</p> <p>sccConsoleLogLevel = Level of execution trace information that will appear in the console window when Content Server is run as a foreground process, not started as a background service.</p> <p>sccServerLogLevel = Level of execution trace information that will appear in the content server log (accessed from the Server Logs link on the Administration page).</p> <p>sccProximityWordcount = Number of words that can lie between two keywords in an Option List search rule for the keywords to be considered "near" each other. Default value is 10. Used with \$\$NEAR\$\$ operator.</p> <p>sccStrictXML = Set to true. (This property should be set to false only if the XML includes have leading whitespace.)</p> <p>sccRequireNonBlankValue = If true, search results will not return blank metadata values if XML tags are empty. If false, search results will include blank metadata values if XML tags are empty.</p> <p>sccProximitySpanPunctuation = If true, leading and trailing punctuation is eliminated from strings during the normalization process. If false, punctuation is retained in strings. Used in Option List search rule.</p> <p>sccTruncateToFieldLength = If true, XML tag contents that are too long for their target metadata fields will automatically be truncated to fit. If false, XML tag contents that are too long for their target metadata fields will produce errors.</p>
Value column	Shows the current value for each property.
Edit button	Displays the Property Config screen for a selected property.

This section covers the following topics:

- ["Property Config Screen"](#) on page A-170
- ["Log Levels"](#) on page A-171

A.7.2.1 Property Config Screen

The Property Config screen is used to edit the value of the property selected on the Configuration tab.



Element	Description
Property field	Used to change the setting of the selected property. Either a text field or choice list, depending on the property.
OK button	Applies the change and closes the Property Config screen.
Cancel button	Closes the Property Config screen without applying changes.
Help button	Opens the online Help system.

A.7.2.2 Log Levels

The following log levels are listed in order from least to most log information:

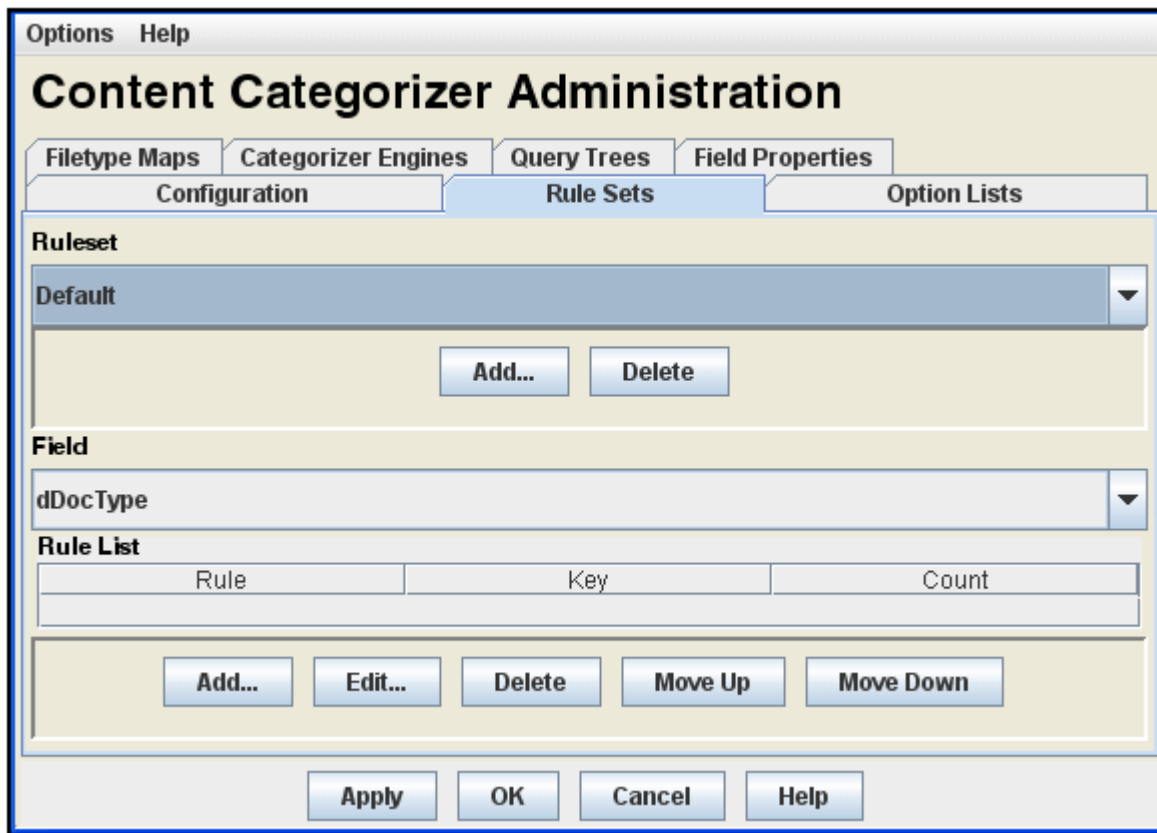
Setting	Level of Information
NONE	Fatal errors only.
ERROR	Operational errors.
WARNING	Actions that are well-defined but unusual.
INFO	All internal processes. Use for diagnosing problems with execution traces.

Follow these instructions to set log levels:

1. On the CC Admin Applet Configuration tab, select **sccConsoleLogLevel** or **sccServerLogLevel**.
2. Click **Edit**.
3. Select the desired log level from the drop-down list.
4. Click **OK**.
5. Click **Apply** to save the changes.

A.7.3 Rule Sets Tab

The Rule Sets tab is used to define the search rules that Content Categorizer uses to find metadata values. Named rulesets allows you to define multiple, independent rulesets for use with different types of content.



The ruleset to be used for a given content item is determined by a set of specifiers that includes the document type (doc, txt, xls, etc.).

Element	Description
Ruleset choice list	Lists the search rulesets currently defined. A defined ruleset contains multiple rules that apply to specific documents or a particular document type. If a specific ruleset is not defined for a given document or document type, the default ruleset is used. Rulesets are unitary and completely independent. One ruleset cannot be included in another ruleset and only one ruleset can be applied to a given document.
Add button (Ruleset)	Displays the Add Ruleset Screen , which is used to add a new ruleset.
Delete button (Ruleset)	Deletes the selected search ruleset. The default ruleset cannot be deleted.
Field choice list	Selects a metadata field for viewing or defining search rules. Only the metadata fields that allow search rules are included in the list.
Rule List	Lists the search rules currently defined for the selected metadata field. Content Categorizer runs the search rules in the order shown, from the top of the list to the bottom.
Rule column	Shows the type of search rule.
Key column	Shows the search key for the search rule.
Count column	Shows the count for the search rule.
Add button (Rule List)	Displays the Add/Edit Rule for Field Screen , which is used to add a new search rule.

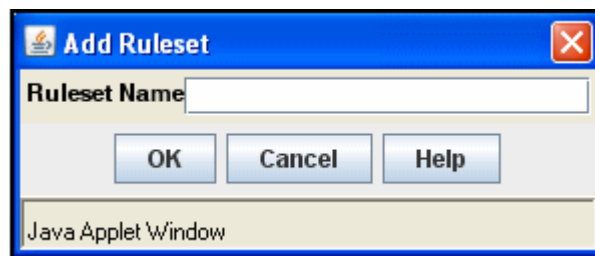
Element	Description
Edit button (Rule List)	Displays the Add/Edit Rule for Field Screen , which is used to edit the selected search rule.
Delete button (Rule List)	Deletes the selected search rule.
Move Up button (Rule List)	Moves the selected search rule up in the list.
Move Down button (Rule List)	Moves the selected search rule down in the list.

This section covers the following topics:

- ["Add Ruleset Screen"](#) on page A-173
- ["Add/Edit Rule for Field Screen"](#) on page A-173
- ["Key Field"](#) on page A-174
- ["Count Field"](#) on page A-175

A.7.3.1 Add Ruleset Screen

The Add Ruleset screen is used to define a new search ruleset on the Rule Sets tab. Access this screen by clicking the Add button on the Ruleset tab of the Content Categorizer Administration screen.

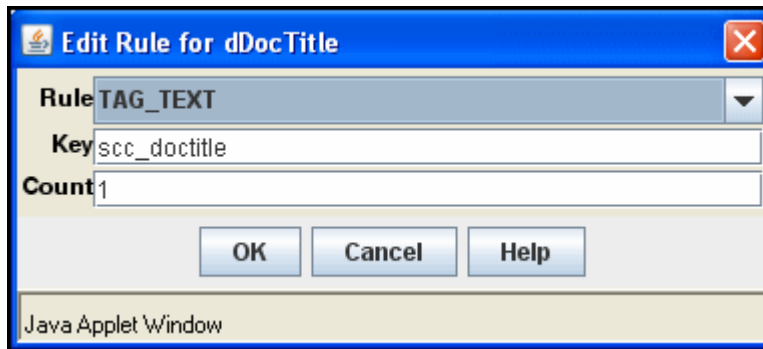


Important: Content Categorizer requires a non-empty rule set for any file type (.doc, .txt, .xml, etc.) it is called to examine. If no rules exist for a given file type, Content Categorizer will throw an exception. The easiest way to protect against this is to add at least one rule to the Default rule set. The Default rule set is used for all file types which do not have a custom rule set assigned.

Element	Description
Ruleset Name field	Used to add a ruleset name.
OK button	Applies the change and closes the Add Ruleset Screen .
Cancel button	Closes the Add Ruleset Screen without applying changes.
Help button	Opens the online Help system.

A.7.3.2 Add/Edit Rule for *Field* Screen

The Add/Edit Rule for Field screen is used to define a new search rule or edit the rule selected on the Rule Sets tab.



Element	Description
Rule choice list	Selects the type of search rule.
Key field	Defines the search key for the search rule. See "Key Field" on page A-174 for additional information.
Count field	Defines the count for the search rule. See Count Field for additional information.
OK button	Applies the change and closes the Add/Edit Rule for Field Screen .
Cancel button	Closes the Add/Edit Rule for Field Screen without applying changes.
Help button	Opens the online Help system.

A.7.3.3 Key Field

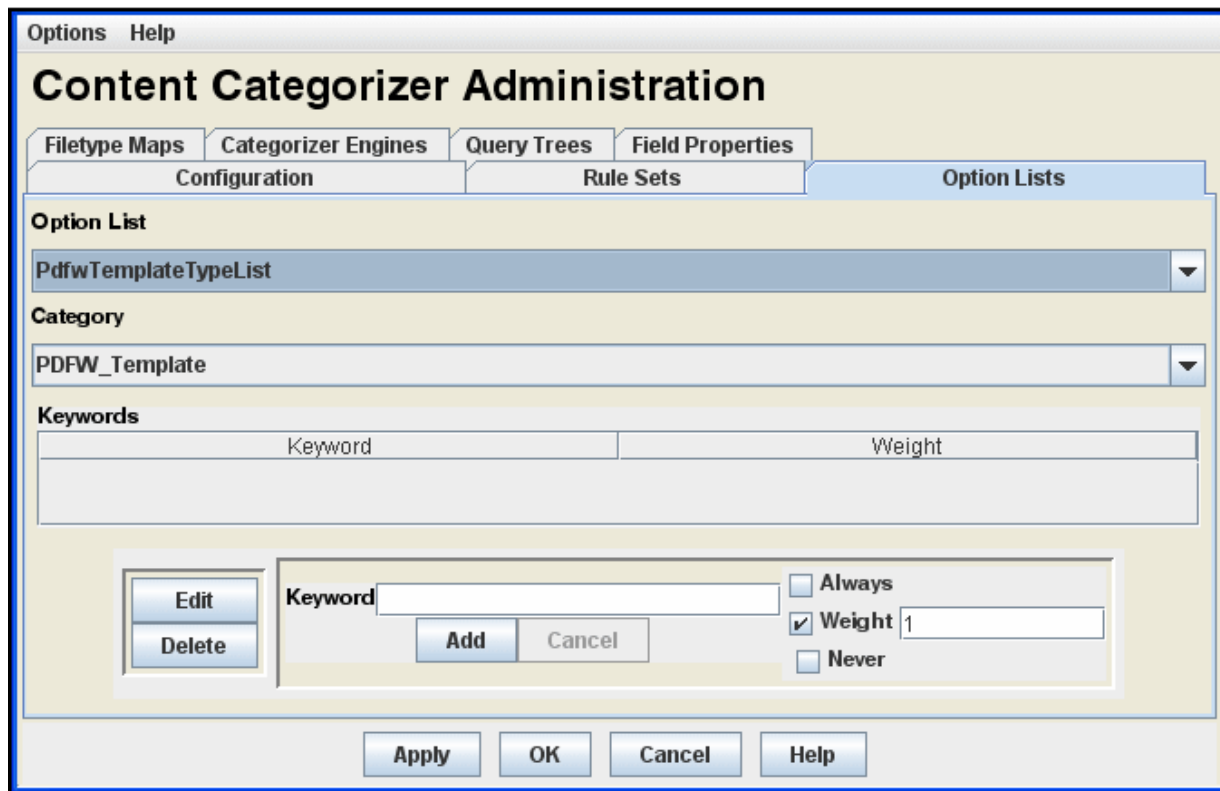
Search Rule	Key Description
TAG_TEXT	XML element [without angle brackets]
TAG_ALLTEXT	XML element [without angle brackets]
TEXT_REMAINDER	Text phrase
TEXT_ALLREMAINDER	Text phrase
TEXT_FULL	Text phrase
TEXT_ALLFULL	Text phrase
TEXT_NEXT	Text phrase
TEXT_ALLNEXT	Text phrase
FIRST_PARAGRAPH	XML element [without angle brackets]
FIRST_SENTENCE	XML element [without angle brackets]
OPTION_LIST	Option List name (must match the Option List name on the Option Lists Tab.)
CATEGORY	Categorization engine name (if more than one is defined in list of Categorizer Engines), followed by forward slash (/), followed by taxonomy name. For example: <i>EngineName/TaxonomyName</i>
FILETYPE	Not applicable for this rule; leave this field blank.

A.7.3.4 Count Field

Search Rule	Count Description
TAG_TEXT	The number of tags or text phrases that must be matched before the rule returns results. For example, a count of 4 will look for the fourth occurrence of the key. If only three occurrences of the key are found in the document, the rule fails.
TAG_ALLTEXT	
TEXT_REMAINDER	
TEXT_ALLREMAINDER	
TEXT_FULL	
TEXT_ALLFULL	
TEXT_NEXT	
TEXT_ALLNEXT	The default count of 1 returns the first occurrence of the key.
FIRST_PARAGRAPH	
FIRST_SENTENCE	Size threshold measured in percent. The first paragraph matching the key that is larger than the count percentage multiplied by the average paragraph size is returned. For example, if the count is set to 75 and the average paragraph size is 100 characters, the rule returns the first paragraph larger than 75 characters that matches the key. If the count is set to the default of 1, the rule is likely to return the first paragraph that matches the key.
OPTION_LIST	The number of elements that have their first sentences returned. For example, if the count is set to 3, the rule returns the first sentence from each of the first three elements that match the key.
CATEGORY	The minimum threshold score for the rule to return results. For example, if the count is set to 50, and the highest accumulated keyword score is 45, the rule fails.
FILETYPE	The minimum confidence level threshold for the rule to return results. For example, if the count is set to 50, and the highest-confidence category has a confidence level of 45, the rule fails.
FILETYPE	Not applicable for this rule; leave this field blank.

A.7.4 Option Lists Tab

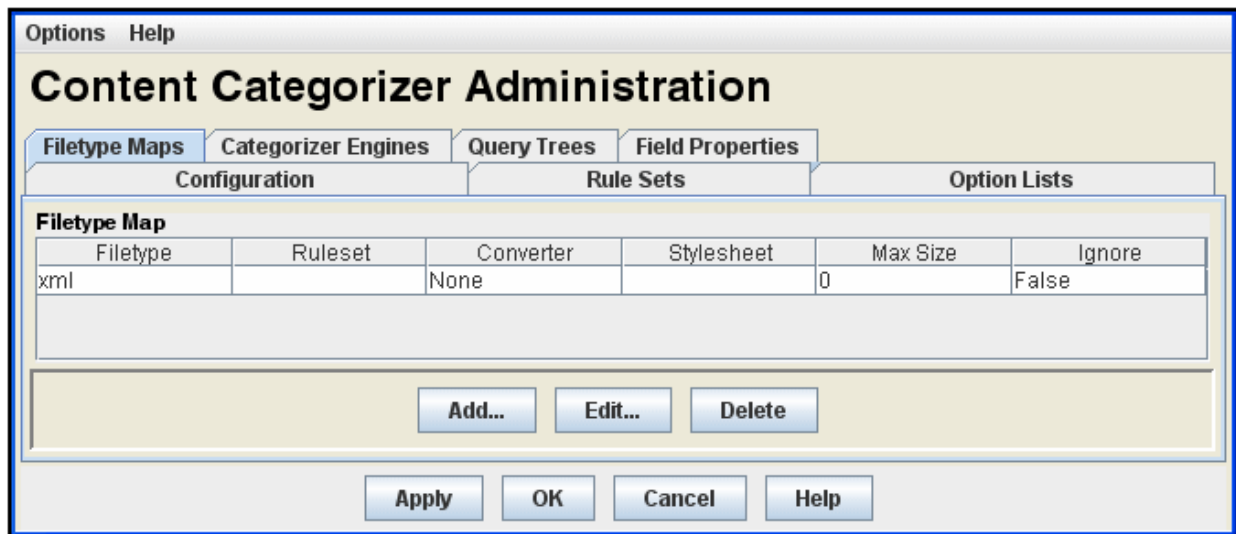
The Option Lists tab is used to define the keywords and weights for Option List search rules.



Element	Description
Option List choice list	Selects the option list. The list includes the Type (\$DocType) option list, plus option lists of all custom metadata fields that have an option list defined in the Configuration Manager.
Category choice list	Selects a value on the selected option list. Only the pre-defined values for the option list are included.
Keyword column	Lists the keywords associated with the selected category.
Weight column	Shows the weights assigned to each keyword.
Edit button	Changes the Add button to Update and enters the selected keyword and weight in the editing area.
Delete button	Deletes the selected keyword.
Keyword field	Used to add or edit a keyword.
Add/Update button	Adds a new keyword and weight value, or changes the selected keyword and weight value.
Cancel button	Changes the Update button to Add without saving changes to the selected keyword and weight value.
Weight options	Defines the weight assigned to the keyword. Always = If the keyword is found, the selected category will be returned as the suggested value, regardless of the score. Weight = This number multiplied by the number of occurrences of the keyword contributes to the score for a category. The category with the highest score is returned as the suggested value for the option list field. Never = If the keyword is found, the selected category will not be returned as the suggested value, regardless of the score.

A.7.5 Filetype Maps Tab

The Filetype Maps tab is used to create and modify a filetype map, which determines the specific converter, stylesheet and ruleset are used for a particular content item type (such as doc, txt, xls).



If no Filetype Map entry is defined for a particular content item, then the default ruleset, XML Converter, stylesheet, and maximum size values will be used.

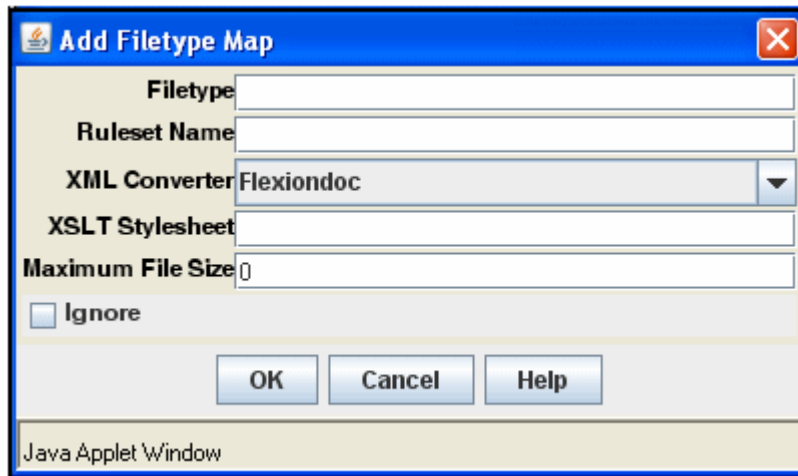
Element	Description
Filetype Map list	Lists the filetype maps currently defined.
Properties columns	Shows the following properties for a filetype map: <ul style="list-style-type: none"> Filetype name Ruleset Converter Stylesheet
Add button	Displays the Add/Edit Filetype Map Screen , which is used to add a filetype map.
Edit button	Displays the Add/Edit Filetype Map Screen , which is used to edit the selected filetype map.
Delete button	Deletes the selected filetype map.

This section covers the following topics:

- ["Add/Edit Filetype Map Screen"](#) on page A-177
- ["Filetype Mapping Operation"](#) on page A-179

A.7.5.1 Add/Edit Filetype Map Screen

The Add/Edit Filetype Map screen is used to define a new filetype map or edit the map selected on the Filetype Maps tab. The filetype map entries determine which XML converter, which XSLT stylesheet, and which ruleset are to be used for a particular filetype (doc, txt, xle, evt.).



Defining a filetype entry for a particular content file type makes possible special, content-specific processing alternatives. For example, you may use a custom ruleset for a particular content type, set a maximum file size, or direct Content Categorizer to ignore such files altogether.

Element	Description
Filetype field	Used to specify the filetype (such as doc, txt, xls). Enter \$\$NONE\$\$ to define a map entry for files with no filetype.
Ruleset Name field	Used to specify the ruleset to be applied. If no ruleset is specified, the default ruleset will be used.
XML Converter list	Lists the applicable XML converter. Three values are available: Flexiondoc, SearchML, and None. (None is available if the content is already in XML format or if it will be when the custom XSLT stylesheet completes its processing.) The default value for the XML converter is set as a configuration parameter.
XSLT Stylesheet field	Used to specify the file path (absolute or relative) of the XSLT stylesheet to be applied. XSLT stylesheets are stored in the <i>IntradocDir/custom/ContentCategorizer/stylesheets/</i> directory. Customized, content-specific XSLT translation stylesheets can be used as the back-end of the XML conversion. The selected stylesheet is used in a transformation operation after the XML conversion (if any) is complete. Stylesheets allow document properties and content to be isolated with the results extracted to a metadata field. The stylesheet to be used for a given content item is determined by a set of specifiers that includes the document type (doc, txt, xls, etc.). The default value for XSLT Stylesheet depends on the XML converter actually used. Flexiondoc uses flexion_to_scc.xsl and SearchML uses searchml_to_scc.xsl.
Maximum File Size field	Used to establish the maximum file size for a given file type (doc, txt, xls, etc.). Files of this type that exceed the maximum size will be ignored by Content Categorizer.
Ignore check box	Selected = directs Content Categorizer to disregard a particular file type (doc, txt, xls, etc.). Clear = directs Content Categorizer to consider files of this type.
OK button	Saves the settings in all the fields and exits the Add/Edit Filetype Map Screen .
Cancel button	Exits the Add/Edit Filetype Map Screen without saving any changes to settings.

Element	Description
Help button	Opens the online Help system.

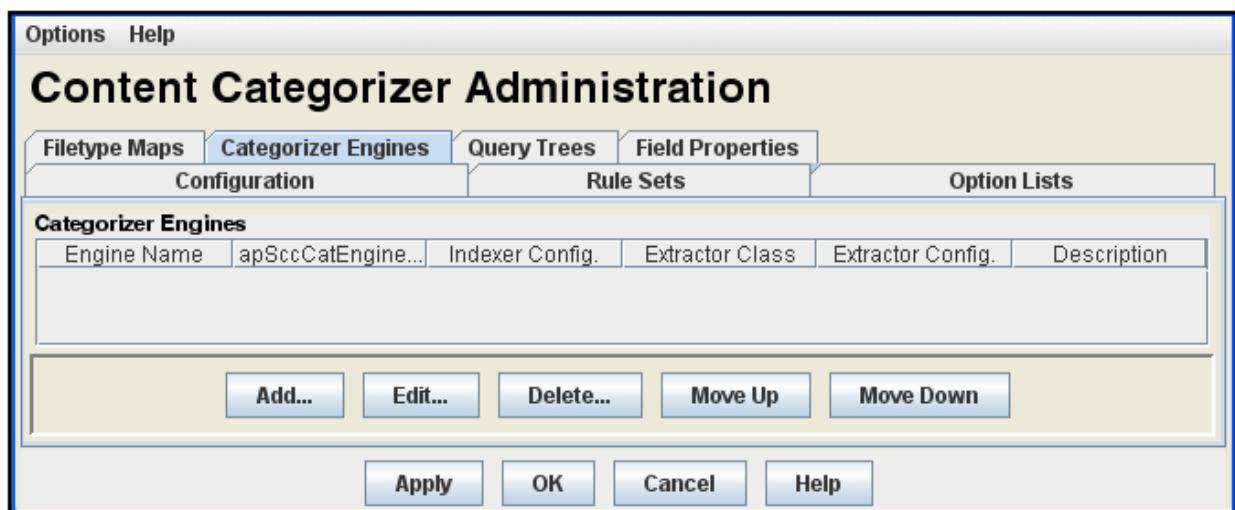
A.7.5.2 Filetype Mapping Operation

When a document is submitted to Content Categorizer for processing, the following shows the selection process to determine the applicable combination of a ruleset, XML converter, and XSLT stylesheet:

1. The check-in page is checked for certain Content Categorizer specific field values (sccRuleset, sccXMLConversion, and sccXSLTStylesheet). If the field exists and is non-blank, the contents of the field determine which ruleset, XML converter, or XSLT stylesheet is to be used.
2. If the form field is missing or empty, a filetype map entry for the content type is sought. If the map entry exists and if the relevant field is non-blank, the contents are used to determine which ruleset, XML converter, maximum file size, or XSLT stylesheet is to be used. If the map entry exists, and the Ignore check box is selected, Content Categorizer will not perform the XML conversion or apply any search rules.
3. If the form field is missing or empty and the filetype map entry is missing or the relevant field of the map entry is blank, the default ruleset is used, the maximum file size is used, the default XML converter defined in the configuration settings is used, and/or the default XSLT stylesheet is used.

A.7.6 Categorizer Engines Tab

The Categorizer Engines tab is used to register a third-party categorization engine for integration with Content Categorizer.



The values used to register an engine will normally be provided by the third-party categorization vendor.

Element	Description
Categorizer Engines list	Lists the Categorizer Engines currently defined.

Element	Description
Properties columns	Shows the following properties for a Categorizer Engine: <ul style="list-style-type: none"> Engine Name Indexer Class Indexer Configuration Extractor Class Extractor Configuration Description
Add button	Displays the Add Categorizer Engine screen, which is used to register a new engine.
Edit button	Displays the Edit Categorizer Engine screen, which is used to edit the selected engine.
Delete button	Deletes the registration for the selected engine.
Move Up button	Moves the selected engine up in the list.
Move Down button	Moves the selected engine down in the list.

This section covers the following topic:

- "[Add/Edit Categorizer Engine Screen](#)" on page A-180

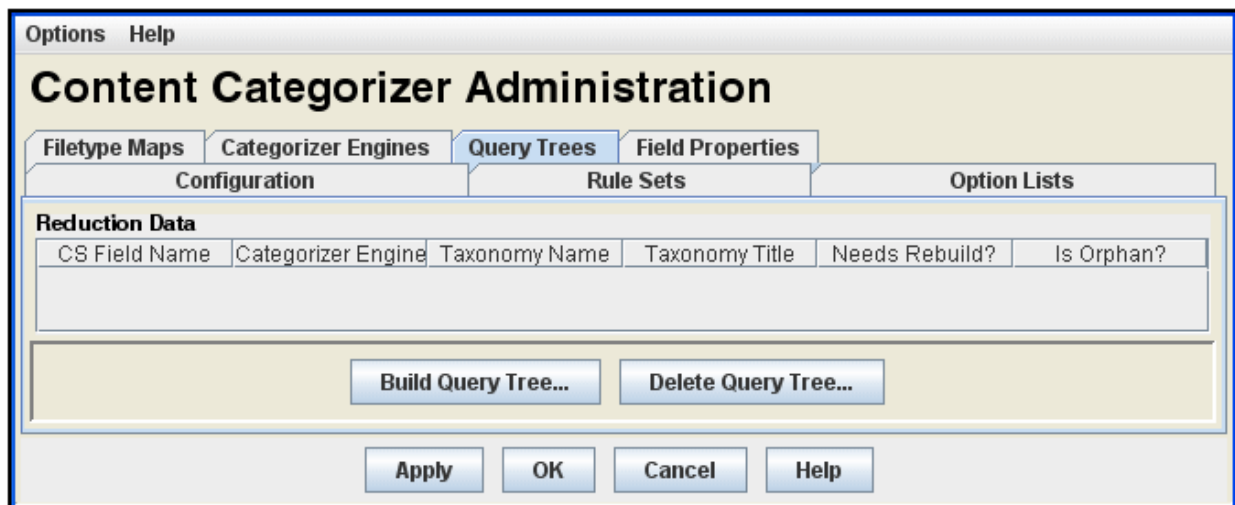
A.7.6.1 Add/Edit Categorizer Engine Screen

Element	Description
Engine Name field	A unique identifier for a categorization engine for which SCC has an adaptor module. This identifier is used in the Key field of a CATEGORY rule, for example, " EngineName / <i>TaxonomyName</i> ".
Indexer Class field	The name of the Java class in an SCC adaptor module that is used to ask the categorizer engine to categorize a given document or set of documents.
Indexer Configuration field	A string that is passed to the Indexer Class's setup() method. It is usually a comma-separated list of engine-specific initialization parameters.

Element	Description
Extractor Class field	The name of the Java class in an SCC adaptor module that is used to ask the categorizer engine for the set of categories in a given taxonomy.
Extractor Configuration field	A string that is passed to the Extractor Class's doExtract() method. It is usually a comma-separated list of engine-specific initialization parameters.
Description	A description of the categorization engine.
OK button	Saves the settings and exits the screen.
Cancel button	Exits the screen without saving changes to settings.
Help button	Opens the online Help system.

A.7.7 Query Trees Tab

The Query Trees tab is used to create a browsable hierarchy of categorized documents.



A query tree consists of:

- a "taxonomy cache" of machine-generated files located in *IntradocDir/data/contentcategorizer/taxonomies/<engine_name>/<taxonomy_name>*
- a "root link" on Content Server's Library page

Query trees are associated with a CATEGORY rule, and are generated from the taxonomy used in the CATEGORY rule definition. If you do not have a categorization engine defined, you will not be able to generate a Query Tree.

Element	Description
Query Trees List	Lists the Query Trees currently defined.

Element	Description
Properties columns	Shows the following properties and status for a Query Tree: <ul style="list-style-type: none"> CS Field Name Categorizer Engine Taxonomy Name Taxonomy Title Needs Rebuild? Is Orphan?
Build Query Tree button	Displays the Build Query Tree Screen .
Delete Query Tree button	Displays the Delete Query Tree Screen .

This section covers the following topics:

- "[Build Query Tree Screen](#)" on page A-182
- "[Delete Query Tree Screen](#)" on page A-183
- "[Needs Rebuild? and Is Orphan? Status](#)" on page A-184

A.7.7.1 Build Query Tree Screen

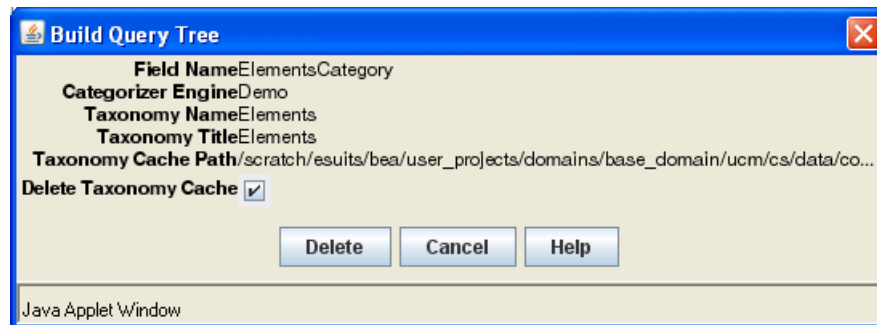
The Build Query Tree screen is accessed from the Query Trees tab.

Element	Description
Field Name	Name of the content information (metadata) field for which the CATEGORY search rule was defined.
Categorizer Engine	Name of the categorizer engine specified for the CATEGORY search rule that was defined for the metadata field.
Taxonomy Name	Name of the taxonomy specified for the CATEGORY search rule that was defined for the metadata field. In addition to being displayed as a property in the Query Trees list, this name is displayed and used: <ul style="list-style-type: none"> in the Content Server Library navigation hierarchy. in the Value field of the Query Link Definition screen in Web Layout Editor.

Element	Description
Taxonomy Title field	Title of taxonomy. In addition to being displayed as a property in the Query Trees list, this name is displayed and used: as a root link on the Content Server Library main page. in the Page Links list of the Web Layout Editor screen. in the Link Title field of the Query Link Definition screen in Web Layout Editor.
Taxonomy Description field	Description of taxonomy, which is used: under the root link on the Content Server Library main page. in the Description field of the Query Link Definition screen.
Taxonomy Cache Path	Path to the taxonomy cache: <i>IntradocDir/data/contentcategorizer/taxonomies/engine_name/taxonomy_name/</i>
Build Taxonomy Cache check box	Selected = Clicking OK builds (or rebuilds) the taxonomy cache. Clear = Clicking OK does not build (or rebuild) the taxonomy cache.
OK button	Saves the settings and builds (or rebuilds) the query tree.
Cancel button	Exits the screen without building (or rebuilding) the query tree and without saving changes to settings.
Help button	Opens the online Help system.

A.7.7.2 Delete Query Tree Screen

The Delete Query Tree screen is accessed from the Query Trees tab.



Element	Description
Field Name	Name of the content information (metadata) field for which the CATEGORY search rule was defined.
Categorizer Engine	Name of the categorizer engine specified for the CATEGORY search rule that was defined for the metadata field.
Taxonomy Name	Name of the taxonomy specified for the CATEGORY search rule that was defined for the metadata field. In addition to being displayed as a property in the Query Trees list, this name is displayed and used: <ul style="list-style-type: none"> in the Content Server Library navigation hierarchy. in the Value field of the Query Link Definition screen in Web Layout Editor.

Element	Description
Taxonomy Title field	Title of taxonomy. In addition to being displayed as a property in the Query Trees list, this name is displayed and used: <ul style="list-style-type: none"> as a root link on the Content Server Library main page. in the Page Links list of the Web Layout Editor screen. in the Link Title field of the Query Link Definition screen in Web Layout Editor.
Taxonomy Cache Path	Path to the taxonomy cache: <i>IntradocDir/data/contentcategorizer/taxonomies/engine_name/taxonomy_name/</i>
Delete Taxonomy Cache check box	Selected = Clicking Delete deletes the taxonomy cache. Clear = Clicking Delete does not delete the taxonomy cache.
Delete button	Deletes the selected taxonomy cache.
Cancel button	Exits the screen without building (or rebuilding) the query tree and without saving changes to settings.
Help button	Opens the online Help system.

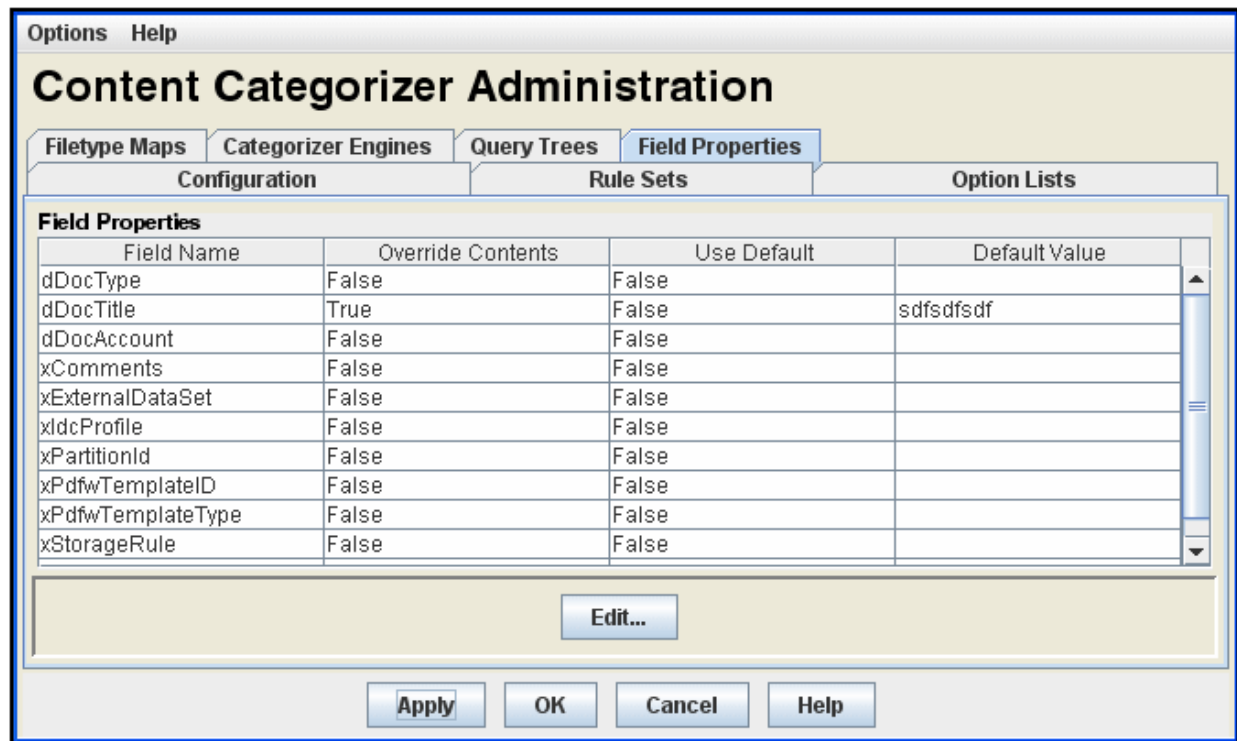
A.7.7.3 Needs Rebuild? and Is Orphan? Status

The following fields are used to indicate status.

Element	Description
Needs Rebuild? column	No indicates that the query tree is current. No action is required. Yes indicates that the taxonomy cache, the Library page link to the cache, or both, are old or do not exist. A rebuild of the query tree is necessary.
Is Orphan? column	No indicates that the query tree is not an orphan. No action is required. Yes indicates that the taxonomy cache, the Library page link to the cache, or both, are orphans; that is, there are no longer any CATEGORY rules that refer to them. Check the rule associated with the query tree.

A.7.8 Field Properties Tab

The Field Properties tab is used to set override and default properties that Content Categorizer will use during Batch mode.



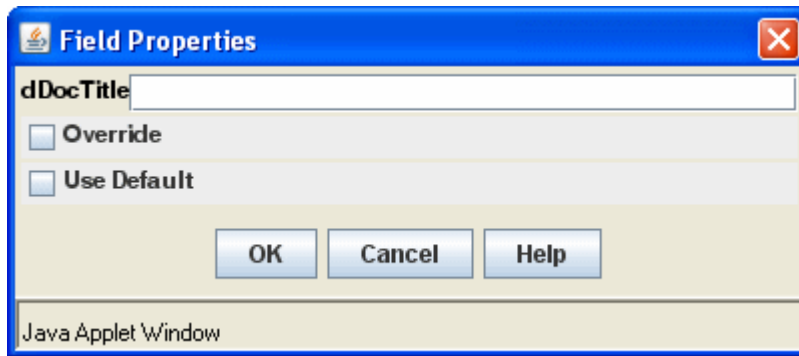
Element	Description
Field Properties List	Lists the standard and custom content information (metadata) fields and their property settings.
Field Name column	Lists the metadata fields that have values defined.
Override Contents column	Shows whether a field's contents will be overridden if the field already has an existing value. True = value returned by the categorization process will override an existing value. False = value returned by the categorization process will not override an existing value.
Use Default column	Shows whether a field's default value will be used if all rules fail (or are not defined) when the categorization process runs. True = default value will be used. False = default value will not be used.
Default Value column	Shows the default value for each field.
Edit button	Displays the Field Properties Screen .

This section covers the following topic:

- ["Field Properties Screen"](#) on page A-185

A.7.8.1 Field Properties Screen

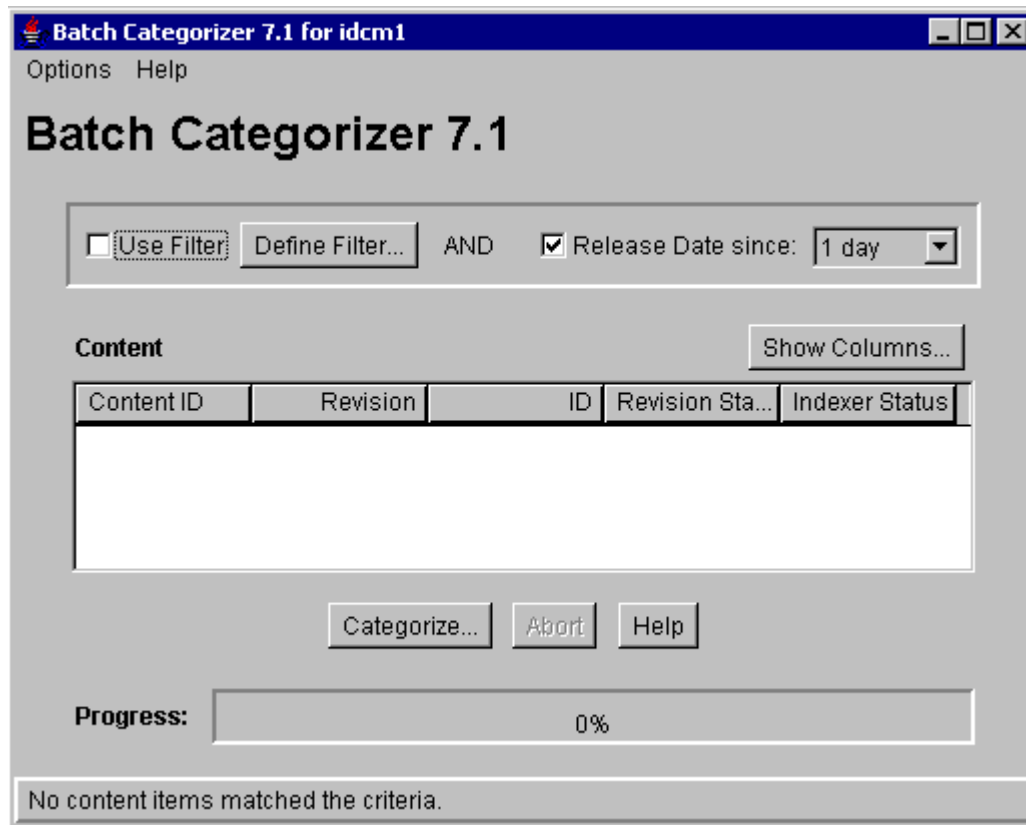
The Field Properties screen is used to edit settings for a field selected in the Field Properties list.



Element	Description
Metadata field	Used to change the default value of the selected field.
Override check box	Selected = sets Override to true. Clear = sets Override to false.
Use Default check box	Selected = sets Use Default to true. Clear = sets Use Default to false.
OK button	Applies edits and closes the Field Properties screen.
Cancel button	Closes the Field Properties screen without applying changes.
Help button	Opens the online Help system.

A.7.9 Batch Categorizer Screen

The Batch Categorizer utility is used to run Content Categorizer in Batch mode and is accessed by running the BatchCategorizer application, which is located in the `<cs_root>/data/contentcategorizer/bin/` directory.

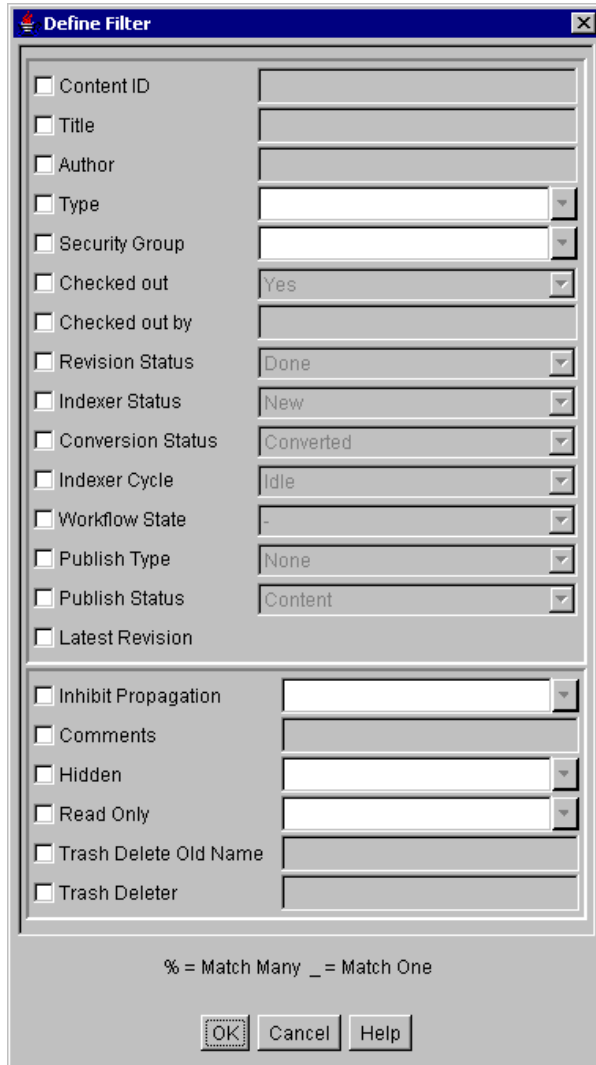


Element	Description
Options menu	Save Settings = Saves all the current settings. Exit = Closes Batch Categorizer.
Help menu	Help = Opens the online Help system. About Content Categorizer = Displays version information for Content Categorizer and Content Server.
Use Filter check box	Selected = enables filtering of content in the repository based on any defined filters and release date filter (if specified). Clear = disables filtering of content in the repository based on defined filters.
Define Filter button	Displays the Define Filter Screen , from which selections for filters can be made.
Release Date since check box and list	Selected = enables filtering of content in the repository based on release date since 1 day, 1 week, or 4 weeks. Clear = disables filtering of content in the repository based on release date.
Content list	Filtered lists of content items in the repository.
Show Columns button	Displays the Show Columns Screen , from which selections for displaying properties in the content list can be made.

Element	Description
Content list properties columns	Shows the following properties for each content item: <ul style="list-style-type: none"> ■ Content ID ■ Revision ■ ID ■ Revision Status ■ Indexer Status
Categorize button	Displays the Categorize Existing Screen .
Abort button	Cancels the categorization batch process.
Help button	Opens the online Help system.
Progress bar	Shows the progress of the batch process.

A.7.10 Define Filter Screen

The Define Filter screen is accessed from the Batch Categorizer utility.



Element	Description
Content ID check box and field	The unique identifier of the content item. Enter the value. Selected / Clear = Item is used / not used as a filter.
Title check box and field	The descriptive name identifying the file. Enter the value. Selected / Clear = Item is used / not used as a filter.
Author check box and field	Name of the person who checked in the file. Enter the value. Selected / Clear = Item is used / not used as a filter.
Type check box and field	An identifier used to group files. Select value from list. Selected / Clear = Item is used / not used as a filter.
Security Group check box and field	A security group is a set of files with the same access privileges. Select value from list. Selected / Clear = Item is used / not used as a filter.
Checked out check box and field	Existing files that are checked out. Select value from list. Selected / Clear = Item is used / not used as a filter.
Checked out by check box and field	Person who has checked out the file(s). Enter the value. Selected / Clear = Item is used / not used as a filter.
Revision Status check box and field	Represents the number of revisions in the file's life cycle. Select value from list: <ul style="list-style-type: none"> ■ Done: Ready for release on release date. ■ Edit: File in workflow, waiting for contributors and/or reviewers. ■ GenWWW: Waiting for refinery process, or failed trying to index and release to web sites. ■ Released: Processing completed. File is viewable and searchable on the web site (if permitted by release date). ■ Pending: Waiting for completion of all files within a workflow. ■ Expired: File removed from web sites. ■ Deleted: Temporary state until next index cycle removes file completely. ■ Review: File in a workflow review step. Selected / Clear = Item is used / not used as a filter.
Indexer Status check box and field	The status of the file's Index Refinery. Select value from list: <ul style="list-style-type: none"> ■ New: Files checked in and released to web site. ■ Current: Latest revision of file is released. (Only one version of file can be Current.) ■ Old: Prior revisions and files. ■ Workflow: After Done status and is in a workflow. ■ Processing: Preparing files for indexer. ■ Indexing: File being indexed. ■ Update: File is currently being updated by another user. Selected / Clear = Item is used / not used as a filter.

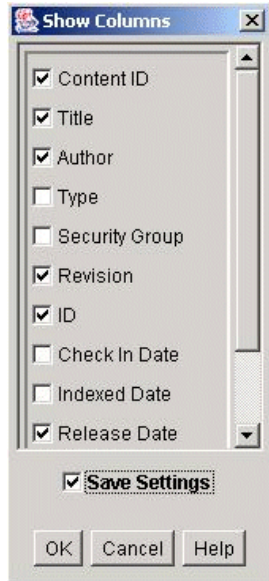
Element	Description
Conversion Status check box and field	<p>The status of all defined connections. Select value from list:</p> <ul style="list-style-type: none"> ■ Processing: File being converted by Document Refinery. ■ Converted: Conversion successful and web-viewable version of file is viewable. ■ MetaData Only: Full-text index bypassed and only metadata is indexed. ■ Refinery PassThru: Document Refinery failed to convert the file and passed the native file through to the web. ■ Failed: File deleted, locked, or corrupted; indexer error. ■ Incomplete Conversion: An error occurred in the conversion. A step after a valid web-viewable file was produced. This file is full-text indexed. <p>Selected / Clear: is used / not used as a filter.</p>
Indexer Cycle check box and field	<p>The status of the index cycle. Select value from list:</p> <ul style="list-style-type: none"> ■ Idle: Indexer cycle is complete and the content is not in an Indexer cycle. ■ Loading for Active: The content is being loaded for an update cycle. ■ Indexed for Active: The content is being indexed during an update cycle. ■ Loading for Rebuild: The content is being loaded for a rebuild cycle. ■ Indexed for Rebuild: The content is being indexed during a rebuild cycle. ■ Rebuilt: The content has been processed by a rebuild cycle. ■ Updated: The content has been processed by an update cycle. <p>Selected / Clear: is used / not used as a filter.</p>
Workflow State check box and field	<p>Revision state of content in a given workflow.</p> <ul style="list-style-type: none"> ■ Reviewer/Contributor: Workflow step consisting of named users allowing check-in, approval, and rejection. ■ Contributor: Initial step in a basic workflow consisting of a predefined users list. ■ Reviewer: Subsequent step in a workflow consisting of named users allowing approval and rejection. ■ Pending: Workflow is waiting for next user's contribution. <p>Selected / Clear: Item is used / not used as a filter.</p>

Element	Description
Publish Type check box and field	<p>The published project type. This field is only used for files that originate from Content Publisher. If the content item checked in is not a Content Publisher file, the Publish Type field will default to None and the Publish Status field will default to Content. Select value from list:</p> <ul style="list-style-type: none"> ■ None: The system default for content items that do not originate at Content Publisher files. ■ Contributor: A resource created by a Content Publisher user. ■ Gallery: A gallery file from the content publisher. ■ Home: A Home page file from the publisher project. ■ Page: Any other page from the publisher project. ■ Navigation: A navigation graphic file from the publisher project. ■ Other: Any other type of publisher project file. ■ Support: A publisher project support file. <p>Selected / Clear: Item is used / not used as a filter.</p>
Publish Status check box and field	<p>The status of the published project type. This field is only used for files that originate from Content Publisher. If the content item checked in is not a Content Publisher file, the Publish Type field will default to None and the Publish Status field will default to Content. Select value from list:</p> <ul style="list-style-type: none"> ■ Content: The source file. The system default for content items that do not originate as Content Publisher files. ■ Published: The file is released to the published Web site. ■ Staging: The file is released to the staging Web site. ■ Workflow: The file is in the staging workflow. <p>Selected / Clear: Item is used / not used as a filter.</p>
Latest Revision check box	<p>The most current revision of the file.</p> <p>Selected / Clear: Item is used / not used as a filter.</p>
Inhibit Propagation check box and field	<p>Propagation enables default metadata values to be copied from a higher-level content item and applied to other lower-level content items.</p> <p>Selected / Clear: Item is used / not used as a filter.</p>
Comments check box and field	<p>Words or phrases used to narrow the search and selected file results. Enter the word or phrase.</p> <p>Selected / Clear: Item is used / not used as a filter.</p>
Hidden check box and field	<p>Specifies whether the content is hidden from the folder view.</p> <p>Selected / Clear: Item is used / not used as a filter.</p>
Read Only check box and field	<p>Specifies whether the content should not be altered.</p> <p>Selected / Clear: Item is used / not used as a filter.</p>
Trash Delete Old Name check box and field	<p>Defines a file name metadata field for the Trash function which enables the original file name to be recorded as metadata for items that are moved to the Trash folder. Enter the value.</p> <p>Selected / Clear: Item is used / not used as a filter.</p>
Trash Deleter check box and field	<p>Defines a user metadata field for the Trash function which enables the user's login information to be recorded as metadata for items that are moved to the Trash folder. Enter the value.</p> <p>Selected / Clear: Item is used / not used as a filter.</p>

Element	Description
OK button	Saves the filter settings and exits the Define Filter dialog.
Cancel button	Exits the Define Filter dialog without saving any changes or filter settings.
Help button	Opens the online Help system.

A.7.11 Show Columns Screen

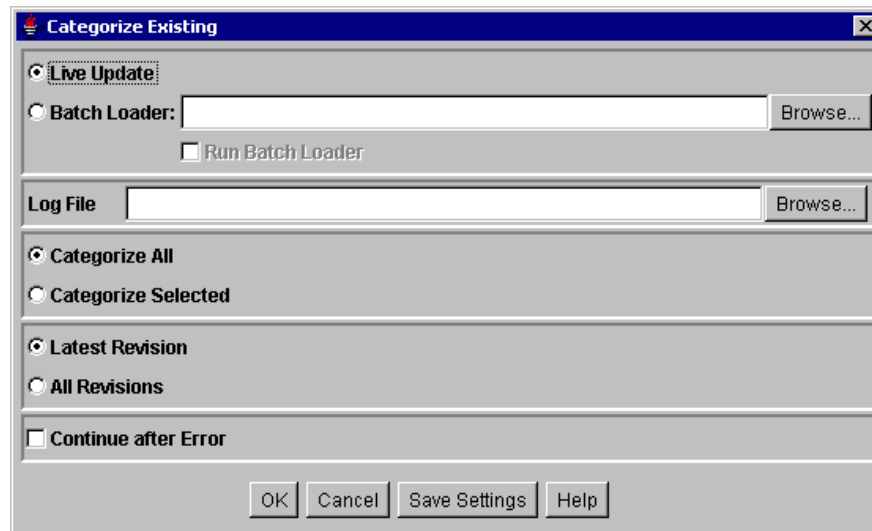
The Show Columns screen is accessed from the Batch Categorizer utility.



Element	Description
Properties columns check boxes	Selected: Displays the column on the Batch Categorizer Screen . Clear: Does not display the column on the Batch Categorizer Screen .
Save Settings check box	Selected: The column settings are applied every time the Batch Categorizer Screen is opened. Clear: The column settings apply only until the Batch Categorizer Screen is closed.
OK button	Saves the filter settings and exits the Define Filter dialog.
Cancel button	Exits the Define Filter dialog without saving any changes or filter settings.
Help button	Opens the online Help system.

A.7.12 Categorize Existing Screen

The Categorize Existing screen is accessed from the Batch Categorizer utility.



Element	Description
Live Update option	When Live Update is selected, existing selected repository content is categorized and updated.
Batch Loader option	When Batch Loader is selected, existing selected repository content is categorized, and Update Records are written to the Batch Loader control file.
Batch Loader field	Defines the location and file name for the Batch Loader control file. A typical file name is batchinsert.txt. You can edit/filter this file before submitting it to Batch Loader, or submit it directly to Batch Loader by selecting the Run Batch Loader check box.
Run Batch Loader check box	Selected: Clicking OK runs Content Categorizer and then runs the Batch Loader utility. Clear: Clicking OK runs only Content Categorizer.
Log File field	Defines the location and file name for the Content Categorizer log file.
Categorize options	Categorize All: all content items in the filtered list of content will be categorized. Categorize Selected: only the selected content items in the filtered list of content will be categorized.
Revision options	Latest Revision: only the latest revision of content items that have been selected for categorization will be categorized. All Revisions: all revisions of content items that have been selected for categorization will be categorized.
Continue after Error check box	Selected: Batch Categorizer continues processing when it encounters an error and logs the error. Clear: Batch Categorizer stops processing when it encounters an error.
OK button	Runs the categorization process, and if selected, the Batch Loader utility.
Cancel button	Exits without running the categorization process.
Save Settings button	Saves the settings on the dialog screen.
Help button	Opens the online Help system.

A.8 Web Layout Editor Interface

This section describes the screens used to create web pages with the Web Layout Editor.

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

This section covers the following topics:

- ["Web Layout Editor Page"](#) on page A-194
- ["Web Page Hierarchy Pane"](#) on page A-195
- ["Page Properties Pane"](#) on page A-196
- ["Page Links Pane"](#) on page A-197
- ["Add Page Link Screen"](#) on page A-198
- ["Add Web Page Screen"](#) on page A-199
- ["Edit Local Page Link Screen"](#) on page A-200
- ["Edit External URL Screen"](#) on page A-200
- ["Edit Page Properties Screen"](#) on page A-201

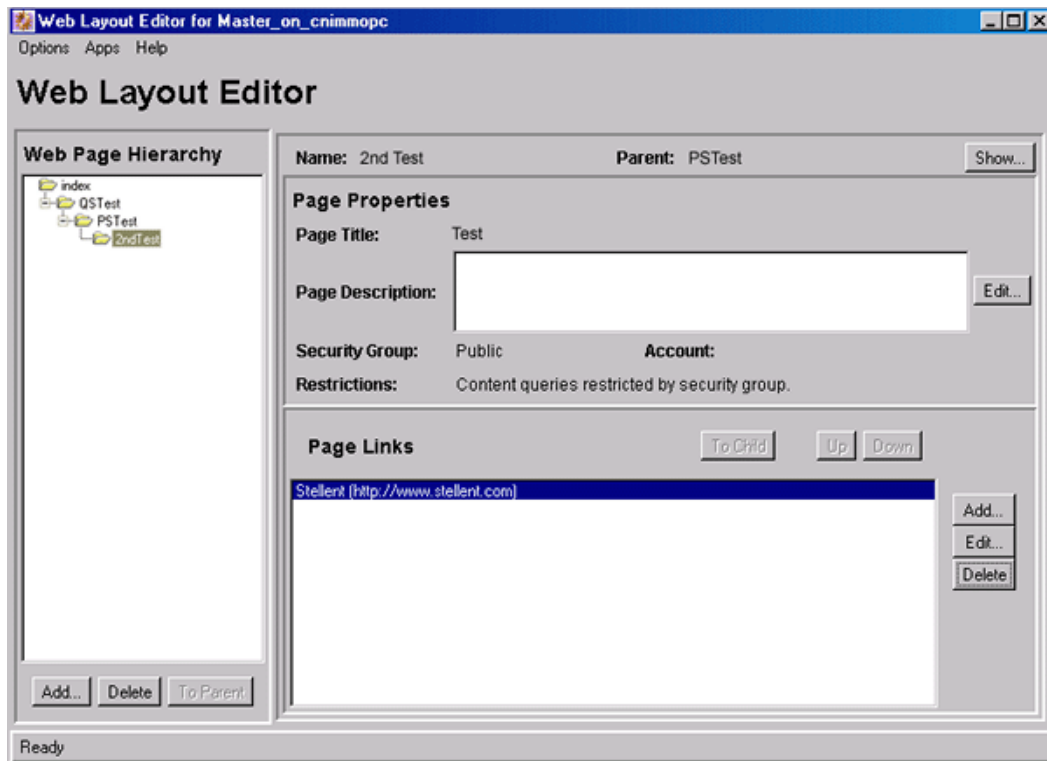
The following screens are used to create and edit queries via the Web Layout Editor.

- ["Edit Active Report Query Screen"](#) on page A-202
- ["Create Historical Report Screen"](#) on page A-203
- ["Query Link Definition Screen"](#) on page A-205
- ["Add/Edit Query Results Page"](#) on page A-207

A.8.1 Web Layout Editor Page

To access the Web Layout Editor page, click **Administration** in the content server navigation pane, next click **Admin Applets**, then click the Web Layout Editor icon on the Administration Applets page for your instance. The Web Layout Editor page contains three panes: the Web Page Hierarchy pane, the Page Properties pane, and the lower page (usually the Page Links pane).

Note: If you are using Firefox set to open new tabs instead of windows, help screens launched from an Admin Applet are not accessible until the applet window that launched the help is closed. Therefore, it is preferable to set Firefox to open in new windows instead of tabs.

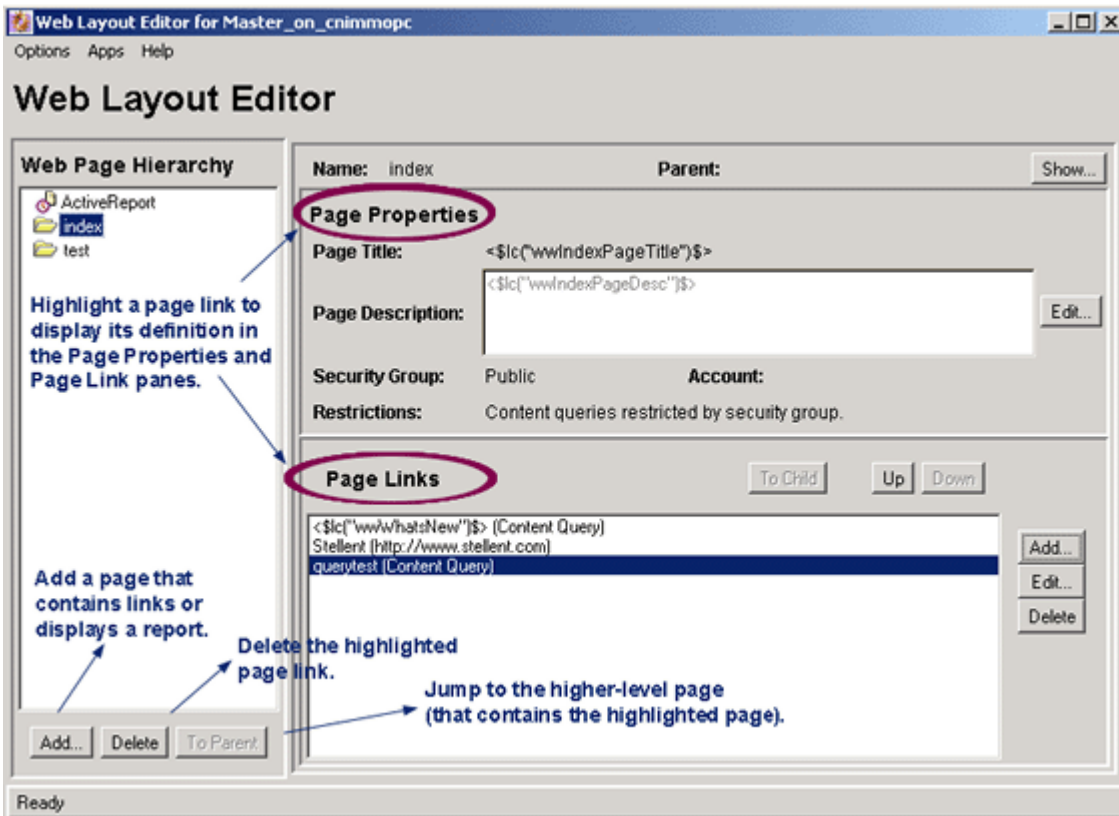


Element	Description
Web Page Hierarchy Pane	Displays the web site structure and relationship between pages. Child pages are shown in the parent's folder. A page must be selected in this pane to edit it.
Page Properties Pane	Defines the page header text and the security group that filters the content for the page.
Lower pane	The page selected in the Web Page Hierarchy pane determines what is displayed in the lower pane: <ul style="list-style-type: none"> ■ Page Links Pane displays the contents of the selected link (URLs, local pages, queries). ■ Active Report Specification Pane and Historical Report Specification Pane display information about the selected report.

A.8.1.1 Web Page Hierarchy Pane

The Web Page Hierarchy pane displays the organization of the local web pages in the Library. Child pages are shown in the parent's folder. A page must be selected in this pane to edit it.

For subadministrators to see a page in this pane, they must be able to view its parent. For subadministrators to delete a page, the page must be a directory page and the subadministrator must have access to that page and all of its children.

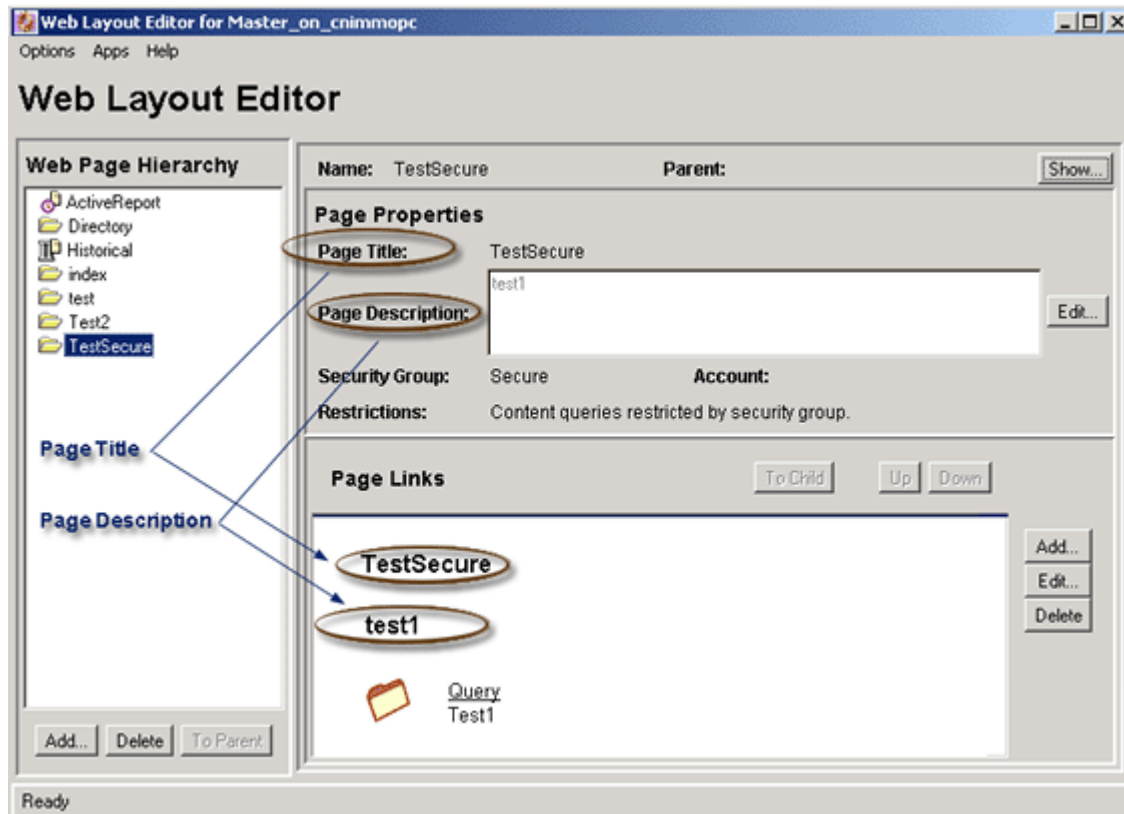


Element	Description
Add button	Adds a page that contains links or displays a report.
Delete button	Deletes the highlighted page link.
To Parent button	Jumps to the higher-level page that contains the highlighted page.

A.8.1.2 Page Properties Pane

For subadministrators to edit a page, it must be a directory page, and the subadministrator must have admin access to that page and all of its children. This prevents a subadministrator from editing a public page that has links to secure pages.

The Page Properties pane controls page header text and the security group that filters its content.

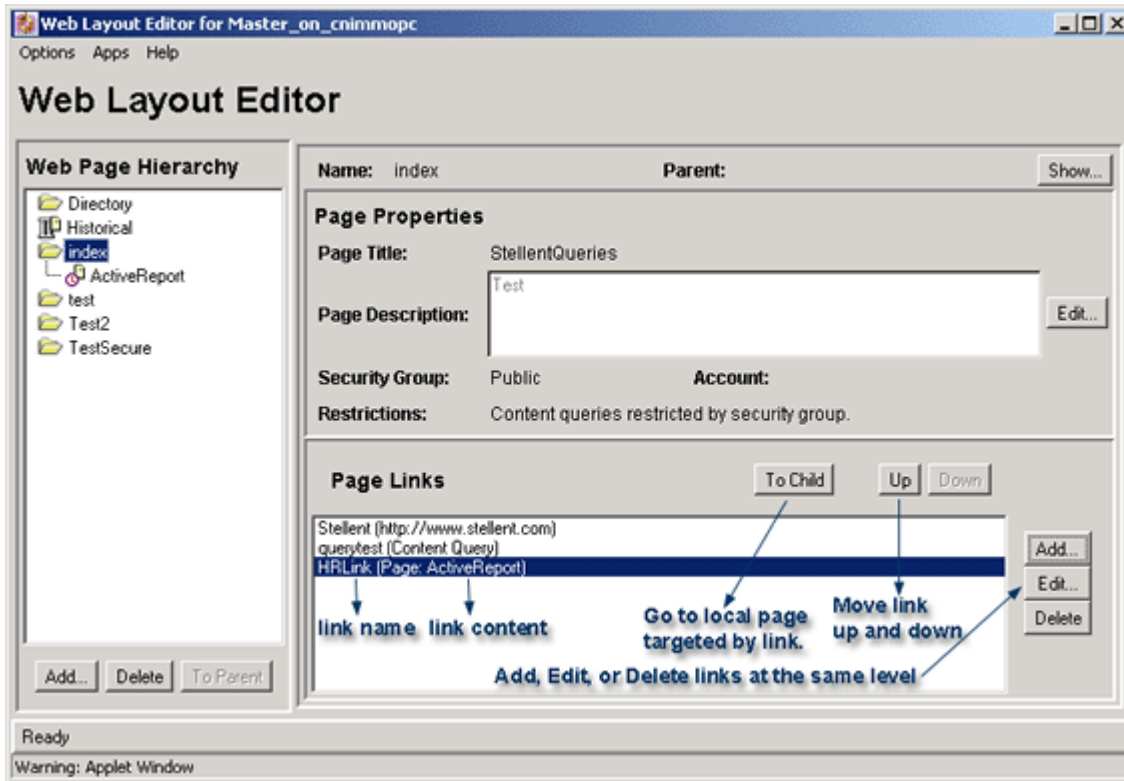


Element	Description
Name field	The page name as it appears in the Web Page Hierarchy pane.
Parent field	The name of the parent page, if the page has a parent.
Show button	Displays the web page.
Page Title field	The title of the web page.
Page Description field	A description of the web page.
Security Group list	Names of the security groups that filter the files that appear on the web page. Only files within the security group for which end user has permission will be displayed.
Account field	Assigns the account to the page. Only users with Read permission to the account can access this page.
Restrictions	Shows any restrictions, such as whether content queries are restricted by security group or account.

A.8.1.3 Page Links Pane

The Page Links pane displays the contents of the local page that is selected in the [Web Page Hierarchy Pane](#). This pane enables you to edit a link in the page and change its position as it is displayed on the web page.

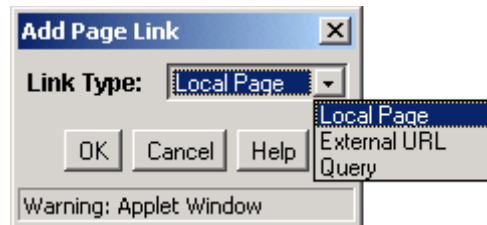
For subadministrators to see the contents of a page, they must have Read access to that page and all of its parents. This prevents the subadministrators from seeing a page that they cannot get to through the Library link.



Element	Description
To Child button	Goes to the local page targeted by the link selected in the Page Links pane.
Up button	Moves the selected link up in the list of links.
Down button	Moves the selected link down in the list of links.
Lower pane	The page selected in the Web Page Hierarchy pane determines what is displayed in the lower pane: <ul style="list-style-type: none"> Page Links Pane displays the contents of the selected link (URLs, local pages, queries). Active Report Specification Pane and Historical Report Specification Pane display information about the selected report, such as Data Source, Report Template, Report Creation Date, and Rows Per Page.
Add button	Displays the Add Page Link Screen to add a link at the same level.
Edit button	Displays the relevant screen for editing a link at the same level. For example, when editing a query, a Query Link Definition page is displayed, or when editing a URL, an Edit URL page is displayed.
Delete button	Deletes the selected link at the same level.

A.8.2 Add Page Link Screen

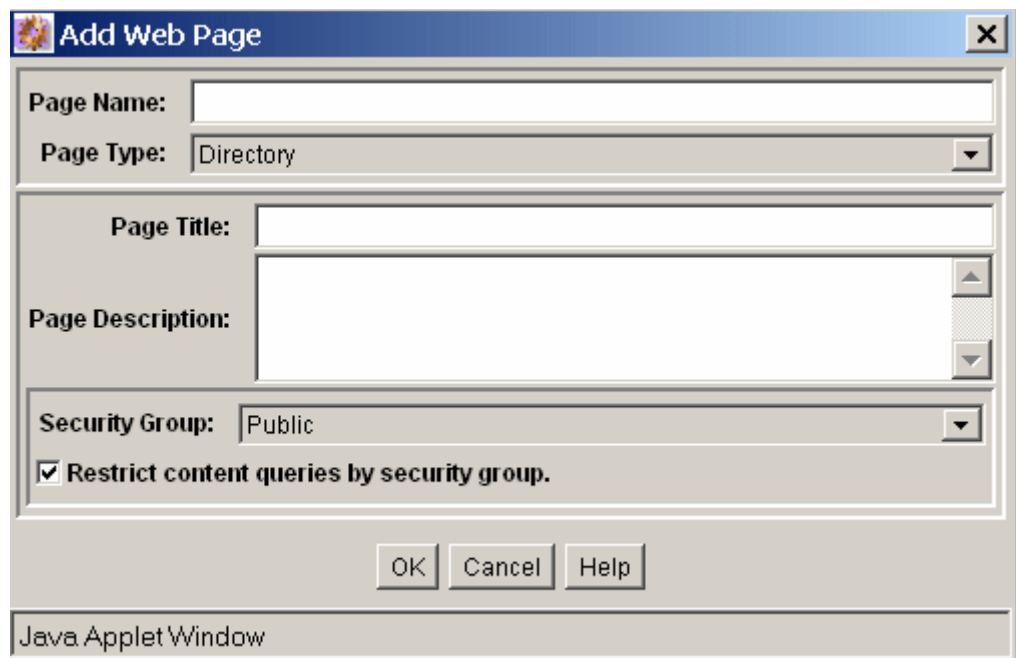
This screen is used to start the process of setting up a link to a new web page. To access it, click **Add** on the [Page Links Pane](#).



Element	Description
Link Type menu	Specifies which type of page link to add to the web page: <ul style="list-style-type: none"> ▪ Local Page: Links page to a local page. ▪ External URL: Links page to an External URL. ▪ Query: Links page to a report query.

A.8.3 Add Web Page Screen

This screen is used to add a new web page. To access this screen, go to the [Web Page Hierarchy Pane](#), then click **Add**.

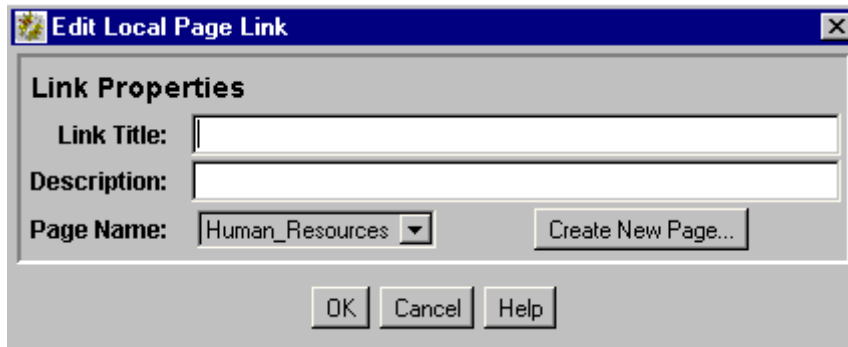


Element	Description
Page Name field	This name appears in the Web Page Hierarchy pane.
Page Type list	<ul style="list-style-type: none"> ▪ Directory: A web page that contains links to other pages, links to URLs, or runs a query. ▪ Active Report: A web page that displays current information from the database. The database (or data source) contains information on Users, Workflow Files, Types, File History, and Content Information. ▪ Historical Report: Similar to an Active Report, but captures and saves the information at the time when it was last created. The displayed pages do not change unless the Historical Report is updated.

Element	Description
Page Title field	To view where this field appears on a web page, see Page Properties Pane .
Page Description field	To view where this field appears on a web page, see Page Properties Pane .
Security Group list	Filters the files that appear on the web page. Only files within the security group for which end user has permission will be displayed.
Restrict content queries by security group check box	Enabling this box ensures that the security group applies to all queries that originate from this page. All queries will inherit the security group of this page.
Account field	Assigns the account to the page. Only users with Read permission to the account can access this page.
Restrict content queries by account check box	Enabling this box ensures that the account applies to all queries that originate from this page.

A.8.4 Edit Local Page Link Screen

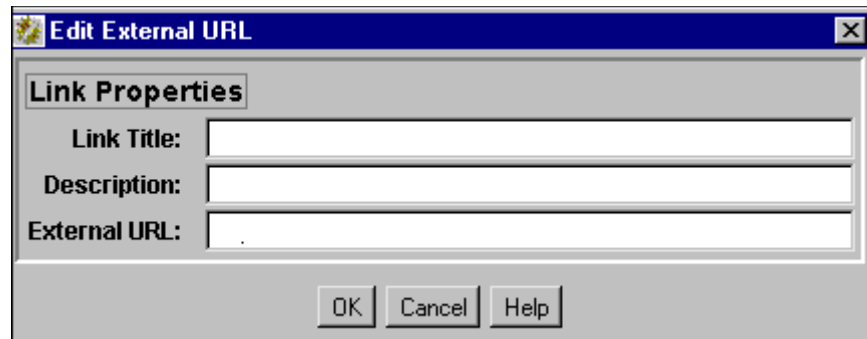
This screen is used to enter information about a local page. To access this screen, from the [Page Links Pane](#) in the [Web Page Hierarchy Pane](#), click **Add** and then select **Local Page**.



Element	Description
Link Title field	This text is displayed as the link.
Description field	Optional field text or HTML. This text is displayed under the link to provide additional description about the link destination.
Page Name list	Select the page that the link will appear on.
Create New Page button	Creates a link to a new local page. This displays the Add Web Page screen and automatically initiates the same process as adding a new web page from the Web Page Hierarchy pane.

A.8.5 Edit External URL Screen

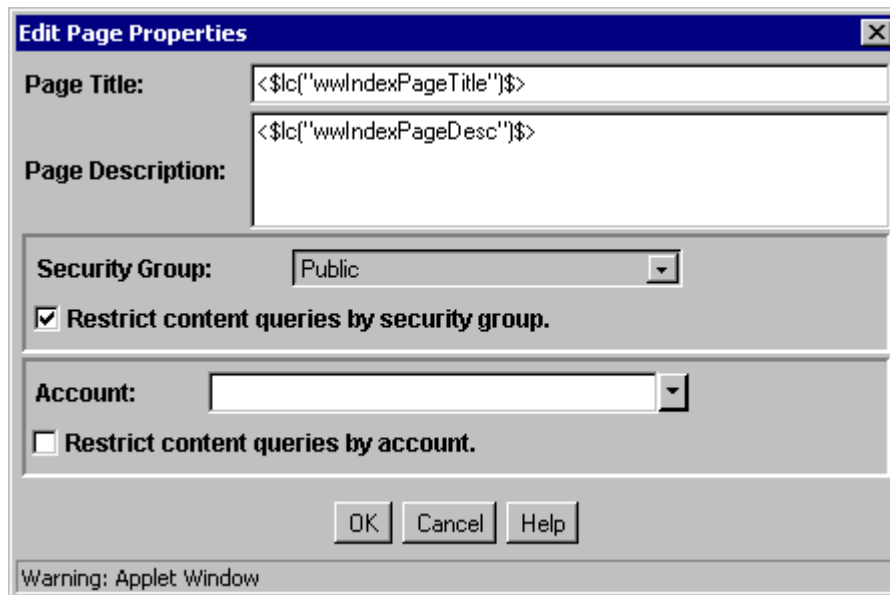
This screen is used to specify information for an external URL. To access this screen, from the [Page Links Pane](#) in the [Web Page Hierarchy Pane](#), click **Add** and then select **External URL**.



Element	Description
Link Title field	This text is displayed as the link.
Description field	Optional field, text or HTML. This text is displayed under the link to provide additional description about the link destination.
External URL field	The address of the link's destination. It must start with <i>http://</i> .

A.8.6 Edit Page Properties Screen

This screen is used to modify the page properties for a web page. To access this page, select a page in the [Web Page Hierarchy Pane](#), then click the **Edit** button in the [Page Properties Pane](#).

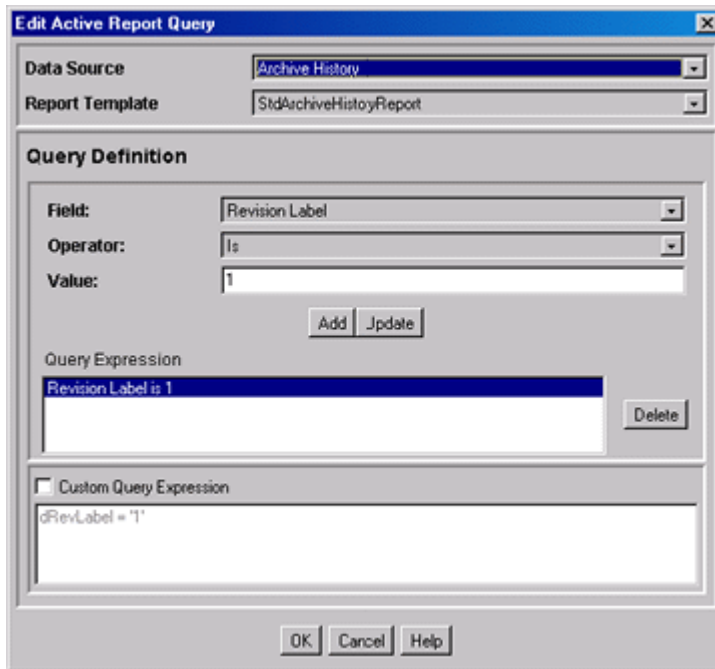


Element	Description
Page Title field	Specifies the title of the web page.
Page Description field	Describes the web page.
Security Group list	Specifies the security group for the web page.
Restrict content queries by security group checkbox	If checked, specified that content queries are restricted to users assigned to the specified security group.

Element	Description
Account list	Assigns the account to the web page. Only users with Read permission to the account can access this page.
Restrict content queries by account checkbox	If checked, specifies that content queries are restricted to users assigned to the specified account.

A.8.7 Edit Active Report Query Screen

The Edit Active Report Query screen is used to define the data source, template, and query definition for an active report. To access this screen, select an active report page in the Web Page Hierarchy pane, and click **Edit Report Query** in the Active Report Specification pane.



Element	Description
Data Source list	Select the type of report to create: <ul style="list-style-type: none"> ▪ Archive History reports on which files are exported to specific archives. ▪ Content Types reports on content types and their definitions. ▪ User reports on end users. ▪ Information Fields reports on the extended metadata. ▪ Content History reports when files have been checked in and out, deleted, updated. ▪ Workflow Items reports on the defined workflows. ▪ Workflow History reports on when specific workflows have been enabled and when content items are approved, rejected, or checked into a workflow.
Report Template list	Provides a list of selectable templates that control how the query links are displayed.

Query Definition pane	Description
Field list	The field that the query will search. Available fields are dependent on the Data Source selected.
Operator list	Provides a list of query operators. The operators available are the result of the field selected.
Value field	The target data for the query, dependent on the Field selected.
Add button	Enters the query specified by Field, Operator, and Value fields into the Query Expression box. One or more query lines can be appended.
Update button	Updates the selected query line with parameters specified in the Field, Operator, and Field Value fields.
Query Expression box	Displays each query as a single line when added by the Add button.
Delete button	Deletes a selected query line.

Custom Query Expression Pane	Description
Custom Query Expression check box	Enables display and edit of SQL code generated from the query expression. Caution: If you clear the Custom Query Expression check box, the expression reverts to its original definition; all modifications will be lost.
Custom Query Expression box	Used to edit the query expression.

A.8.8 Create Historical Report Screen

This screen is used to specify the information to be included in an historical report. To access this screen, from the Web Layout Editor add a new web page and specify that it be a historical report. When Historical Report Specification is shown in the lower pane of the Web Layout Editor, click the **Create Report Data** button and the Create Historical Report screen is displayed.

The screenshot shows a 'Query Definition' dialog box. At the top, there are three fields: 'Data Source' with a dropdown menu showing 'Archive History', 'Report Template' with a dropdown menu showing 'StdArchiveHistoryReport', and 'Rows Per Page' with a text box containing '100'. Below these is the 'Query Definition' section, which contains three input fields: 'Field' with a dropdown menu showing 'Content ID', 'Operator' with a dropdown menu showing 'Is', and 'Value' with an empty text box. To the right of the 'Value' field are 'Add' and 'Update' buttons. Below these fields is a 'Query Expression' text area with a 'Delete' button to its right. At the bottom of the dialog is a 'Custom Query Expression' checkbox and a large text area with scrollbars. At the very bottom are 'OK', 'Cancel', and 'Help' buttons.

Element	Description
Data Source list	Select Archive History from the list of data sources.
Report Template list	When Archive History is selected for the data source, this field is automatically populated with the tdArchiveHistoryReport selection.
Rows Per Page field	Specifies the rows per page in the report. A default number is provided.

Element	Description
Field list	Select a metadata field that the query will search.
Operator list	The operator specifies the method for searching the metadata fields. The selected field determines the set of available values. Lists the following operators: <ul style="list-style-type: none"> ■ Is: The specified metadata field contains the specified metadata Value. ■ Is Not: The specified metadata field does not contain the specified metadata Value. ■ Begins With: The text within the specified metadata field starts with the metadata Value. ■ Contains: The text or value within the specified metadata field contains the metadata Value.
Value list	The target data for the query.
Add button	Enters the query specified by Field, Operator, and Value fields into the Query Expression box. One or more query lines can be appended.

Element	Description
Update button	Updates the selected query line with parameters specified in the Field, Operator, and Value fields.
Query Expression box	Displays each query as a single line.
Delete button	Deletes the selected query line.
Custom Query Expression check box	Enables display and edit of Idoc Script generated from the query expression. Caution: If you clear the Custom Query Expression check box, the expression reverts to its original definition; all modifications will be lost.
Custom Query Expression box	Used to edit the query expression.

A.8.9 Query Link Definition Screen

This screen is used to specify the information to be used in a query. To access this screen for a new query link definition, from the Web Layout Editor add a new web page, then click the **Add** button in the lower pane. To access this screen to edit an existing query link definition, from the Web Layout Editor select an existing web page, then select a page link in the lower pane and click **Edit**.

Element	Description
Link Title field	This text is displayed as the link.
Description field	This text is displayed under the link to provide a description about the link destination (optional field).

Query Tab	Description
Field list	Select a metadata field that the query will search.
Operator list	The operator specifies the method for searching the metadata fields. The selected field determines the set of available values.
Value list	The target data for the query.
Select button	Displays the Content Item View screen or User View screen, which you use to select content items or users.
Add button	Enters the query specified by Field, Operator, and Value fields into the Query Expression box. One or more query lines can be appended.
Update button	Updates the selected query line with parameters specified in the Field, Operator, and Value fields.
Query Expression box	Displays each query as a single line.
Delete button	Deletes the selected query line.
Custom Query Expression check box	Enables display and edit of Idoc Script generated from the query expression. Caution: If you clear the Custom Query Expression check box, the expression reverts to its original definition; all modifications will be lost.
Custom Query Expression box	Used to edit the query expression.

Note: The following fields can be edited directly to add Idoc Script variables and HTML tags.

Results Tab	Description
Page Title field	Heading of the query results page.
Sort Results By list	Specifies the metadata field by which the list of results is sorted.
Sort Order list	Defines how the results are ordered (ascending or descending).
Results Template Page list	Provides a list of selectable templates that control how the query links are displayed. The list contains a Standard Results page and any templates created with the Query Results Pages screen.
Use Customized Text check box	Displays custom text for each row on the query results page.
Text 1 field	The text that is displayed as the first line in each row on the query results page.*
Text 2 field	The text that is displayed as the second line in each row on the query results page.*
Arrow buttons	Moves the selected field from the Field list to the Text 1 or Text 2 field.
Field list	Lists the metadata fields that are available for display on the query results page.

A.8.10 Add/Edit Query Results Page

The Add Query Results page and the Edit Query Results page are used to add or edit specifications for query results. To access the Query Result Pages screen, from the Web Layout Editor page, from the Options list in the top menu bar, select **Query Result Pages**.

To add a query result page, click **Add** on the Query Result Pages screen. To edit a query result page, select the name of the page from the Query Result Pages screen, then click **Edit**.

Note: These fields can be edited directly to add Idoc Script variables and HTML tags.

Element	Description
Name field	The name for the Query Results Page. This name can be selected from the Results Template Page Properties.

Element	Description
Description field	Helps identify the results page. This text is not displayed on a web page.
Text 1 field	The text that is displayed as the first line in each row on the query results page.*
Text 2 field	The text that is displayed as the second line in each row on the query results page.*
Arrow buttons	Moves the selected field from the Field list to the Text 1 or Text 2 field.
Field list	Lists the metadata fields that are available for display on the query results page.

When adding Idoc Script variables and HTML tags to the Text 1 and Text 2 fields, keep in mind that any resulting HTML tags can affect the display of the search results page. See the *Oracle Fusion Middleware Idoc Script Reference Guide* for more information.

Building a Web Site

This appendix describes the Web Layout Editor and how it is used to build a web site. The following topics are covered:

- ["Planning a Web Site"](#) on page B-1
- ["Working with Web Pages"](#) on page B-3
- ["Using the Web Layout Editor Application"](#) on page B-4
- ["Working with Reports"](#) on page B-7
- ["Writing Queries"](#) on page B-8

B.1 Planning a Web Site

This section covers these topics:

- ["About Planning a Web Site"](#) on page B-1
- ["Defining the Site Structure and Displaying Criteria"](#) on page B-2
- ["Task Sequence"](#) on page B-2

B.1.1 About Planning a Web Site

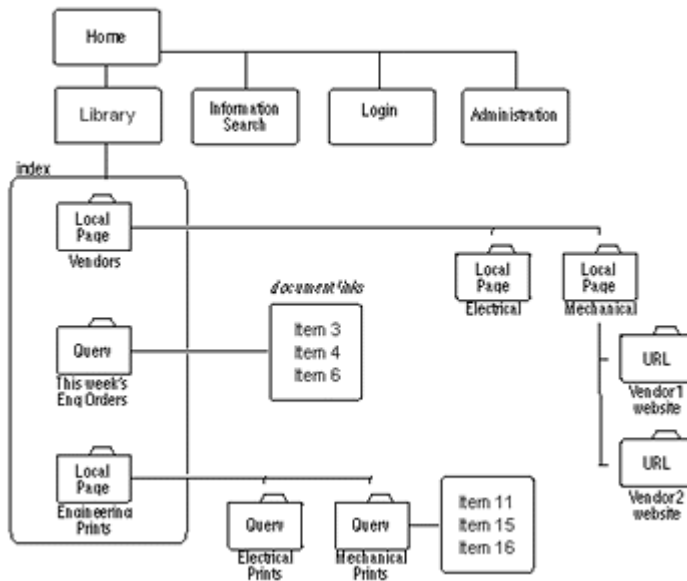
From the content server Home page, the Library (Table of Contents) link displays the top level of your web layout. Although a web layout is not required and might not be necessary for all applications, it provides an effective means for grouping files and navigating. When a web layout is not created, the Search function provides the only access to files in the core content server. However other products like Site Studio, and extras like Folders and Categorization Folders provide other means of navigation.

[Figure B-1](#) shows an example of a web layout using Local Pages, URLs, and Queries as site-building features. Active and Historical reports are other features that are introduced later in this section.

Administrators are responsible for planning the web site. Subadministrators with WebLayout rights can create directory pages for groups and accounts if they have permissions for those groups and accounts.

Web viewable files always have lower case names.

Figure B-1 Web Layout Example



On the Library web pages, these features are displayed as links with a title next to a file-folder icon. When clicking on a folder that represents a query, the result produces a set of links to files that match the query's criteria.

B.1.2 Defining the Site Structure and Displaying Criteria

Define the web site structure in the Web Hierarchy pane of the Web Layout Editor. Then define criteria to display specific files when the user clicks a folder (or link). The criteria for each link is based on the metadata for each file. Besides executing a query, links can jump to another page of links, go to a URL, or display a report. The following examples demonstrate how links are setup to display files.

- **Example 1:** To enable users to access engineering forms from a link named Forms, create a content type named Forms. (Use Configuration Manager; see the *Oracle Fusion Middleware System Administrator's Guide for Content Server*.) Then, create a query with Type equal to Forms using the Web Layout Editor.
- **Example 2:** To enable users to access specific Standard Work Procedures, create a content type called SWP (using Configuration Manager), and create a query of Type equal to SWP and Content Name substring of 7200.

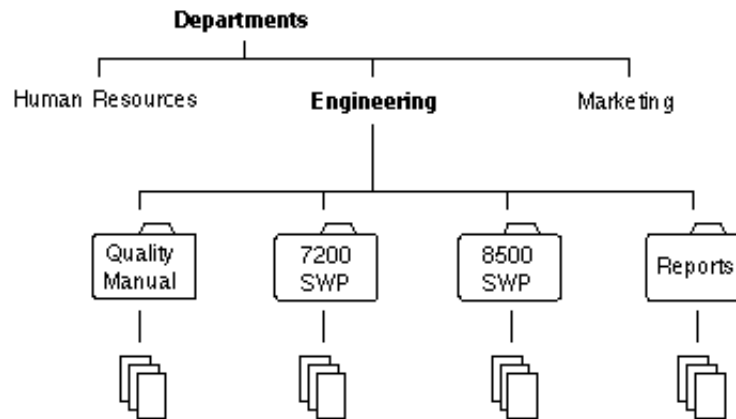
B.1.3 Task Sequence

The following steps demonstrate the typical sequence of tasks for creating a web site with the Web Layout Editor:

1. **Gather Information.** The first step is to gather information about how your users would intuitively retrieve information; what do they want and how would they typically search for it? How does this impact security?
2. **Customize Metadata.** If necessary, customize your site's metadata by creating any additional fields that might be useful (described in [Chapter 2, "Managing Repository Content"](#)).
3. **Define Content Types.** Define the content types to support your site (described in [Chapter 2, "Managing Repository Content"](#)).

4. **Define Security Groups, Users, and Roles.** Create security groups and users, and assign roles to users to establish their permissions (described in the *Oracle Fusion Middleware System Administrator's Guide for Content Server*).
5. **Design the Web Site.** Create the web site layout. Although a web site provides a structure that allows navigation to locate and display files, it is not required. Some companies might prefer users to use only the search engine to find files, others might want to use both a navigation structure and a search engine. To design the web site, it is helpful to first draw a web site structure as shown in [Figure B-2](#).

Figure B-2 Example Web Structure



B.2 Working with Web Pages

This section covers these topics:

- ["About Web Pages"](#) on page B-3
- ["Local Page"](#) on page B-4
- ["External URL"](#) on page B-4
- ["Query"](#) on page B-4
- ["Report"](#) on page B-4

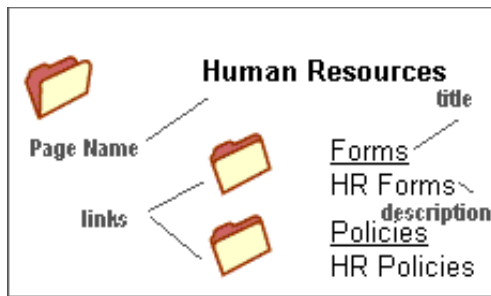
B.2.1 About Web Pages

After completing the initial plan, build the web site and determine how it functions. Revise it if it does not perform properly or is not manageable. Continue this process until you have a design that is going to work for you and the users.

The links on a page jump to one of these:

- Local page
- URL
- Query
- Report

The links all look similar and can be combined on the same page as shown on the local page in [Figure B-3](#):

Figure B-3 Links in Example Local Page

B.2.2 Local Page

A local page can be one of two types: a directory or a report. A local page that is a directory can contain links that open another local page, open a URL, or run a query.

Only administrators can create a local page that is a report. Administrators or subadministrators with appropriate rights can create a local page that is a directory.

B.2.3 External URL

An external URL is a link to a specified URL (web address). You can link to any URL address or web page on the intranet or internet.

B.2.4 Query

A search query produces a page containing links to files that meet the criteria of a defined query. The page looks the same as a page resulting from a content search.

Important: Queries can inherit the security group and/or the account that the page links are on. If the security group or account is inherited, it automatically restricts the query to files in that security group or account.

B.2.5 Report

Reports are either Active or Historical. Active reports appear as a file folder link and perform a database query each time they are run, generating a display of current information. Like Active Reports, Historical Reports appear as a file folder link, but they contain information that was queried at the time they were initially run. They do not perform a database query each time they are opened, and the report is only changed if it is updated.

B.3 Using the Web Layout Editor Application

Use the Web Layout Editor application to perform the following tasks to build the web site.

Subadministrators do not have access to the Query Result Pages function in the Options menu nor to any applications for which they do not have rights. Additionally, subadministrators have viewing, editing, and deleting rights that are restricted as described in these sections:

- ["Adding a New Web Page"](#) on page B-5

- ["Editing Web Page Properties"](#) on page B-5
- ["Creating a Local Page Link"](#) on page B-5
- ["Creating an External URL Link"](#) on page B-5
- ["Editing a Hierarchical Web Page Structure"](#) on page B-6

B.3.1 Adding a New Web Page

To add a new web page to the web layout:

1. In the [Web Page Hierarchy Pane](#), click **Add**.
The [Add Web Page Screen](#) is displayed.
2. Enter information about the new page.
3. Click **OK**.

B.3.2 Editing Web Page Properties

To edit the properties of a web page:

1. Select the page in the [Web Page Hierarchy Pane](#).
2. Click **Edit** in the [Page Properties Pane](#).
The [Edit Page Properties Screen](#) is displayed.
3. Edit the properties.
4. Click **OK**.

B.3.3 Creating a Local Page Link

To create a local page link:

1. Select the page in the [Web Page Hierarchy Pane](#) under which you want to locate the new local page.
2. In the [Page Links Pane](#), click **Add**.
The [Add Page Link Screen](#) is displayed.
3. Select **Local Page**, and click **OK**.
4. Enter information about the new local page into the [Edit Local Page Link Screen](#).
5. When done, click **OK**.

B.3.4 Creating an External URL Link

To create an external URL link:

1. Select the page in the [Web Page Hierarchy Pane](#) under which you want to locate the new URL.
2. In the [Page Links Pane](#), click **Add**.
The [Add Page Link Screen](#) is displayed:
3. Select **External URL**, and click **OK**.
4. Enter information about the URL into the [Edit External URL Screen](#).
5. When done, click **OK**.

6. Refresh the browser to display the new page.

B.3.5 Editing a Hierarchical Web Page Structure

To edit a hierarchical web page structure, the objective is to insert a page, making it the new parent of the hierarchical page.

For example:

1. Create a structure.
2. Select **QSTest** directory with the Page Link **PCTest** also selected.
3. Click the **Page LinksDelete**.
4. Select the **Index** directory and select **Page LinksAdd**.
5. Create a new page.
 - Title the page *NewEngPage*.
 - Type a Description as *NewEngPage*.
6. Click **OK**.

The *NewEngPage* will appear in the [Web Page Hierarchy Pane](#).

7. Select **QSTest** and click **Page LinksAdd**.
8. Select **Local Page**.
9. Click **OK**.

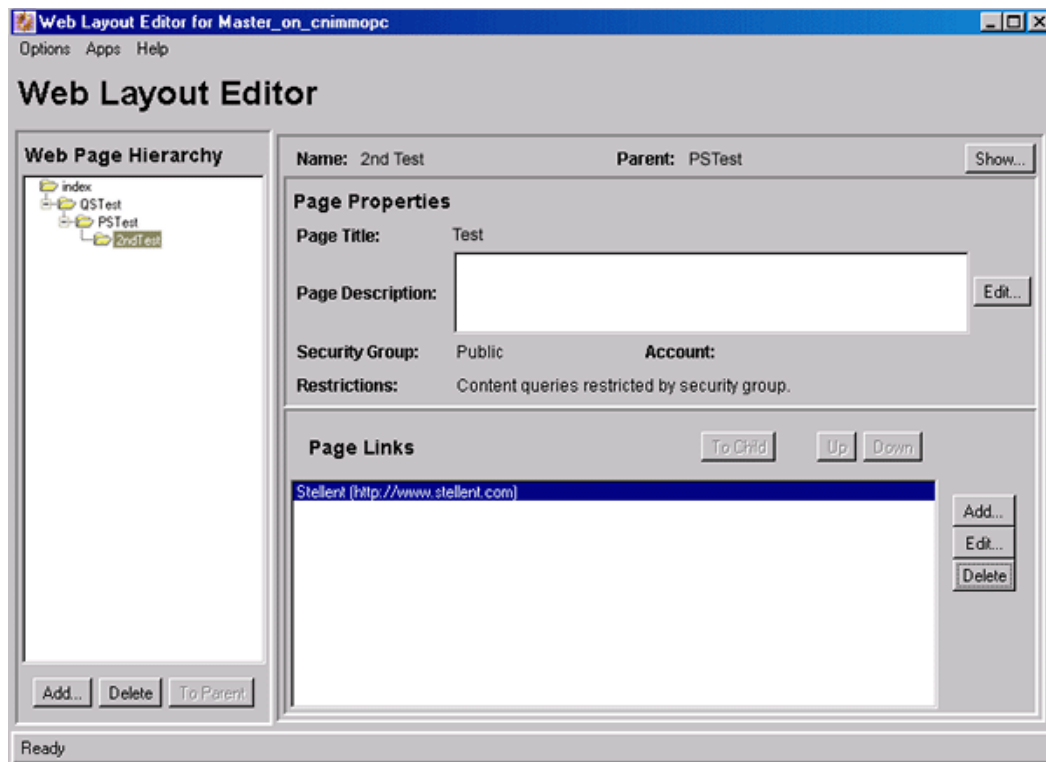
The *NewEngPage* now appears under **QSTest**.

10. Select *NewEngPage* and click the **Page LinksAdd**.
11. Select **Local PageOK**.

You will note that the Page name is **PCTest**.

The *NewEngPage* has now been entered with **PCTest** as its child and the External URL in *2ndTest* has been preserved.

The following image shows a hierarchical web page structure created by this example procedure.



B.4 Working with Reports

This section covers these topics:

- ["About Reports"](#) on page B-7
- ["Defining an Active Report"](#) on page B-7
- ["Defining a Historical Report"](#) on page B-8
- ["Editing a Query Expression in an Active Report"](#) on page B-8

B.4.1 About Reports

Two types of reports can be defined using the Web Layout Editor: Active Reports and Historical Reports.

- Active Reports appear as a file-folder link and perform a database query each time they are run, generating a display of current information. You can define active reports and edit their query expressions.
- Like Active Reports, Historical Reports appear as a file-folder link, but they contain information that was queried at the time they were initially run. They do not perform a database query each time they are opened, and the report is changed only if the database is updated. The procedure for creating a Historical Report is almost the same as creating an Active Report. The only difference is the Create Historical Report screen has an extra field (Rows Per Page) to specify the number of rows each page of the report can contain.

B.4.2 Defining an Active Report

To define an active report:

1. In the Web Layout Editor, add a new web page, and select **Active Report** as the Page Type.
2. In the Active Report Specification pane of the Web Layout Editor, click **Edit Report Query**.
3. Define the query by entering information on the [Edit Active Report Query Screen](#).
4. Click **OK**.

B.4.3 Defining a Historical Report

To prepare an Archive Historical Report:

1. In the WebLayout Editor, add a new web page and select **Historical Report** as the Page Type.
2. In the Historical Report Specification pane of the Web Layout Editor, click **Create Report Data**.
3. When you create the report data in the [Create Historical Report Screen](#), specify **Archive History** for the data source.
4. Write a query for the report that will return the data that you want to retrieve. For example, specify the Content ID.
5. When done specifying information for the report, click **OK**.

B.4.4 Editing a Query Expression in an Active Report

To edit the query expression in an active report:

1. In the [Web Page Hierarchy Pane](#), select the report you want to edit.
2. In the Active Report Specification pane, click **Edit Report Query**.
3. In the Query Expression window on the [Edit Active Report Query Screen](#), select the query line to edit.
4. Make changes to the query as necessary, and click **Update**.

Caution: If you clear the Custom Query Expression check box, the expression reverts to its original definition; all modifications will be lost.

5. Click **OK**. If a query is not specified, all values are returned.

B.5 Writing Queries

This section covers these topics:

- ["About Writing Queries"](#) on page B-9
- ["Writing Directory Queries"](#) on page B-9
- ["Writing Report Queries"](#) on page B-9
- ["Creating a Query Link"](#) on page B-10
- ["Editing the Query Expression in a Query Link"](#) on page B-10
- ["Adding a Query Results Page"](#) on page B-10

- ["Editing a Query Results Page"](#) on page B-11
- ["Deleting a Query Results Page"](#) on page B-11

B.5.1 About Writing Queries

You can write custom query expressions when you define query links. The method that you use to write custom queries varies depending on the kind of query that you write:

- **Directory:** See ["Writing Directory Queries"](#) on page B-9.
- **Report:** See ["Writing Report Queries"](#) on page B-9.

B.5.2 Writing Directory Queries

To write directory custom queries, you can use Idoc Script. Idoc Script is Content Server's scripting language, which is described in detail in the Oracle Software Developer's Kit (SDK).

B.5.3 Writing Report Queries

To write report queries, you can use SQL script and Idoc Script. Idoc Script is the proprietary scripting language, which is described in detail in the *Oracle Fusion Middleware Idoc Script Reference Guide*. Basic SQL script is briefly described below.

Note: Your SQL syntax is dependent on your database. Different databases expect different syntax for items like wildcards, and so forth. See your database documentation for specific syntax information.

B.5.3.1 Basic SQL Script

SQL script involves operators, which are words that show logical relationships between the words in your query. The following table contains some basic operators and their use.

Operator	Use
AND	Returns files that contain the words it links.
OR	Returns files that contain at least one of the words it links.
=	Equal
<> or !	Not equal
<	Less than
>	Greater than
<+	Less than or equal to
>+	Greater than or equal to
IN	Finds a position in a table.
BETWEEN	Finds a value in a range.
NOT	Excludes the files that contain the specified condition.

B.5.3.2 Basic SQL Examples

- Finds all files that have an internal revision ID less than 50000:
`dID < '50000'`
- Finds all files that have a Content ID between 10000 and 50000:
`dDocName BETWEEN '10000' AND '50000'`

B.5.4 Creating a Query Link

To create a query link:

1. In the [Web Page Hierarchy Pane](#), select the page where you want to locate the new query link.
2. In the Page Links pane, click **Add**.
The [Add Page Link Screen](#) is displayed.
3. Select **Query**, and click **OK**.
The [Query Link Definition Screen](#) is displayed.
4. Enter information into the screen.
5. When done, click **OK**.

When adding Idoc Script variables and HTML tags to the Text 1 and Text 2 fields, keep in mind that any resulting HTML tags can affect the display of the search results page. See the *Oracle Fusion Middleware Idoc Script Reference Guide* for more information.

B.5.5 Editing the Query Expression in a Query Link

To edit the query expression in a query link:

1. In the [Page Links Pane](#) of the Web Layout Editor, select the query you want to edit.
2. Click **Edit**.
The [Query Link Definition Screen](#) is displayed.
3. In the Query Expression area, select the query line to edit.
4. Make changes to the metadata, Operator, metadata Value fields as necessary, then click **Update**.
5. Click **OK**.

Caution: If you clear the Custom Query Expression check box, the expression reverts to its original definition; all modifications will be lost.

B.5.6 Adding a Query Results Page

Follow these instructions to add a query results page. This task is available for administrators, not for subadministrators with WebLayout rights:

1. From the Web Layout Editor menu, select **Options**, then select **Query Results Pages**.
The Query Result Pages screen is displayed.
2. Click **Add** to display the Add Result Page.

3. Enter information for the new page. Observe the field descriptions for [Add/Edit Query Results Page](#).
4. Click **OK**.

B.5.7 Editing a Query Results Page

Follow these instructions to edit a query results page. This task is available for administrators, not for subadministrators with WebLayout rights:

1. From the Web Layout Editor menu, select **Options**, then **Query Results Pages**, then select the name of the page.
2. Click **Edit**.
The [Add/Edit Query Results Page](#) is displayed.
3. Make the necessary changes, and click **OK**.

B.5.8 Deleting a Query Results Page

Follow these instructions to delete a query results page. This task is available for administrators, not for subadministrators with WebLayout rights:

1. From the Web Layout Editor menu, select **Options**, then **Query Results Pages**, then select the name of the page.
2. Click **Delete**.
3. When prompted, click **OK** to verify the deletion.

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