

**Managing System Settings and Processes**  
10g Release 3 (10.1.3.3.1)

May 2007

Managing System Settings and Processes, 10g Release 3 (10.1.3.3.1)

Copyright © 2007, Oracle. All rights reserved.

Contributing Authors: Deanna Burke

Contributors: Sandra Christiansen

The Programs (which include both the software and documentation) contain proprietary information; they are provided under a license agreement containing restrictions on use and disclosure and are also protected by copyright, patent, and other intellectual and industrial property laws. Reverse engineering, disassembly, or decompilation of the Programs, except to the extent required to obtain interoperability with other independently created software or as specified by law, is prohibited.

The information contained in this document is subject to change without notice. If you find any problems in the documentation, please report them to us in writing. This document is not warranted to be error-free. Except as may be expressly permitted in your license agreement for these Programs, no part of these Programs may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose.

If the Programs are delivered to the United States Government or anyone licensing or using the Programs on behalf of the United States Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the Programs, including documentation and technical data, shall be subject to the licensing restrictions set forth in the applicable Oracle license agreement, and, to the extent applicable, the additional rights set forth in FAR 52.227-19, Commercial Computer Software--Restricted Rights (June 1987). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

The Programs are not intended for use in any nuclear, aviation, mass transit, medical, or other inherently dangerous applications. It shall be the licensee's responsibility to take all appropriate fail-safe, backup, redundancy and other measures to ensure the safe use of such applications if the Programs are used for such purposes, and we disclaim liability for any damages caused by such use of the Programs.

Oracle, JD Edwards, PeopleSoft, and Siebel are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

The Programs may provide links to Web sites and access to content, products, and services from third parties. Oracle is not responsible for the availability of, or any content provided on, third-party Web sites. You bear all risks associated with the use of such content. If you choose to purchase any products or services from a third party, the relationship is directly between you and the third party. Oracle is not responsible for: (a) the quality of third-party products or services; or (b) fulfilling any of the terms of the agreement with the third party, including delivery of products or services and warranty obligations related to purchased products or services. Oracle is not responsible for any loss or damage of any sort that you may incur from dealing with any third party.

# Table of Contents



## Chapter 1: Introduction

Overview .....	1-1
About This Guide .....	1-1
Audience .....	1-2
What's New .....	1-2
Other Administrator Guides .....	1-3
Understanding the Content Server .....	1-4
Purpose .....	1-4
Users .....	1-5
Administration Utilities and Applets .....	1-5
Administration Interfaces .....	1-5
Applications .....	1-6
Utilities .....	1-6
Management Pages .....	1-6
Administration Page .....	1-7
Administration Applications .....	1-7
Running Administration Applications as Applets .....	1-7
Running Administration Applications in Stand-alone Mode .....	1-8
On Windows Systems .....	1-8
On UNIX Systems .....	1-9
Conventions .....	1-9

## Chapter 2: Configuring System Properties

Overview .....	2-1
About System Properties .....	2-2
Configuring General Options .....	2-4
System Properties: Options Tab .....	2-5
Admin Server: General Configuration Page .....	2-6
Revision Label Sequence .....	2-10

Revision Label Ranges . . . . .	2-10
Revision Examples . . . . .	2-10
Revision Configuration Settings . . . . .	2-11
Chunking Function . . . . .	2-11
Configuring the Chunking Function . . . . .	2-11
Configuring Content Security . . . . .	2-12
System Properties: Content Security Tab . . . . .	2-13
Admin Server: Content Security Configuration Page . . . . .	2-13
Configuring Internet Information . . . . .	2-14
System Properties: Internet Tab . . . . .	2-15
Admin Server: Internet Configuration Page . . . . .	2-15
Configuring the Database . . . . .	2-17
System Properties: Database Tab . . . . .	2-18
Changing the Database Driver Settings . . . . .	2-19
Configuring the Content Server . . . . .	2-20
System Properties: Server Tab . . . . .	2-21
Configuring Locales . . . . .	2-24
Date Format . . . . .	2-24
Configuring Paths . . . . .	2-25
System Properties: Paths Tab . . . . .	2-26

### **Chapter 3: Managing Multiple Content Servers with Admin Server**

Overview . . . . .	3-1
About the Admin Server . . . . .	3-2
Managing the Admin Server . . . . .	3-2
Starting and Stopping the Content Server . . . . .	3-3
Adding a Content Server . . . . .	3-3
Editing a Content Server . . . . .	3-4
Removing a Content Server . . . . .	3-4
Viewing Server Output . . . . .	3-4
Admin Server Interface Screen . . . . .	3-5
Admin Server Home Page . . . . .	3-6
Admin Server Output Page . . . . .	3-7
Add a New Content Server Page . . . . .	3-8
Add an Existing Local Content Server Page . . . . .	3-8
Add Remote Content Server . . . . .	3-9
Edit or Remove Content Server Page . . . . .	3-10
Add/Edit Content Server Configuration Page . . . . .	3-11
Specific Instance Page . . . . .	3-13
Content Server Output Page . . . . .	3-14

## Chapter 4: Configuring the Search Index

Overview .....	4-1
Variances in Indexing Tools and Methods .....	4-1
Working with the Search Index .....	4-2
About the Search Index .....	4-2
Using the Search Index .....	4-3
Updating the Search Index .....	4-3
Rebuilding the Collection .....	4-3
Configuring the Update or Rebuild .....	4-4
Disabling Full-Text Indexing .....	4-4
Indexing Interface Screens .....	4-5
Repository Manager: Indexer Tab .....	4-5
Automatic Update Cycle Screen .....	4-7
Collection Rebuild Cycle Screen .....	4-10
Actions Page .....	4-12
Text File Full-Text Indexing .....	4-12
Managing Zone Text Fields .....	4-12
About Zone Text Fields .....	4-13
Enabling and Disabling Zone Text Fields .....	4-14
Changing the MinFullTextFieldLength Variable .....	4-15
Disabling Database Search Contains Operator .....	4-16
Zone Fields Configuration Page .....	4-17
Indexing with Databases .....	4-18
Database-Supported File Formats .....	4-20
Searching Content Using the Oracle Query Optimizer Feature .....	4-21
About the Oracle Query Optimizer Feature .....	4-22
Query Optimization Process .....	4-23
How Reformatted Queries Optimize Searches .....	4-26
Types of Recognized Hints .....	4-27
Oracle Hints .....	4-28
Query Hints Syntax .....	4-29
Supported Search Operators and Keywords .....	4-30
Additional Supported Sort Constructs .....	4-31
The Hint Rules Table .....	4-31
The Hint Cache .....	4-37
Using Hint Rules .....	4-40
Adding and Enabling New Hint Rules .....	4-40
Editing Existing Hint Rules .....	4-41
Disabling Hint Rules .....	4-41
Enabling Hint Rules .....	4-41

Removing Hint Rules . . . . .	4-42
Using the Query Converter . . . . .	4-42
Converting a Data Source or Query . . . . .	4-43
Editing a Converted Data Source or Query . . . . .	4-44
Updating the Hint Cache . . . . .	4-44
Checking the Hint Cache for Existing Hints. . . . .	4-44
Modifying an Existing Hint Cache Query or Data Source Entry . . . . .	4-45
Removing a Hint Cache Query or Data Source Entry . . . . .	4-47
Oracle Query Interface Screens . . . . .	4-48
Hint Rules Configuration Page . . . . .	4-49
Hint Rule Editor . . . . .	4-50
Query Converter Page . . . . .	4-53
Hint Cache Updater Page . . . . .	4-56

## Chapter 5: Configuring a Web Server Filter

Overview . . . . .	5-1
Content Server's Use of a Web Server . . . . .	5-2
Web Servers . . . . .	5-2
Internet Information Services (IIS). . . . .	5-2
iPlanet/Sun ONE . . . . .	5-2
Apache . . . . .	5-3
Local Web Server Filter . . . . .	5-3
Filter Plug-Ins . . . . .	5-3
Plug-in Architecture . . . . .	5-4
WebUrlMap Feature . . . . .	5-5
Script Construction . . . . .	5-5
Supported Variables for Referencing. . . . .	5-6
Mapping Examples . . . . .	5-7
Managing Web Server Filter Options . . . . .	5-9
Setting Web Filter Configuration Options . . . . .	5-9
Viewing the Web Filter Log . . . . .	5-9
Configuring IIS for External Security . . . . .	5-9
Add/Edit URL Mapping Entries . . . . .	5-10
Web Server Filter Interface Screens . . . . .	5-11
Configure Web Server Filter Page. . . . .	5-12
WebUrlMaps Screen . . . . .	5-15

## Chapter 6: Connecting to Outside Entities with Providers

Overview . . . . .	6-1
About Providers . . . . .	6-2
Content Server Providers . . . . .	6-2
Adding an Appropriate Provider. . . . .	6-3

When to Add an Outgoing Provider . . . . .	6-3
When to Add a Database Provider . . . . .	6-4
When to Add an Incoming Provider. . . . .	6-5
When to Add a Preview Provider . . . . .	6-6
When to Add an LDAP Provider . . . . .	6-7
Managing Providers . . . . .	6-9
Adding an Outgoing Provider. . . . .	6-9
Adding a Database Provider . . . . .	6-11
Adding an Incoming Provider. . . . .	6-11
Adding a Preview Provider . . . . .	6-11
Editing Provider Information . . . . .	6-12
Deleting a Provider . . . . .	6-12
Provider Interface Screens. . . . .	6-13
Providers Page . . . . .	6-13
Provider Information Page. . . . .	6-15
Add/Edit Provider Page . . . . .	6-16
Outgoing Provider Page . . . . .	6-17
Database Provider Page . . . . .	6-20
Incoming Provider Page . . . . .	6-22
Preview Provider Page . . . . .	6-23
Ldap Provider Page. . . . .	6-25

## Chapter 7: Batchloading Content

Overview . . . . .	7-1
About Batch Loading . . . . .	7-1
File Records. . . . .	7-2
Actions . . . . .	7-3
Insert . . . . .	7-3
Insert Requirements . . . . .	7-4
Insert Example . . . . .	7-5
Delete . . . . .	7-7
Delete Requirements . . . . .	7-8
Delete Example. . . . .	7-8
Update . . . . .	7-8
Update Requirements . . . . .	7-10
Update Example 1. . . . .	7-12
Update Example 2. . . . .	7-13
Optional Parameters . . . . .	7-14
Custom Metadata Fields . . . . .	7-19
Sample Batch Load Files. . . . .	7-19
Preparing a Batch Load File. . . . .	7-20
About Preparing a Batch Load File . . . . .	7-20

Mapping Files . . . . .	7-21
Mapping File Formats . . . . .	7-21
Mapping File Values . . . . .	7-22
Creating a Batch Load File from the BatchBuilder Screen . . . . .	7-24
Creating a Mapping File. . . . .	7-25
Creating a Batch Load File from the Command Line. . . . .	7-26
Win32 Example . . . . .	7-27
UNIX Example. . . . .	7-27
Batch Interface Screens. . . . .	7-28
BatchBuilder Screen . . . . .	7-28
BatchBuilder Mapping List Screen. . . . .	7-30
Add BatchBuilder Mapping Screen . . . . .	7-31
Edit BatchBuilder Mapping Screen . . . . .	7-32
Add/Edit BatchBuilder Mapping Field Screen . . . . .	7-33
Batch Loader Application. . . . .	7-34
Running the Batch Loader . . . . .	7-35
About Running the Batch Loader. . . . .	7-36
Batch Loading from the Batch Loader Screen. . . . .	7-36
Batch Loading from the Command Line . . . . .	7-37
Win32 Example . . . . .	7-38
UNIX Example. . . . .	7-38
Using the IdcCommand Utility and Remote Access . . . . .	7-38
Batch Load Command Files . . . . .	7-39
Preparing for Remote Batch Loading . . . . .	7-39
Batch Loading Content as Metadata Only. . . . .	7-43
Batch Loader -console Command Line Switch . . . . .	7-44
Examples . . . . .	7-44
Adding a Redirect . . . . .	7-44
Correcting Batch Load Errors . . . . .	7-45
Optimizing Batch Loader Performance . . . . .	7-46
Example: Best Practice Case Study . . . . .	7-47

## Appendix A: Building a Web Site

Planning a Web Site. . . . .	A-1
About Planning a Web Site . . . . .	A-2
Defining the Site Structure and Displaying Criteria . . . . .	A-3
Task Sequence . . . . .	A-3
Working with Web Pages. . . . .	A-4
About Web Pages . . . . .	A-4
Local Page . . . . .	A-5
External URL. . . . .	A-5
Query . . . . .	A-5



Report . . . . .	A-6
Working With the Portal Page . . . . .	A-6
Update Portal Page Screen . . . . .	A-7
Updating the Portal Page . . . . .	A-8
Web Layout Editor Application . . . . .	A-8
Web Page Hierarchy Pane . . . . .	A-9
Page Properties Pane . . . . .	A-10
Page Links Pane . . . . .	A-11
Adding a New Web Page . . . . .	A-12
Editing Web Page Properties . . . . .	A-13
Creating a Local Page Link . . . . .	A-14
Creating an External URL Link . . . . .	A-15
Editing a Hierarchical Web Page Structure . . . . .	A-16
Working with Reports . . . . .	A-17
About Reports . . . . .	A-18
Defining an Active Report . . . . .	A-19
Defining a Historical Report . . . . .	A-19
Editing a Query Expression in an Active Report . . . . .	A-19
Query Interface Screens . . . . .	A-20
Edit Active Report Query Screen . . . . .	A-20
Writing Queries . . . . .	A-22
About Writing Queries . . . . .	A-23
Writing Directory Queries . . . . .	A-23
Writing Report Queries . . . . .	A-23
Creating a Query Link . . . . .	A-24
Editing the Query Expression in a Query Link . . . . .	A-27
Adding a Query Results Page . . . . .	A-28
Editing a Query Results Page . . . . .	A-30
Deleting a Query Results Page . . . . .	A-30
Writing Queries With Tamino . . . . .	A-31
About Writing Queries with Tamino . . . . .	A-31
Writing Directory Queries . . . . .	A-32
Tamino Operators . . . . .	A-32
Tamino Wildcards . . . . .	A-32
Tamino Full-text Search Operators . . . . .	A-33
Tamino Query Examples . . . . .	A-34
Writing Report Queries . . . . .	A-34
Creating a Query Link . . . . .	A-36
Editing the Query Expression in a Query Link . . . . .	A-40
Adding a Query Results Page . . . . .	A-40
Editing a Query Results Page . . . . .	A-42

Deleting a Query Results Page .....	A-42
-------------------------------------	------

## **Appendix B: Third Party Licenses**

Overview .....	B-1
Apache Software License .....	B-1
W3C® Software Notice and License .....	B-2
Zlib License .....	B-3
General BSD License .....	B-4
General MIT License .....	B-5
Unicode License .....	B-5
Miscellaneous Attributions .....	B-6

# INTRODUCTION

## OVERVIEW

---

This chapter covers the following topics:

- ❖ [About This Guide](#) (page 1-1)
- ❖ [Audience](#) (page 1-2)
- ❖ [What's New](#) (page 1-2)
- ❖ [Other Administrator Guides](#) (page 1-3)
- ❖ [Understanding the Content Server](#) (page 1-4)
- ❖ [Administration Utilities and Applets](#) (page 1-5)
- ❖ [Administration Applications](#) (page 1-7)
- ❖ [Conventions](#) (page 1-9)

## ABOUT THIS GUIDE

---

This guide describes tasks that impact system settings and processes on an ongoing basis. These tasks include managing system properties, multiple content servers, the search index, the web filter, providers, and the content batchload process.

## AUDIENCE

---

This guide is intended for people who are responsible for managing system configurations such as configuring providers, using the Admin Server, and adjusting database, localization, or other system properties for Content Server.

## WHAT'S NEW

---

This section describes the features that have been added to this version of Content Server and are included in the Managing System Settings and Processes guide.

### ❖ Database Search Contains Operator Feature:

The Database Search Contains Operator feature enables you to use the Contains search operator to search text fields when performing database and database full-text searches with SQL Server and Oracle. To use this feature, you must first enable the text fields (called *zone text fields*) that can be queried using the Contains search operator. When a text field is added as a zone text field, the text within the field is parsed and a full-text index for the field is created in the database. See [Managing Zone Text Fields](#) (page 4-12).



**Note:** The Database Search Contains Operator feature is available if you elect to install and enable the feature after installing Content Server.

### ❖ Oracle Query Optimizer Feature:

The Oracle Query Optimizer feature is designed to improve your Oracle database's performance by removing inefficiencies in user queries. Generally, Oracle does not select the best execution plan for certain types of user queries. To counter this, the Oracle Query Optimizer feature adds hints to queries that force Oracle to perform searches more efficiently.

The hints are based on an intrinsic knowledge of Content Server's table data distribution and its index selectivity. To take advantage of this knowledge, the Oracle Query Optimizer feature uses a pre-defined hint rules table to analyze the database query and then add appropriate hints to the query. In turn, the added hints improve Oracle's search performance. See [Searching Content Using the Oracle Query Optimizer Feature](#) (page 4-21).



**Note:** The Oracle Query Optimizer functionality is available if you elect to enable the feature after installing Content Server.

### ❖ **Web URL Map Feature**

The WebUrlMap feature enables you to map shortened URLs to other URLs in Content Server using a substitution script for the mapping. That means that you can map long URLs to abbreviated versions. See [WebUrlMap Feature](#) (page 5-5).

## OTHER ADMINISTRATOR GUIDES

---

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.

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

### ❖ *Getting Started (PDF and HTML)*

This document provides an overview of the Oracle suite of products and general guidelines for their setup and implementation.

### ❖ *Managing Security and User Access Guide (PDF and HTML)*

This document discusses tasks related to user administration, such as planning and implementing a security model, adding and deleting users, and implementing accounts. Additionally, it explains how to integrate external user bases with Content Server. The most common security integrations—Active Directory and LDAP—are described in detail.

### ❖ *Managing Repository Content Guide (PDF and HTML)*

This guide discusses tasks that affect how the content is displayed or handled, such as creating customized content types, using schemas, building a web site, or moving content through a workflow.

### ❖ *Managing System Settings and Processes Guide (PDF and HTML)*

This guide describes tasks that impact system configuration on an ongoing basis such as managing revisions and indexing, configuring providers, and working with system properties.

### ❖ *Administration Tutorials (PDF and HTML)*

This document contains administration tutorials for people who need to administer (part of) a Oracle-based content management solution.

### ❖ *Enterprise Search Administration and User Guide (PDF and HTML)*

This document provides management and administration information for Enterprise

Search. This enables multiple content server instances to be searchable as if they were a single instance.

❖ *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.

❖ *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. T



**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.

## UNDERSTANDING THE CONTENT SERVER

---

This section covers these topics:

❖ [Purpose](#) (page 1-4)

❖ [Users](#) (page 1-5)

### Purpose

---

Use Content Server for sharing, managing, and distributing business information using a website 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 virtually any type of file—letters, reports, engineering drawings, spreadsheets, manuals, sales literature, and more—under one powerful system of knowledge distribution.

## Users

---

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.
- ❖ **Sub-administrators:** 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 sub-administrators. They administer portions of the software that correspond to the rights that the system administrator assigns to them.

## ADMINISTRATION UTILITIES AND APPLETS

---

This section covers these topics:

- ❖ [Administration Interfaces](#) (page 1-5)
- ❖ [Administration Page](#) (page 1-7)



**Note:** Please see *General Browser Considerations* in your Content Server Installation Guide for information on Java-browser plugins and applet display issues.

## Administration Interfaces

---

The system provides administration applications, utilities, and pages to configure and maintain the Content Server system operation.

## Applications

The following applications are described in this guide and can be started as stand-alone applications at the server, as applets through a browser, or from the Apps menu in each of the tools:

- ❖ **Repository Manager**—Perform file diagnostics, file management functions, search data reindexing, and subscription management functions. See [Configuring the Search Index](#) (page 4-1).
- ❖ **WebLayout Editor**—Build a web site, work with reports, write queries. See [Building a Web Site](#) (page A-1).

## Utilities

The following tools can be started only as stand-alone applications from the computer where the content server is installed:

- ❖ **Batch Loader**—Update or check in a large number of content items at one time. See [Batchloading Content](#) (page 7-1).
- ❖ **System Properties**—Configure the system options and functionality of the content server. See [Configuring System Properties](#) (page 2-1).

## Management Pages

The following pages can be accessed by using a browser and selecting the **Administration** link or accessing the options directly from the Administration tray:

- ❖ **Admin Server**—Configure system-wide settings for multiple content server instances. See [Managing Multiple Content Servers with Admin Server](#) (page 3-1).
- ❖ **Filter Administration**—Configure and troubleshoot the web server filter communication with Content Server. See [Configuring a Web Server Filter](#) (page 5-1).
- ❖ **Providers**—Add providers, configure provider information, and test providers. See [Connecting to Outside Entities with Providers](#) (page 6-1).



## Administration Page

---



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

## ADMINISTRATION APPLICATIONS

---

You can launch Content Server's administration applications using these methods:

- ❖ [Running Administration Applications as Applets](#) (page 1-7)
- ❖ [Running Administration Applications in Stand-alone Mode](#) (page 1-8)

### 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](#) (page 1-8).

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.

## 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.

### 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 administration [Applications](#) (page 1-6), select **Start—Programs—Content Server—instance—Applications—application**.
  - To run one of the administration [Utilities](#) (page 1-6), 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.



**Tech 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.

## On UNIX Systems

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

1. Navigate to the `<Install_Dir>/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:

```
%<Install_Dir>%/bin/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.

## CONVENTIONS

---

- ❖ The notation `<Install_Dir>/` is used to refer to the location on your system where Content Server is installed.
- ❖ Forward slashes (/) are used to separate the directory levels in a path name. A forward slash will always appear after the end of a directory name.
- ❖ Notes, technical tips, important notices, and cautions use these conventions:

Symbols	Description
	This is a note. It is used to bring special attention to information.

Symbols	Description
	This is a technical tip. It is used to identify information that can be used to make your tasks easier.
	This is an important notice. It is used to identify a required step or required information.
	This is a caution. It is used to identify information that might cause loss of data or serious system problems.

# CONFIGURING SYSTEM PROPERTIES

## OVERVIEW

---

This chapter covers these topics:

### **Concepts**

- ❖ [About System Properties](#) (page 2-2)

### **Tasks**

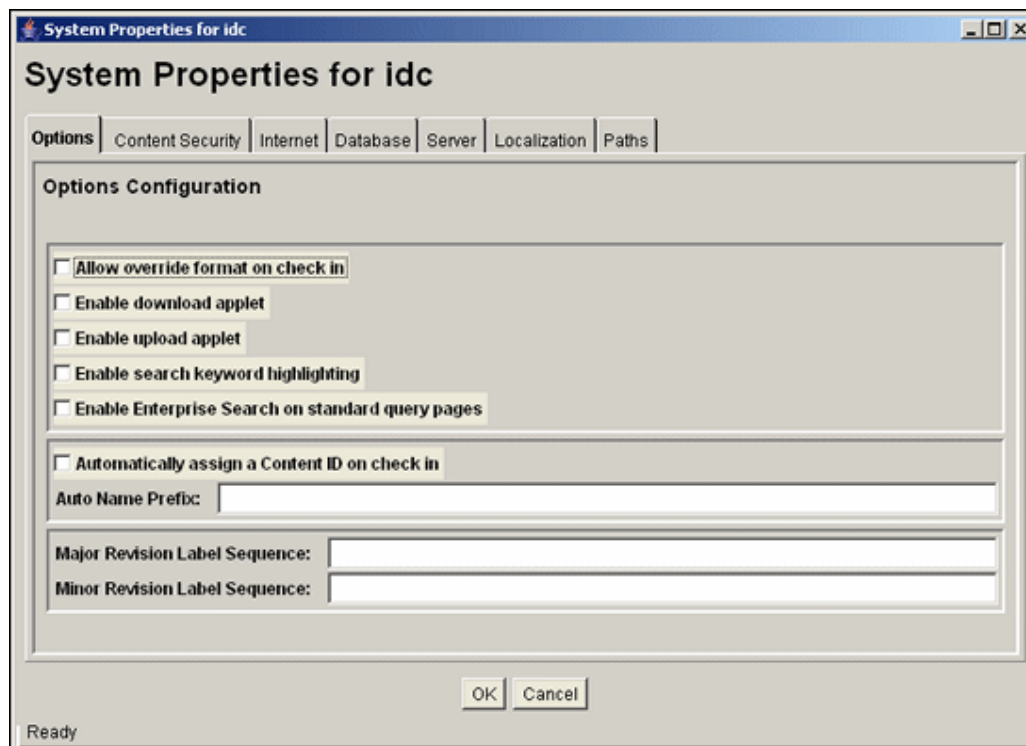
- ❖ [Configuring General Options](#) (page 2-4)
- ❖ [Configuring Content Security](#) (page 2-12)
- ❖ [Configuring Internet Information](#) (page 2-14)
- ❖ [Configuring the Database](#) (page 2-17)
- ❖ [Configuring the Content Server](#) (page 2-20)
- ❖ [Configuring Locales](#) (page 2-24)
- ❖ [Configuring Paths](#) (page 2-25)



**Note:** Information on configuring locales (on the Localization tab of the System Properties screen) can be found in the *International Considerations Guide*.

## ABOUT SYSTEM PROPERTIES

---



**Important:** Regardless of which method you use to modify system properties, you must restart the content server for any configuration changes to take effect.

System properties are system-wide settings that enable you to tailor Content Server to your particular requirements. System properties are set during installation and are generally updated occasionally, or as needed, in contrast to other administration tools, which are used more regularly for maintenance of users and content. There are three main ways to interact with system properties:

- ❖ The Admin Server enables you to configure multiple instances and remote instances. It also enables you to stop and start a content server, and to enable and disable custom features.
- ❖ The System Properties utility enables you to configure a specific content server instance from the local computer where the instance is installed.
- ❖ Most system properties settings correspond to a configuration variable in one of the following configuration files:

- `<Install_Dir>/config/config.cfg`
- `<Install_Dir>/bin/intradoc.cfg`
- `<Install_Dir>/search/search.cfg`

You can edit these files directly in a text editor; however, it is recommended that you make changes through the Admin Server or System Properties tool to ensure that the settings are entered correctly. See the *Idoc Script Reference Guide* for more information on configuration variables.



**Tech Tip:** There are many techniques that you can use to optimize the performance of Content Server. One of the types of tuning involves changing default parameters and software settings that affect the core Content Server performance. System optimization and performance tuning is often accomplished by adjusting system settings and configuration variables or tuning resources such as databases and indexes.


For example, as the content in your Content Server instance increases, you may experience a shortage of available space. In this case, moving the vault, weblayout, and search index directories to another drive with more space can help alleviate storage problems. Moving these directories requires adding entries into the `<Install_Dir>/bin/intradoc.cfg` file.

For more information about alleviating storage problems, see the system architecture tuning information in the *Content Server Performance Tuning Guide*. This guide provides numerous additional techniques that you can implement to optimize your Content Server instance.

You do not have to log in as the system administrator to access the System Properties application. You only need access to the local computer where the content server is installed.

The System Properties application is an administration application that is used to configure system-wide settings from the system on which the content server instance is installed. To access the System Properties application, see [Running Administration Applications in Stand-alone Mode](#) (page 1-8).

Feature	Description
Options tab	Used to set optional functionality for the content server. See <a href="#">Configuring General Options</a> (page 2-4).
Content Security tab	Used to set options related to content item security. See <a href="#">Configuring Content Security</a> (page 2-12).

Feature	Description
Internet tab	Used to set options related to content server interaction with web entities. See <a href="#">Configuring Internet Information</a> (page 2-14).
Database tab	Used to set database options. See <a href="#">Configuring the Database</a> (page 2-17).
Server tab	Used to set optional functionality for the content server. See <a href="#">Configuring the Content Server</a> (page 2-20).
Localization tab	See the <i>Oracle International Considerations Guide</i> .
Paths tab	Used to set content server directory paths. See <a href="#">Configuring Paths</a> (page 2-25).
OK button	Saves the changes and closes the System Properties screen.  <b>Important:</b> You must restart the content server for any changes to take effect.
Cancel button	Closes the System Properties screen without saving any changes.

## CONFIGURING GENERAL OPTIONS

You can set general options on the [System Properties: Options Tab](#) (page 2-5) or on the [Admin Server: General Configuration Page](#) (page 2-6).



**Important:** You must restart Content Server for any configuration changes to take effect.



## System Properties: Options Tab

The screenshot shows a Windows-style dialog box titled "System Properties for idc". It has a tabbed interface with the "Options" tab selected. Other tabs include "Content Security", "Internet", "Database", "Server", "Localization", and "Paths". The "Options Configuration" section contains several settings:

- ☐ Allow override format on check in
- ☐ Enable download applet
- ☐ Enable upload applet
- ☐ Enable search keyword highlighting
- ☐ Enable Enterprise Search on standard query pages
- ☐ Automatically assign a Content ID on check in

Below these checkboxes are three text input fields:

- Auto Name Prefix: [ ]
- Major Revision Label Sequence: [ ]
- Minor Revision Label Sequence: [ ]

At the bottom right are "OK" and "Cancel" buttons. The status bar at the bottom left shows "Ready".

## Admin Server: General Configuration Page

General Configuration

☐ Allow override format on check in  
☐ Enable download applet  
☐ Enable upload applet  
☐ Enable search keyword highlighting  
☐ Enable Enterprise Search on standard query pages

---

☐ Automatically assign a content ID on check in  
 Auto Number Prefix

---

Major Revision Label Sequence:   
 Minor Revision Label Sequence:

---

☐ Enable Java Server Page (JSP)  
 JSP Enabled Groups:

---



Additional Configuration Variables:
 

SearchIndexerEngineName=DATABASE.METADATA  
 WebServer=iis  
 IdcAdminServerPort=4440  
 IntradocServerPort=4444  
 InstallDefinitionFile\_cs=cs\_install\_info.htm



---

To access this page, click on **Admin Server** from the Administration tray. Click on the content server instance you want to access and select **General Configuration** from the **Options for <instance>** menu.

In the following tables, the term in parentheses is the corresponding configuration setting defined in the <Install\_Dir>/config/config.cfg file.

Feature	Description
 <b>Note:</b> If you plan to use the Batch Loader to update and insert a large number of files on your content server system at one time, you will need to create a batch load file. Two of the optional parameters that you can include in your batch load file are the <a href="#">primaryOverride Format</a> (page 7-18) and <a href="#">alternateOverride Format</a> (page 7-18). However, these options will only work as parameters in the batch load file if you enable the IsOverrideFormat configuration variable. You can set this variable by selecting the <a href="#">Allow override format on check in check box</a> (page 2-7) in the System Properties application.	
Allow override format on check in check box (IsOverrideFormat)	<p><b>Clear</b>—Users cannot select the format of a document during checkin. This is the default.</p> <p><b>Selected</b>—Users can select the format of a document during checkin. This is useful in the following situations:</p> <ul style="list-style-type: none"> <li>• When an application's default extension is not used for a file name. For example, a Microsoft Word document named <i>customer.ltr</i> does not have the default application extension <i>.doc</i>, but a contributor could select <i>Microsoft Word Document</i> from the Formats list on the checkin page to tell the content server how to convert the file.</li> <li>• When the user needs to decide how the file should be converted and indexed. For example, say you have set Corel WordPerfect documents to be passed through as text files. If a contributor leaves the Format option on the checkin page as <b>use default</b>, the file is converted to text and full-text indexed automatically. If the contributor selects <b>Corel WordPerfect Document</b>, the file is passed through in its native format and is not full-text indexed.</li> </ul>
 <b>Note:</b> If the upload or download applet is enabled in the System Properties application or Admin Server, users can enable and disable the applet individually on their User Profile page. If an applet is disabled at the system level, the applet field is not displayed on User Profile pages.	

Feature	Description
Enable download applet check box (DownloadApplet)	<p><b>Selected</b>—Users can select multiple files to check out or download at the same time. See “Checking Out Multiple Files” in the <i>Content Server User Guide</i>.</p> <p><b>Clear</b>—Users cannot check out or download multiple files. This is the default.</p>
Enable upload applet check box (MultiUpload)	<p><b>Selected</b>—Users can check in multiple files as a single Zip file. See “Checking In Multiple Files” in the <i>Content Server User Guide</i> and <a href="#">Chunking Function</a> (page 2-11).</p> <p><b>Clear</b>—Users cannot check in multiple files. This is the default.</p>
Enable search keyword highlighting check box (EnableDocumentHighlight)	<p><b>Selected</b>—All full-text search terms are highlighted in returned PDF, HTML, and text documents. This is the default.</p> <p><b>Clear</b>—Full-text search terms are not highlighted. This can shorten the time required to view a file from the Search Results page.</p>
Enable Enterprise Search on Standard query pages check box (EnterpriseSearchAsDefault)	<p><b>Selected</b>—Enterprise Search fields are displayed on search pages. The Enterprise Search add-on module must be purchased and installed.</p> <p><b>Clear</b>—Enterprise Search fields are not displayed on search pages. This is the default.</p>
Automatically assign a document name on check in check box (IsAutoNumber)	<p><b>Selected</b>—Content IDs are generated automatically as six-digit, sequential numbers.</p> <p><b>Clear</b>—A Content ID must be entered by the user during checkin. This is the default.</p>
Auto Name/Number Prefix field (AutoNumberPrefix)	If automatic Content ID generation is enabled, the string specified in this field is added as a prefix to the six-digit, sequential number.

Feature	Description
Major Revision Label Sequence field (MajorRevSeq)	Specifies how the first number or letter in a revision number is incremented. See <a href="#">Revision Label Sequence</a> (page 2-10).
Minor Revision Label Sequence field (MinorRevSeq)	Specifies how the optional second number or letter in a revision number is incremented. See <a href="#">Revision Label Sequence</a> (page 2-10).
Enable Java Server Page (Jsp) check box (IsJspServerEnabled)	<p><b>Selected</b>—Internal JSP support is enabled in the content server.</p> <p><b>Clear</b>—Internal JSP support is disabled.</p> <p>See the <i>Java Server Page and JavaBean Guide</i> for more information.</p> <p> <b>Note:</b> This check box is displayed on the Admin Server General Configuration page, but not on the System Properties Options tab. See <a href="#">System Properties: Server Tab</a> (page 2-21).</p>
Jsp Enabled Groups field (JspEnabledGroups)	<p>Specifies the security groups that are enabled for internal JSP support.</p> <p>See the <i>Java Server Page and JavaBean Guide</i> for more information.</p> <p> <b>Note:</b> This field is displayed on the Admin Server General Configuration page, but not on the System Properties Options tab. See <a href="#">System Properties: Server Tab</a> (page 2-21).</p>
Additional Configuration Variables field (N/A)	<p>Used to edit variables in the content server configuration file.</p> <ul style="list-style-type: none"> <li>Changes you make in this field will be reflected in the <code>&lt;Install_Dir&gt;/config/config.cfg</code> file when the content server is restarted.</li> <li>Placing a # symbol at the beginning of a line comments out that line.</li> </ul>

## Revision Label Sequence

---

The metadata field named *Revision* has a default revision number sequence of 1, 2, 3, 4, 5, and so forth. This number increments automatically for each revision of a document.

You can override the Revision default by changing the definition of the revision label. The revision label consists of two parts: a major and minor revision sequence. The **Major Revision Label Sequence** is the first number or letter and the **Minor Revision Label Sequence** follows. For example, in the revision sequence 1a, 1b, 1c, 2a, 2b, 2c, 3a, 3b, 3c, and so forth, the numbers 1, 2, 3 are the major revision sequence and a, b, c are the minor revision sequence.

## Revision Label Ranges

Both the major and minor revision sequences are defined as a range of numbers or letters. The major sequence can have multiple ranges, while the minor sequence can only have one range.

The following are the restrictions on defining the range:

- ❖ Numbers or letters can be used, but not both. For example, 1-10 is a valid range but A-10 is not a valid range.
- ❖ Letter ranges can have only one letter. For example, A-Z is a valid range but AA-ZZ is not a valid range.

## Revision Examples

The following are examples of different revision sequences and how you would define the major and minor revision entries in the config.cfg file.

### Example 1

MajorRevSeq=A-D,1-99

The revision sequence is A, B, C, D, 1, 2, 3, 4, and so forth.

### Example 2

MajorRevSeq=1-99

MinorRevSeq=a-c

The revision sequence is 1a, 1b, 1c, 2a, 2b, 2c, 3a, 3b, 3c, and so forth.

## Revision Configuration Settings

To change the default revision sequence manually in the `<Install_Dir>/config/config.cfg` file, enter the following name/value pairs:

- ❖ `MajorRevSeq=range1,range2,range3...`
- ❖ `MinorRevSeq=range`

where *range1,range2,range3...* and *range* are the defined range sequence.

## Chunking Function

Content Server's *Chunking* function protects large data transfers from transfer failures by dividing data into chunks and transferring one chunk at a time. If a transfer fails, all chunks transferred to the content server prior to failure are saved, and the transfer can be resumed from the point of failure.



**Note:** If the client session using the Chunking function is killed, either by timeout or by closing the client browser, the transfer will fail.

You can use the Chunking function in two ways:

- ❖ Use Chunking with the upload applet.
- ❖ Use Chunking with an HTTP provider. See the Proxy Connections feature in the Extras/ProxyConnections/ directory on the Content Server DVD.

## Configuring the Chunking Function

To enable and configure the Chunking function:

1. Enable the upload applet or the HTTP provider.
  - To enable the upload applet, see [Configuring General Options](#) (page 2-4).
  - To create an HTTP provider, see the Proxy Connections feature, which is located in the Extras/ProxyConnections/ directory on the Content Server DVD.
2. Set the following configuration settings in the Additional Configuration Variables box on the [Admin Server: General Configuration Page](#) (page 2-6), or in the `<Install_Dir>/config/config.cfg` file:
 

```
DisableHttpUploadChunking=false
AppletChunkThreshold=<size in bytes>
AppletChunkSize=<size in bytes>
```

The `AppletChunkSize` setting sets the size of the individual chunks. The `AppletChunkThreshold` setting sets the minimum file size that will use the Chunking function. Both of these values default to 1M.

3. To debug the Chunking function, set `ChunkedRequestTrace=true`.

This enables you to view the chunked requests on [Content Server Output Page](#) (page 3-14).

4. Save the changes.
5. Restart the content server.

## CONFIGURING CONTENT SECURITY

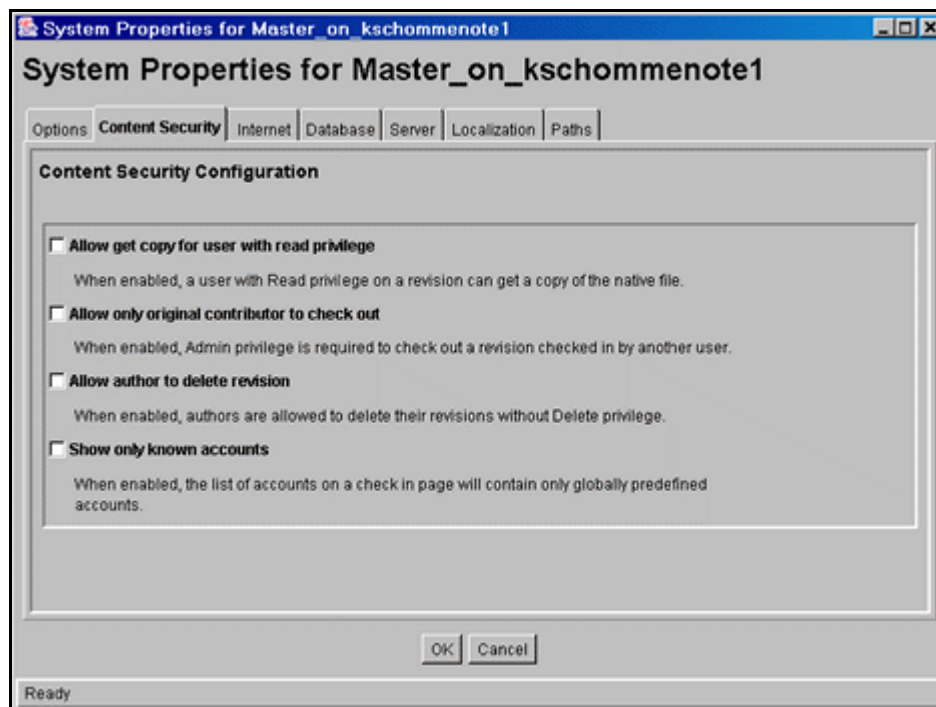
---

You can set content security options on the [System Properties: Content Security Tab](#) (page 2-13) or on the [Admin Server: Content Security Configuration Page](#) (page 2-13).



**Important:** You must restart the content server for any configuration changes to take effect.

### System Properties: Content Security Tab





## Admin Server: Content Security Configuration Page

### Content Security Configuration

☐ **Allow get copy for user with read privilege**  
When enabled, a user with Read privilege on a content item can get a copy of the native file.

☐ **Allow only original contributor to check out**  
When enabled, Admin privilege is required to check out a content item checked in by another user.

☐ **Allow author to delete revision**  
When enabled, authors are allowed to delete their revisions without delete privilege.

☐ **Show only known accounts**  
When enabled, the list of accounts on a check in page will contain only globally predefined accounts.

In the following tables, the term in parentheses is the corresponding configuration setting defined in the <Install\_Dir>/config/config.cfg file.

Feature	Description
Allow get copy for user with read privilege check box (GetCopyAccess)	<p><b>Selected</b>—Users with only Read permission to a content item's security group can get a copy of the native file.</p> <p><b>Clear</b>—Users with only Read permission to a content item's security group cannot get a copy of the native file.</p>
Allow only original contributor to check out check box (ExclusiveCheckout)	<p><b>Selected</b>—Only the Author or a user with Admin permission to a content item's security group can check out the content item.</p> <p><b>Clear</b>—Any user with Write permission to a content item's security group can check out the content item.</p>
Allow author to delete revision check box (AuthorDelete)	<p><b>Selected</b>—The Author of a content item can delete the content item, even if they do not have Delete permission to the content item's security group.</p> <p><b>Clear</b>—All users must have Delete permission to a content item's security group to delete the content item.</p>

Feature	Description
Show only known accounts check box (ShowOnlyKnownAccounts)	<p><b>Selected</b>—Only predefined accounts appear in the Accounts option list on checkin and search pages.</p> <p><b>Clear</b>—User-defined accounts and predefined accounts appear in the Accounts option list on checkin and search pages.</p>

## CONFIGURING INTERNET INFORMATION

You can set Internet options on the [System Properties: Internet Tab](#) (page 2-15) or on the [Admin Server: Internet Configuration Page](#) (page 2-15).



**Important:** You must restart the content server for any configuration changes to take effect.

### System Properties: Internet Tab

**System Properties for Master\_on\_ref1**

Options | Content Security | **Internet** | Database | Server | Localization | Paths

**Internet Configuration**

HTTP Server Address:

Mail Server:

Administrator Mail Address:

SMTP Port:

Http Relative Web Root:

☐ Use Microsoft Security

☒ NT Domain Security (NTLM) ☐ Active Directory Security (ADSI)

Check the "Use Secure Sockets Layer" checkbox only if you are using a Secure Sockets Layer (SSL) enabled web server.

☐ Use Secure Sockets Layer

OK Cancel

Ready

## Admin Server: Internet Configuration Page

Internet Configuration	
Http Address:	test141:80
Mail Server:	mspexchange2.stellent.com
Administrator Mail Address:	matt.zelen@stellent.com
SMTP Port:	25
Http Relative Web Root:	/idc/
Use Microsoft Security:	<input checked="" type="radio"/> None <input type="radio"/> NT Domain Security <input type="radio"/> Active Directory Security
Use Secure Sockets Layer:	False

In the following tables, the term in parentheses is the corresponding configuration setting defined in the `<Install_Dir>/config/config.cfg` file.

Feature	Description
HTTP Server Address field* (HttpServerAddress)	The name of the web server.
Mail Server field (MailServer)	The e-mail server used to send e-mail notifications from the content server. This generally takes the form of <i>mail.company.com</i> . If applicable, make sure to allow for sending mail through a firewall.
Administrator Mail Address field (SysAdminAddress)	The e-mail address that the content server uses to send e-mail notifications. This address will receive returned messages if delivery failures occur.
SMTP Port field* (SmtpPort)	The port used for SMTP communications. This is typically 25, but consult your network system administrator for any changes.
Http Relative Web Root field* (HttpRelativeWebRoot)	The relative web root that is used by the web server to resolve URLs to files in the <code>&lt;Install_Dir&gt;/weblayout/</code> directory.

Feature	Description
Use Microsoft Security check box/option (NtlmSecurityEnabled)	<b>Selected</b> —User information stored in an external system is used to assign user credentials in the content server. <b>Clear</b> —All users are defined in the content server database.
NT Domain Security (NTLM) option (UseNtlm)	An NTLM (NT LAN Manager) system is used to assign user credentials in the content server.
Active Directory Security (ADSI) option (UseAdsi)	An Active Directory system is used to assign user credentials in the content server.
Use Secure Sockets Layer check box* (UseSSL)	<b>Selected</b> —A Secure Sockets Layer (SSL)-enabled web server is being used. <b>Clear</b> —A Secure Sockets Layer (SSL)-enabled web server is not being used.

\* For security reasons, these fields cannot be changed from the Admin Server. You must change these fields using the standalone application.

## CONFIGURING THE DATABASE

You can set JDBC (Java Database Connectivity) configuration options on the [System Properties: Database Tab](#) (page 2-18).



**Important:** You must restart the content server for any configuration changes to take effect.

- ❖ For security reasons, the Admin Server cannot be used to configure the database. You must use the standalone application to configure the database.
- ❖ Database options are configured automatically during installation as long as there are no network errors that make it impossible for the system to connect to the database. You need to manually configure the database only if you change databases or if the system could not find the content server database during installation.

- ❖ You can set database options for SQL, Oracle, Sybase, Informix, and MSDE (not recommended for production environments). If you are using the runtime version of Microsoft Access, there are no database configuration options to set.
- ❖ For more information on configuring databases with Content Server, see the *Content Server Installation Guide for Windows* or the *Content Server Installation Guide for UNIX*.



**Tech Tip:** Importing a Large Archive Using an Oracle Database: When using an Oracle database running on a client site, it is important to make sure that the **Oracle Thin JDBC Driver** option is selected when importing a large archive. This is mainly a performance issue involving type 4 Oracle drivers.

## System Properties: Database Tab

System Properties for Master\_on\_kschommenote1

Options | Content Security | Internet | **Database** | Server | Localization | Paths

**Database Configuration**

☒ Use Java Database Connectivity

☒ Sun ODBC/JDBC Driver
 ☐ Sybase JDBC Driver

☐ Oracle Thin JDBC Driver
 ☐ Informix JDBC Driver

☐ Oracle OCI Driver
 ☐ Other JDBC Driver


☐ Enable database preserve case

JDBC Driver Name: sun.jdbc.odbc.JdbcOdbcDriver  
 JDBC Connection String: JDBC:ODBC:SQLForMaster\_on\_kschommenote1\_7  
 JDBC User Name: sa  
 JDBC User Password: \*\*\*

OK Cancel

Ready

In the following tables, the term in parentheses is the corresponding configuration setting defined in the `<Install_Dir>/config/config.cfg` file.

Feature	Description
Use Java Database Connectivity check box (IsJdbc)	<p><b>Selected</b>—JDBC is enabled, and the options are active. This is the default.</p> <p><b>Clear</b>—JDBC is disabled.</p>
JDBC options (N/A)	<p>The type of database driver.</p> <ul style="list-style-type: none"> <li>For all options except <b>Other JDBC Driver</b>, the JDBC Driver Name and JDBC Connection String are entered automatically.</li> <li>For the <b>Other JDBC Driver</b> option, you must enter the correct JDBC Driver Name and JDBC Connection String.</li> </ul>
Enable database preserve case check box (DatabasePreserveCase)	<p><b>Selected</b>—The database is case sensitive (such as Oracle, Informix).</p> <p><b>Clear</b>—The database is not case sensitive.</p>
JDBC Driver Name field (JdbcDriver)	<p>The name of the JDBC driver.</p> <ul style="list-style-type: none"> <li>For all options except <b>Other JDBC Driver</b>, the correct name is entered automatically.</li> <li>For the <b>Other JDBC Driver</b> option, you must enter the correct driver name.</li> </ul>
JDBC Connection String field (JdbcConnectionString)	<p>The connection string for the JDBC driver.</p> <ul style="list-style-type: none"> <li>For all options except <b>Other JDBC Driver</b>, the correct connection string is entered automatically.</li> <li>For the <b>Other JDBC Driver</b> option, you must enter the correct connection string.</li> </ul> <p> <b>Tech Tip:</b> The connection string format is <b>JDBC:ODBC:name</b>, where <i>name</i> is the System Data Source Name. To find this name on a Windows machine, select <b>Start—Programs—Administrative Tools—Data Sources (ODBC)</b>, and select the System DSN tab on the ODBC Data Source Administrator screen. The System Data Source Names are displayed on this tab.</p>

Feature	Description
JDBC User Name field (JdbcUser)	The user name that owns the tables inside the database.
JDBC User Password field (JdbcPassword)	The password for the user name that owns the tables inside the database.

## Changing the Database Driver Settings

You can update or edit your database settings as necessary to ensure that these system settings are correctly tailored for your Content Server requirements. For this reason, you might need to change your database driver settings if you are switching to a different driver. For example, you might need to switch to a Microsoft SQL Server JDBC driver to integrate the iMarkup application.

By default, when Microsoft SQL Server JDBC drivers are installed, one or more spaces are included in the name of the directory where the drivers are located. After reconfiguring the Content Server to use the Microsoft JDBC driver, the spaces in the driver's directory will cause a fatal error when you try to restart Content Server.

To resolve this problem:

1. Move the Microsoft SQL Server JDBC driver files to a directory that does not contain spaces in its name.
2. Edit the CLASSPATH variable in the *intradoc.cfg* file and ensure that it points to the new directory:  
  

```
<Install_Dir>/bin/intradoc.cfg
```
3. Restart the Content Server to apply the changes.

## CONFIGURING THE CONTENT SERVER

---

You can set content server options on the [System Properties: Server Tab](#) (page 2-21). For security reasons, the Admin Server cannot be used to configure these options. You must use the standalone application to configure options.



**Caution:** If you do not use a Hostname filter, IP Address filter, or some other network-based security, you will have a security hole in your content server instance. For example, with no login, any user with in-depth knowledge of the system could create or modify any other user to have sysadmin access.



**Important:** You must restart the content server for any configuration changes to take effect.

## System Properties: Server Tab

System Properties for Master\_on\_cnimmonote

Options | Content Security | Internet | Database | **Server** | Localization | Paths

**Server Configuration**

System Locale: English-US

System Timezone: Detect timezone automatically (America/Chicago)

Instance Menu Label: Master\_on\_cnimmonote

Instance Description: Master\_on\_cnimmonote

Hostname Filter:

IP Address Filter:

☐ Execute Java Server Page (Jsp)


Jsp Enabled Groups:



OK Cancel

In the following tables, the term in parentheses is the corresponding configuration setting defined in the `<Install_Dir>/config/config.cfg` file.



Feature	Description
System Locale list (SystemLocale)	<p>Specifies how the content server handles a number of language-specific issues such as the language of the user interface, stemming rules, sort order, and date/time format.</p> <p>See the <i>Content Server Installation Guide for Windows</i> and the <i>Content Server Installation Guide for UNIX</i> for more information on system locales.</p>
System Timezone list (SystemTimeZone)	<p>The time zone in which the content server machine is located. The specified time zone can be used to present times relative to other time zones, such as correcting for Daylight Savings Time, or presenting the date and time of a content item on a content server in North America to users in Europe.</p> <p>If the <b>Detect timezone automatically</b> option is selected, a time zone is not specified in the configuration file, and the content server uses the time zone set for the computer's operating system.</p> <p>See the <i>Content Server Installation Guide for Windows</i> and the <i>Content Server Installation Guide for UNIX</i> for more information on time zone settings.</p>
Instance Menu Label field (InstanceMenuLabel)	The instance name that is displayed in the Windows Start menu.
Instance Description field (InstanceDescription)	Not currently used.

Feature	Description
 <b>Note:</b> Hostname Filter or IP Address filter values must be set to allow communication with the content server in the following situations: <ul style="list-style-type: none"> <li>Running Inbound Refinery and PDF Converter (even on the same physical machine as the content server).</li> <li>Transferring content server archives between computers.</li> <li>Configurations where the web server and the content server are on different systems.</li> <li>EJB-enhanced operations.</li> <li>Using the IdcCommand or IdcCommandX utilities on a system separate from the content server. (You will need to change the default value and specify the IP address of the web server.)</li> </ul>	
Hostname Filter field (SocketHostNameSecurity Filter)	Restricts access to the content server to computers with a specified host name. You can specify multiple host names, separated by pipes (   ). Make sure that there are no spaces on either side of the pipe character (for example, serverA serverB). Generally, use only the Hostname Filter field or IP Address Filter field, not both. (IP Address Filter is more commonly used.)
IP Address Filter field (SocketHostAddressSecurity Filter)	Restricts access to the content server to computers with a specified IP address. <ul style="list-style-type: none"> <li>By default, this field is pre-filled with the IP address of the local host (127.0.0.1).</li> <li>You can specify multiple IP addresses, separated by pipes (   ). Make sure that there are no spaces on either side of the pipe character. (For example, 127.0.0.1 10.10.50.143)</li> <li>You can use wildcards in this field, * for zero or many characters, and ? for any one character. (For example, 10.10.3.*)</li> <li>Generally, use only the IP Address Filter field or Hostname Filter field, not both. (IP Address Filter is more commonly used.)</li> </ul>

Feature	Description
Execute Java Server Page (Jsp) check box (IsJspServerEnabled)	<p><b>Selected</b>—Internal JSP support is enabled in the content server.</p> <p><b>Clear</b>—Internal JSP support is disabled.</p> <p>See the <i>Java Server Page and JavaBean Guide</i> for more information.</p> <p> <b>Note:</b> In the Admin Server, this check box is displayed on the <a href="#">Admin Server: General Configuration Page</a> (page 2-6).</p>
Jsp Enabled Groups field (JspEnabledGroups)	<p>Specifies the security groups that are enabled for internal JSP support.</p> <p>See the <i>Java Server Page and JavaBean Guide</i> for more information.</p> <p> <b>Note:</b> In the Admin Server, this field is displayed on the <a href="#">Admin Server: General Configuration Page</a> (page 2-6).</p>

## CONFIGURING LOCALES

You can use the System Properties' Localization tab to change language-specific issues such as date/time format, default time zone, sort order, and default interface language. Although this section provides information about a specific date format issue, the remainder of the Localization tab functionality is provided in the *International Considerations Guide*.

### Date Format

The default English-US locale uses two digits to represent the year ('yy'), where the year is interpreted to be between 1969 and 2068. In other words, 65 is considered to be 2065, not 1965. If you want years prior to 1969 to be interpreted correctly in the English-US locale, you need to change the default date format for that locale to use four digits to represent years ('yyyy').



**Note:** This issue does not apply to the English-UK locale, which already uses four digits for the year.

To modify the default English-US data format:

1. Start the System Properties applet:

**Windows**

Start—All Programs—Content Server—[*Instance Name*—Utilities—System Properties.

**UNIX**

The SystemProperties utility is located in the */bin* subdirectory of the Content Server's installation directory.

2. Open the Localization tab.
3. Select the English-US entry in the list of locales, and click **Edit**.  
The Configure Locale dialog is displayed.
4. Modify the date format to use four digits for the year ('yyyy') rather than two ('yy').
5. After you are done editing, click **OK** to close the Configure Locale dialog.
6. Click **OK** to apply the change and exit System Properties.
7. Stop and restart the Content Server (otherwise the change will not take effect).

## CONFIGURING PATHS

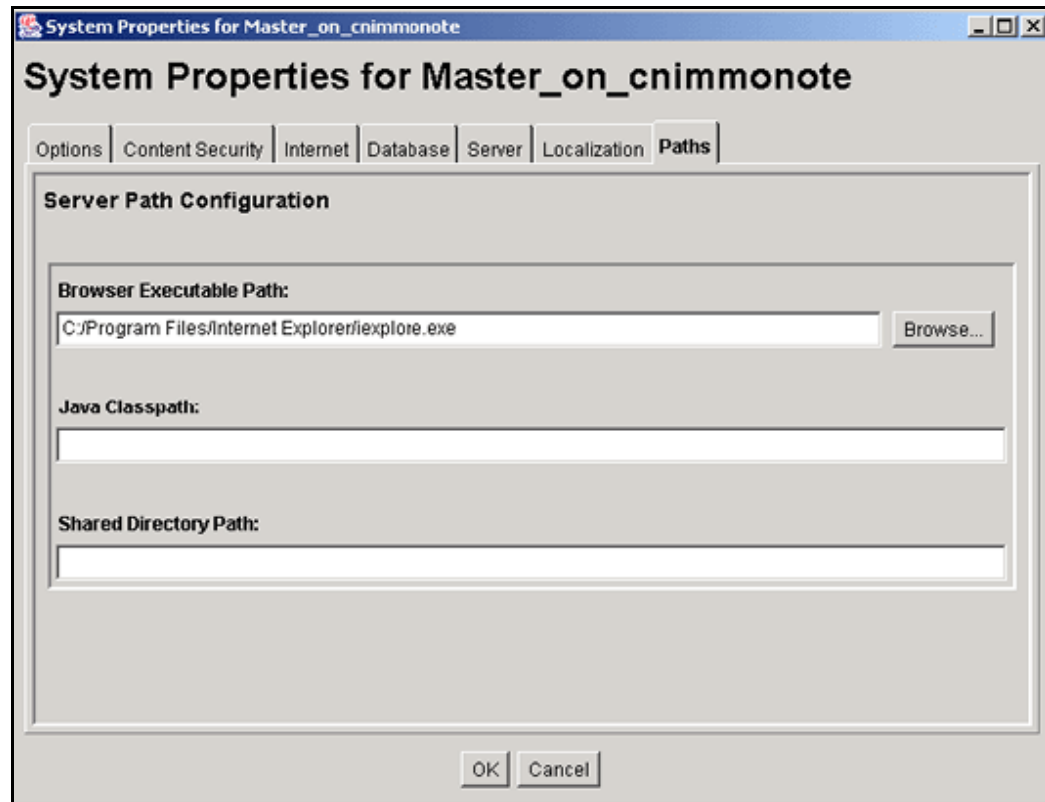
---

You can use the [System Properties: Paths Tab](#) (page 2-26) to change the location of the help browser, Java classpath, and the shared directory path. For security reasons, the Admin Server cannot be used to configure the path options. You must use the standalone application for this configuration.



**Important:** You must restart the content server for any configuration changes to take effect.

## System Properties: Paths Tab



In the following table, the term in parentheses is the corresponding configuration setting defined in the `<Install_Dir>/bin/intradoc.cfg` file.

Feature	Description
Browser Executable Path field (WebBrowserPath)	<p>The location of the browser executable that will be used to display the online help from the stand-alone <a href="#">Administration Utilities and Applets</a> (page 1-5).</p> <ul style="list-style-type: none"> <li>For Windows 2000 systems, the default is <code>c:/Program Files/Internet Explorer/iexplore.exe</code>.</li> <li>For UNIX systems, the path for the web browser is requested during installation.</li> </ul>
Browse button (N/A)	Used to navigate to and select the executable file for the Help browser.

Feature	Description
Java Classpath field (CLASSPATH)	<p>Specifies the path to the Java class files.</p> <ul style="list-style-type: none"> <li>• By default, the CLASSPATH points at classes/, shared/classes/, and shared/classes/server.zip.</li> <li>• If an Oracle or Informix database is used, the CLASSPATH will include a JDBC driver zip file, such as shared/classes/classes111.zip.</li> </ul>
Shared Directory Path field (SharedDir)	<p>Defines the path to the shared directory.</p> <ul style="list-style-type: none"> <li>• This directory contains shared files for the content server, such as resource files, template files, and binaries such as mkvdk.</li> <li>• If the Inbound Refinery is installed, this directory contains the conversion engines, and all Inbound Refinery temp work is done in this directory and its subdirectories.</li> <li>• The default is &lt;Install_Dir&gt;/shared/.</li> </ul>

# MANAGING MULTIPLE CONTENT SERVERS WITH ADMIN SERVER

## OVERVIEW

---

This chapter includes these topics:

### **Concepts**

- ❖ [About the Admin Server](#) (page 3-2)

### **Tasks**

- ❖ [Starting and Stopping the Content Server](#) (page 3-3)
- ❖ [Adding a Content Server](#) (page 3-3)
- ❖ [Editing a Content Server](#) (page 3-4)
- ❖ [Removing a Content Server](#) (page 3-4)
- ❖ [Viewing Server Output](#) (page 3-4)

### **Interface**

- ❖ [Admin Server Output Page](#) (page 3-7)
- ❖ [Add a New Content Server Page](#) (page 3-8)
- ❖ [Add an Existing Local Content Server Page](#) (page 3-8)

- ❖ [Add Remote Content Server](#) (page 3-9)
- ❖ [Edit or Remove Content Server Page](#) (page 3-10)
- ❖ [Add/Edit Content Server Configuration Page](#) (page 3-11)
- ❖ [Specific Instance Page](#) (page 3-13)
- ❖ [Content Server Output Page](#) (page 3-14)

## ABOUT THE ADMIN SERVER

---

The Admin Server is a collection of web pages that enable you to configure system-wide settings for multiple content server instances. If you use the Admin Server, keep the following restrictions in mind:

- ❖ You must be logged in as the system administrator or a user with the *sysmanager* role to access the Admin Server.
- ❖ To administer a content server instance with the Admin Server, the instance must be accessible on the local file system. This means the drive on which any remote instance is installed must be mapped or mounted to the local drive.
- ❖ The Admin Server must run on the same file system as the master content server that it administrates.
- ❖ Due to Win32 security restrictions, the Admin Server can start and stop servers only if they are on the same computer. However, the Admin Server can edit the system properties of servers on different computers.

## MANAGING THE ADMIN SERVER

---

The following tasks are involved in using the Admin Server functionality.




- ❖ [Starting and Stopping the Content Server](#) (page 3-3)
- ❖ [Adding a Content Server](#) (page 3-3)
- ❖ [Editing a Content Server](#) (page 3-4)
- ❖ [Removing a Content Server](#) (page 3-4)
- ❖ [Viewing Server Output](#) (page 3-4)



## Starting and Stopping the Content Server

---

To start, stop, or restart the content server:

1. Display either the [Admin Server Home Page](#) (page 3-6) or the [Specific Instance Page](#) (page 3-13).
2. Click one of the following icons:
  - To stop and restart a running content server, click .
  - To stop a running content server without restarting it, click .
  - To start a stopped content server, click .



**Note:** Click the icon only once and wait for the screen to refresh. It might take several seconds for the content server to start or stop.

## Adding a Content Server

---

To add a content server to an Admin Server:

1. Make sure that the installation directory for the content server to be added is accessible to the local file system. The drive on which the instance is installed must be mapped/mounted.
2. Display the [Admin Server Home Page](#) (page 3-6) for the Admin Server you want to add the instance to.
3. Click the **Add Existing Server** link.  
The [Add an Existing Local Content Server Page](#) (page 3-8) is displayed.
4. Enter the drive and installation directory for the content server instance you want to add.
5. Make sure that the file encoding is correct.
6. Click **Next**.  
The [Add/Edit Content Server Configuration Page](#) (page 3-11) is displayed.
7. Modify the content server configuration as necessary. Typically, you will not change any settings except for the Description and possibly the Allowed Actions.
8. Click **Finish**.

A button for the content server is displayed on the Admin Server home page.

## Editing a Content Server

---

To edit the configuration of a content server in the Admin Server:

1. Display the [Admin Server Home Page](#) (page 3-6) for the Admin Server you want to edit.
2. Click the **Edit Server** link.  
The [Edit or Remove Content Server Page](#) (page 3-10) is displayed.
3. Select the content server you want to edit from the list.
4. Click **Edit**.  
The [Add/Edit Content Server Configuration Page](#) (page 3-11) is displayed.
5. Modify the content server configuration as necessary. Typically, you will not change any settings except for the Description and possibly the Allowed Actions.
6. Click **Finish**.

## Removing a Content Server

---

To remove a content server from the Admin Server:

1. Display the [Admin Server Home Page](#) (page 3-6) for the Admin Server you want to remove.
2. Click the **Edit Server** link.  
The [Edit or Remove Content Server Page](#) (page 3-10) is displayed.
3. Select the content server you want to remove.
4. Click **Remove**.  
A confirmation screen is displayed.
5. Click **Yes**.  
The button for the content server is removed from the Admin Server home page.

## Viewing Server Output

---

To view the Java output of the Admin Server and content server:

1. Display the [Admin Server Home Page](#) (page 3-6) for the Admin Server you want to view.

2. Click the **View Server Output** link.

The [Admin Server Output Page](#) (page 3-7) is displayed.

3. To refresh the output messages, click **Refresh**. To clear the output messages, click **Clear**.

4. Click the **Server Status** link.

The Admin Server home page is displayed.

5. Click the button for the content server you want view.

The [Specific Instance Page](#) (page 3-13) is displayed.

6. Click the **View Server Output** link.

The [Content Server Output Page](#) (page 3-14) is displayed.

7. To refresh the output messages, click **Refresh**. To clear the output messages, click **Clear**.

## ADMIN SERVER INTERFACE SCREEN

---

The following screens are available when using the Admin Server.




- ❖ [Admin Server Home Page](#) (page 3-6)
- ❖ [Admin Server Output Page](#) (page 3-7)
- ❖ [Add a New Content Server Page](#) (page 3-8)
- ❖ [Add an Existing Local Content Server Page](#) (page 3-8)
- ❖ [Add Remote Content Server](#) (page 3-9)
- ❖ [Edit or Remove Content Server Page](#) (page 3-10)
- ❖ [Add/Edit Content Server Configuration Page](#) (page 3-11)
- ❖ [Specific Instance Page](#) (page 3-13)
- ❖ [Content Server Output Page](#) (page 3-14)





## Admin Server Home Page



The Admin Server home page enables you to start, stop, and restart the server, as well as view and configure information pertaining to the server. To access the Admin Server home page:

1. Log in as the system administrator or a user with the sysmanager role.
2. Click the **Administration** link in the portal navigation bar.
3. Click the **Admin Server** link on the [Administration Page](#) (page 1-7).

Feature	Description
	Displays the previous page.
	Displays the Admin Server home page.
	Displays the Content Server online help.
Server Status link	Displays the available content servers and the available actions for each instance. Clicking this link refreshes the server status display.
View Admin Output link	Displays the <a href="#">Admin Server Output Page</a> (page 3-7).
Add Existing Server link	Displays the <a href="#">Add an Existing Local Content Server Page</a> (page 3-8).

Feature	Description
Edit Server link	Displays the <a href="#">Edit or Remove Content Server Page</a> (page 3-10), which is used to edit or remove a content server from this Admin Server.
	Starts the server.
	Stops the server.
	Restarts the server.
	Displays the <a href="#">Specific Instance Page</a> (page 3-13) for the server.

## Admin Server Output Page

**Console output from the Admin Server:**

```

+++++
Admin Server Version 7.5.1 (050330)
+++++

Copyright (C) 1996-2005 Stellent, Inc. All rights reserved.
Ready and waiting for connection on port 4440, PID 1708 (idc42)

```

The Admin Server Output page displays the Java output of the Admin Server, which includes status and error messages for troubleshooting. To access this page, click the **View Admin Output** link on the [Admin Server Home Page](#) (page 3-6).

Feature	Description
Refresh button	Refreshes the output messages.
Clear button	Clears the output messages. The output will not be displayed until the Content Admin service is restarted.
Output messages	Shows status and error messages for the Admin Server.

## Add a New Content Server Page

### Add a New Server

Add an existing content server to this Admin Server. The new server can be a proxy server, a remote master server, or a node in a cluster.

Content Server Type

The Add a New Content Server page is used to specify a type of content server to connect to the current Admin Server. To access this page, click the **Add Existing Server** link on the [Admin Server Home Page](#) (page 3-6).

Feature	Description
Content Server Type	<ul style="list-style-type: none"> <li>❖ Local Server (Master or Proxy)</li> <li>❖ Local Cluster Node (Master or Proxy)</li> <li>❖ Shared Cluster Node (Master or Proxy)</li> <li>❖ Remote Server (Multiple Masters or Remote Clusters)</li> </ul> <p>For more information about clusters, see the Clustering Concepts Guide.</p>

## Add an Existing Local Content Server Page

### Add an Existing Local Content Server

Instance Directory:

File Encoding:

The Add an Existing Local Content Server page is used to connect a local, installed content server to the current Admin Server. To access this page, click **Submit** on the [Add](#)

a [New Content Server Page](#) (page 3-8). Similar pages exist for connecting to local or shared content server cluster nodes.

Feature	Description
Instance Directory field	Enter the drive and installation directory for the content server instance you want to add. (The drive must be mapped/mounted.) Depending on the type of server you're adding, this may also be the: ❖ Instance's Shared Cluster Node Bin Directory ❖ Instance's Local Cluster Node Directory
File Encoding field	Enter the file encoding used by the content server instance you want to add.
Next button	Displays the <a href="#">Add/Edit Content Server Configuration Page</a> (page 3-11).
Reset button	Resets the fields to their default values.
Cancel button	Returns to the Admin Server home page without adding an existing content server.

## Add Remote Content Server

### Add Remote Content Server

Enter the hostname and port of an external running admin server. This can be a remote master instance or a node in a cluster.

Server socket address

Port number

The Add a Remote Content Server page is used to connect a remote, installed content server to the current Admin Server. To access this page, click **Submit** on the [Add a New Content Server Page](#) (page 3-8).

Feature	Description
Server socket address	Enter the server socket address for the content server instance you want to add.
Port number	Enter the port number used by the content server instance you want to add.
Next button	Displays the <a href="#">Add/Edit Content Server Configuration Page</a> (page 3-11).
Reset button	Resets the fields to their default values.
Cancel button	Returns to the Admin Server home page without adding an existing content server.

## Edit or Remove Content Server Page

**Edit or Remove Content Server**  
 This will alter the Admin Server's data, but it will not alter the configuration values for the Content Server itself.

Select the Content Server:

The Edit or Remove Content Server page is used to select a content server to configure or remove from the current Admin Server. To access this page, click the **Edit Server** link on the [Managing the Admin Server](#) (page 3-2).

Feature	Description
Select the Content Server list	Select the content server you want to configure or remove.
Edit button	Displays the <a href="#">Add/Edit Content Server Configuration Page</a> (page 3-11).



Feature	Description
Remove button	Removes the content server instance from the current Admin Server.
Cancel button	Returns to the Admin Server home page without configuring or removing a content server.

## Add/Edit Content Server Configuration Page

**Edit Server**

Instance Directory: C:/stellent/idcm1/

---

**Configuration Values**

Instance Id: **idc**

Instance Name: **idc**

Http Address: JWILSONNOTE

Server Port: 4444

Http Relative Web Root: /idc/

Http Relative Cgi Root: /idc/

Cgi File Name: idcplg

File Encoding: Cp1252

Description: New Content Server

Allowed Actions: stop,start,restart,query

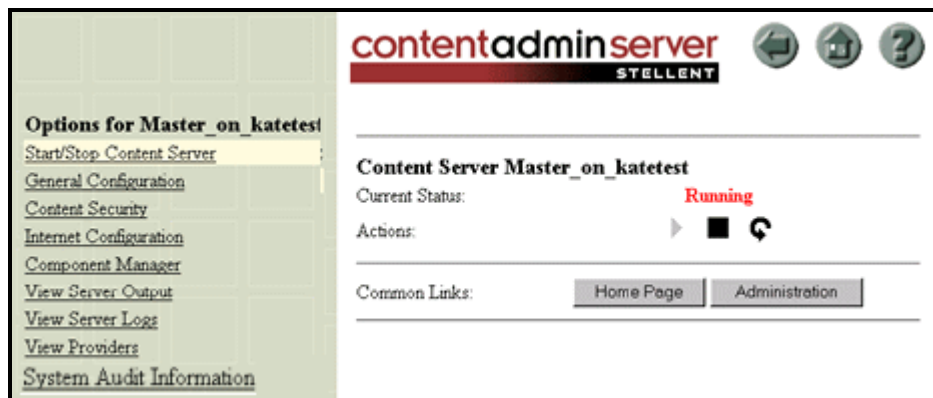
Finish Reset Cancel

The Add/Edit Content Server page is used to configure a content server in the current Admin Server.

- ❖ To access the Add Content Server page, enter a directory and click **Next** on the [Add an Existing Local Content Server Page](#) (page 3-8).
- ❖ To access the Edit Content Server page, select a content server and click **Edit** on the [Edit or Remove Content Server Page](#) (page 3-10).




Feature	Description
Instance Name field	The name of the content server instance.
HTTP Address field	The name of your web server.
Server Port field	The port number that the content server uses to communicate.
Http Relative Web Root field	The relative web root used by the web server to resolve URLs.
Http Relative Cgi Root field	The location of the content server's web filter.
Cgi File Name field	The file name of the content server's web filter.
File Encoding field	The character encoding used by the content server instance.
Description field	The description that is displayed below the instance button on the Admin Server home page.
Allowed Actions field	Actions that can be performed in the Admin Server. The standard actions are Stop, Start, Restart, and Query. Custom actions can be implemented by Consulting Services.
Finish button	Saves any changes and displays the Admin Server home page.
Reset button	Resets the fields to their default values.
Cancel button	Returns to the Admin Server home page without changing the content server configuration.

## Specific Instance Page



The Specific Instance Page is used to view server status; start, stop, or restart a server; and access the system properties. To access this page, click the button that corresponds to that server on the [Managing the Admin Server](#) (page 3-2).

Feature	Description
Start/Stop Content Server link	Displays or refreshes the specific instance page.
General Configuration link	Displays the <a href="#">Admin Server: General Configuration Page</a> (page 2-6).
Content Security link	Displays the <a href="#">System Properties: Content Security Tab</a> (page 2-13).
Internet Configuration link	Displays the <a href="#">System Properties: Internet Tab</a> (page 2-15).
Component Manager link	Displays the Component Manager Page.
View Server Output link	Displays the <a href="#">Content Server Output Page</a> (page 3-14).
View Server Logs link	Displays the list of content server log files. See the <i>Troubleshooting Guide</i> for more information.

Feature	Description
View Providers link	Displays the <a href="#">Providers Page</a> (page 6-13).
System Audit Information	Displays the System Audit Information Page. See the <i>Troubleshooting Guide</i> for more information.
Current Status	Displays the current status of the content server.
Actions	 Starts the content server.  Stops the content server.  Restarts the content server.
Additional Actions	If any custom actions are defined, they are displayed here.
Home Page button	Displays the content server Home page.
Administration button	Displays the content server Administration page.

## Content Server Output Page



The Content Server Output page displays the Java output of the content server, which includes status and error messages for troubleshooting. To access this page, click the **View Server Output** link on the [Specific Instance Page](#) (page 3-13).

Feature	Description
Refresh button	Displays the most current output messages, including the content server version number, status, and license expiration date.
Clear button	Clears the output messages. The output is not displayed until the content server is restarted.
Output messages	Shows status and error messages for the content server.



# CONFIGURING THE SEARCH INDEX

## OVERVIEW

---

This chapter explains the following topics related to indexing:

- ❖ [Variances in Indexing Tools and Methods](#) (page 4-1)
- ❖ [Working with the Search Index](#) (page 4-2)
- ❖ [Using the Search Index](#) (page 4-3)
- ❖ [Indexing Interface Screens](#) (page 4-5)
- ❖ [Text File Full-Text Indexing](#) (page 4-12)
- ❖ [Managing Zone Text Fields](#) (page 4-12)
- ❖ [Indexing with Databases](#) (page 4-18)
- ❖ [Searching Content Using the Oracle Query Optimizer Feature](#) (page 4-21)

## VARIANCES IN INDEXING TOOLS AND METHODS

---

Content Server interfaces with a variety of indexing tools such as commercial search engines and databases. The indexing tool to use is chosen prior to installation based on the purpose and environment in which the content server performs.

Each indexing tool provides full-text indexing and metadata-only indexing. Full-text indexing means that every word in a file is indexed, not only its metadata. Full-text indexing takes longer than metadata indexing; however, it can return a more

comprehensive result set. Metadata-only indexing means that every word in the stored content information is indexed. Metadata-only indexing is faster than full-text indexing.

## WORKING WITH THE SEARCH INDEX

---

This section covers these topics:

### **Concepts**

- ❖ [About the Search Index](#) (page 4-2)

### **Tasks**

- ❖ [Updating the Search Index](#) (page 4-3)
- ❖ [Rebuilding the Collection](#) (page 4-3)
- ❖ [Configuring the Update or Rebuild](#) (page 4-4)
- ❖ [Disabling Full-Text Indexing](#) (page 4-4)

### **Interface**

- ❖ [Repository Manager: Indexer Tab](#) (page 4-5)
- ❖ [Automatic Update Cycle Screen](#) (page 4-7)
- ❖ [Collection Rebuild Cycle Screen](#) (page 4-10)

## About the Search Index

---

The Indexer tab on the Repository Manager screen enables administrators (not subadministrators) to perform these actions:

- ❖ **Update the Search Index:** Incrementally updates the index database. This is usually not necessary because the index is automatically updated approximately every five minutes by the server.
- ❖ **Rebuild the Collection:** The search index is entirely rebuilt, and the old index collection is replaced with a new index collection.
- ❖ **Suspend an Update or a Rebuild:** Stops the update or rebuild temporarily. You can restart the process by clicking the appropriate Start button.



- ❖ **Cancel Update Search:** Index update process terminates, and only files processed to that point are accessible to the search engine.
- ❖ **Cancel Rebuild Collection:** Index rebuild process terminates, and the previous index database continues to be used by the search engine.



**Caution:** For Verity and FAST users: Rebuilding the search index is necessary only when you change or add metadata fields. Depending on the quantity and size of your files, this process can take up to a couple of days. If rebuilding is necessary, rebuild at times of non-peak system usage. A rebuild is not required for adding or changing metadata fields if you use database search and index.

To access the Repository Manager, click on **Admin Applets** in the Administration tray then click on **Repository Manager**. You can also access the Repository Manager as a standalone application. See [Running Administration Applications in Stand-alone Mode](#) (page 1-8) for details.

## USING THE SEARCH INDEX

---

The following are common tasks performed with the search index:

- ❖ [Updating the Search Index](#) (page 4-3)
- ❖ [Rebuilding the Collection](#) (page 4-3)
- ❖ [Configuring the Update or Rebuild](#) (page 4-4)
- ❖ [Disabling Full-Text Indexing](#) (page 4-4)

### Updating the Search Index

---

1. On the Repository Manager page, click the Indexer tab.
2. Click **Start** in the Automatic Update Cycle area.

### Rebuilding the Collection

---

1. Select the Indexer tab.
2. Click **Start** in the Collection Rebuild Cycle area.

## Configuring the Update or Rebuild

---

To set the parameters for a search index update or collection rebuild:

1. From the Repository Manager, select the Indexer tab.
2. Click **Configure** in either the Automatic Update Cycle portion of the screen or the Collection Rebuild Cycle portion.

Either the [Automatic Update Cycle Screen](#) (page 4-7) or the [Collection Rebuild Cycle Screen](#) (page 4-10) is displayed.

3. Specify the number of content items (files) per indexer batch. This is the maximum number of files that the search index will process at one time.
4. Specify the content items (files) per checkpoint. This is the number of files that will go through all relevant indexing states at a time. You can have multiple batches of files indexed per checkpoint.
5. Specify the indexer debug level. This is the amount of information pertaining to each file to display in the server window.
6. Click **OK**.

## Disabling Full-Text Indexing

---

You might want to disable full-text indexing if, for example, you want to conserve file space or if you do not require full-text searching for specific content types. Even if you disable full-text indexing, metadata is still indexed.

To disable full-text indexing on specific files:

1. Define a format in the Configuration Manager screen named **application/noindex**.
2. Enable the **Allow Override Format on Check In** setting. See [Configuring General Options](#) (page 2-4).
3. When a user checks in a file that they do not want to be indexed, they should select the **application/noindex** format. This applies to standard files, batch loads, and archived revisions.

# INDEXING INTERFACE SCREENS

The following screens are used when using indexing:

- ❖ [Repository Manager: Indexer Tab](#) (page 4-5)
- ❖ [Automatic Update Cycle Screen](#) (page 4-7)
- ❖ [Collection Rebuild Cycle Screen](#) (page 4-10)

## Repository Manager: Indexer Tab

The screenshot shows the 'Indexer' tab in the Repository Manager. It features two primary sections: 'Automatic Update Cycle' and 'Collection Rebuild Cycle'. The 'Automatic Update Cycle' section indicates a completed indexing process on 8/30/2000 at 11:51 AM, with a status of 'idle' and various counters at zero. The 'Collection Rebuild Cycle' section shows an 'unknown' status with corresponding 'unknown' values for dates and counters. Both sections include control buttons for 'Start', 'Suspend', 'Cancel', and 'Configure...'.

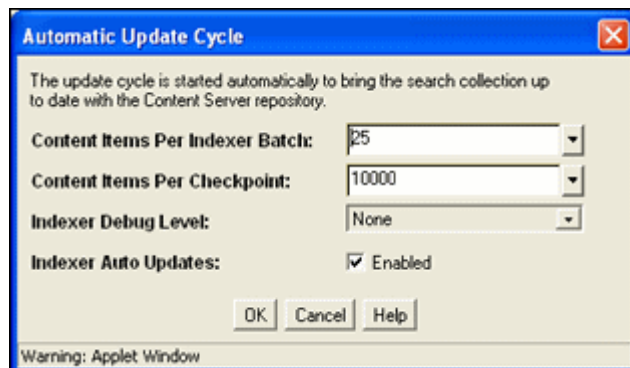
The Indexer tab of the Repository Manager is used to monitor, run, and configure Indexer update cycles and collection rebuild cycles. To access this tab, click the tab on the Repository Manager Application.

Feature	Description
Automatic Update Cycle pane	Incrementally updates the index database automatically approximately every five minutes, regardless of whether an event (such as file checkin) has triggered the Indexer.

Feature	Description
Collection Rebuild Cycle pane	The search index is entirely rebuilt, and the old index collection is replaced with a new index collection when the rebuild is successfully completed.
State field	The current place in the indexing cycle: <b>Initialization:</b> The indexing cycle is being initialized. <b>Adding to collection...:</b> Revisions are being indexed. <b>Finished:</b> The indexing cycle is completed or has been cancelled.
Status field	The status of the indexing cycle: <b>Idle:</b> No indexing cycles are in process. <b>Active:</b> An indexing cycle is currently running. <b>Interrupted:</b> The indexing cycle was interrupted, either by a suspension or an unexpected event (such as a power, database, or file system failure). <b>Suspending:</b> The indexing cycle is being suspended. <b>Cancelling:</b> The indexing cycle is being cancelled.
Start Date field	The date and time the last indexing cycle started.
Finish Date field	The date and time the last indexing cycle finished.
Active Date field	If the indexing cycle is currently active, the date and time the cycle became active.
Indexer Counters field	Counter values for the current indexing cycle. <b>Total</b> —The total number of documents indexed. <b>Full Text</b> —The number of full-text indexed documents. <b>Meta Only</b> —The number of documents for which only metadata has been indexed. <b>Delete</b> —The number of documents deleted from the search index.


Feature	Description
Start/Restart button	Begins the indexing cycle, or restarts a cycle that was suspended or interrupted. Corresponds to the Start index update and Start index rebuild links in the Actions section of the Administration tray. These links enable you to remotely manage indexing functions.
Suspend button	Stops the indexing cycle and permits a restart. Corresponds to the Suspend index update and Suspend index rebuild links in the Actions section of the Administration tray. These links enable you to remotely manage indexing functions.
Cancel button	Stops the indexing cycle but does not permit a restart. Corresponds to the Cancel index update and Cancel index rebuild links in the Actions section of the Administration tray. These links enable you to remotely manage indexing functions.
Configure button	Displays either the <a href="#">Automatic Update Cycle Screen</a> (page 4-7) or the <a href="#">Collection Rebuild Cycle Screen</a> (page 4-10), which enable you to adjust the files per batch, checkpoint, and debug level.

## Automatic Update Cycle Screen

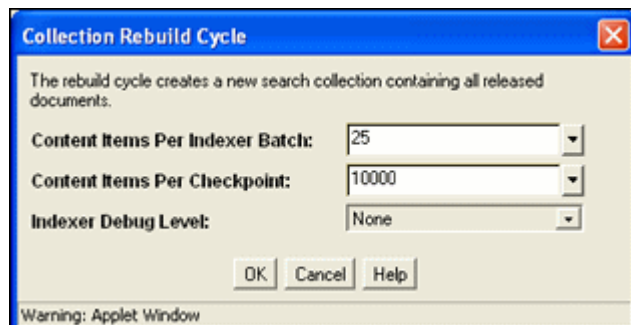


The Automatic Update Cycle screen is used to configure how the Indexer automatically indexes new files and revisions. To access this screen, click **Configure** in the Automatic Update Cycle pane of the [Repository Manager: Indexer Tab](#) (page 4-5).

Feature	Description
Content Items Per Indexer Batch field	<p>The maximum number of files that the search index will process at one time. The default is 25. This means 25 files are indexed together, then the next 25 files are indexed. However, if one item fails, then the batch is processed again.</p> <p>Thus, if you set this value to 2000 and a document fails, the entire batch would be reprocessed. This would take longer than if you use the default setting and an item fails. But, if there are no failures in the batch, then setting this value higher accelerates the process.</p> <p>The only time you would change this setting to one (1) is if you are experiencing problems with the search engine indexing large and complicated files.</p>
Content Items Per Checkpoint field	<p>The number of files that will go through all relevant indexing states at a time. You can have multiple batches of files indexed per checkpoint. After the checkpoint is reached, some merging of the collection is done before the next batch is processed.</p> <p>If this is set to a high value and you try to cancel a rebuild or an update cycle, the Repository Manager does not stop processing until the checkpoint is reached. However, setting the value too low slows down the indexing process.</p>

Feature	Description
Indexer Debug Level list	<p>The Indexer debug level. The more debug information listed in the server window, the slower the indexing progresses. The following list shows the debug levels from the least to the most debug information:</p> <p><b>none:</b> No information for each file access is displayed, and no log will be generated.</p> <p><b>verbose:</b> Displays information for each file accessed. Indicates indexed, ignored, or failed, and generates a full report.</p> <p><b>debug:</b> Displays the medium level of information, which is specifically functional.</p> <p><b>trace:</b> Displays the lowest level of information for each activity performed.</p> <p><b>all:</b> Displays the highest level of debug information.</p> <p> <b>Note:</b> Database and Database Full-Text Search do not support indexer debug levels, so only the <b>none</b> option is displayed if you use a database for search and index.</p>
Indexer Auto Updates check box	<p><b>Selected</b>—The index database is updated automatically.</p> <p><b>Clear</b>—The index database is not updated automatically.</p>


## Collection Rebuild Cycle Screen



The Configure Collection Rebuild Cycle screen is used to configure how the Indexer rebuilds the search collection. To access this screen, click **Configure** in the Collection Rebuild Cycle pane of the [Repository Manager: Indexer Tab](#) (page 4-5).

Feature	Description
Content Items Per Indexer Batch field	<p>The maximum number of files that the search index will process at one time. The default is 25. This means 25 files are indexed together, then the next 25 files are indexed. However, if one item fails, then the batch is processed again.</p> <p>Thus, if you set this value to 2000 and a document fails, the entire batch would be reprocessed. This would take longer than if you use the default setting and an item fails. But, if there are no failures in the batch, then setting this value higher accelerates the process.</p> <p>The only time you would change this setting to one (1) is if you are experiencing problems with the search engine indexing large and complicated files.</p>



Feature	Description
Content Items Per Checkpoint field	<p>The number of files that will go through all relevant indexing states at a time. You can have multiple batches of files indexed per checkpoint. After the checkpoint is reached, some merging of the collection is done before the next batch is processed.</p> <p>If this is set to a high value and you try to cancel a rebuild or an update cycle, the Repository Manager will not stop processing until the checkpoint is reached. However, setting the value too low will slow down the indexing process.</p>
Indexer Debug Level list	<p>The Indexer debug level. The more debug information listed in the server window, the slower the indexing progresses. The following list shows the debug levels from the least to the most debug information:</p> <p><b>none:</b> No information for each file accessed is displayed.</p> <p><b>verbose:</b> Displays information for each file accessed. Indicates indexed, ignored, or failed.</p> <p><b>debug:</b> Displays the medium level of information.</p> <p><b>trace:</b> Displays the lowest level of information.</p> <p><b>all:</b> Displays the highest level of information.</p> <p> <b>Note:</b> Database and Database Full-Text Search do not support indexer debug levels, so only the <b>none</b> option is displayed if you use a database for search and index.</p>

## TEXT FILE FULL-TEXT INDEXING

If you have configured the Content Server to use DatabaseFullText as your indexing engine, text is automatically extracted from checked in documents prior to being indexed. Using the Outside In Content Access module, Content Server exports content to a text file upon check-in. The text file is then passed to the full-text indexer for full-text indexing.



**Note:** If you check in a PostScript file, it will be full-text indexed. However, when the Outside In Content Access module converts a PostScript file, the conversion process produces text that contains extra characters. Unfortunately, this creates a file that is full-text indexed but cannot be full-text searched.

## MANAGING ZONE TEXT FIELDS

---



**Note:** If you chose to install and enable the Database Search Contains Operator feature during the Content Server installation process, then the functionality described in this section is available to you.

This section covers these topics:

### **Concepts**

- ❖ [About Zone Text Fields](#) (page 4-13)

### **Tasks**

- ❖ [Enabling and Disabling Zone Text Fields](#) (page 4-14)
- ❖ [Changing the MinFullTextFieldLength Variable](#) (page 4-15)
- ❖ [Disabling Database Search Contains Operator](#) (page 4-16)

### **Interface**

- ❖ [Zone Fields Configuration Page](#) (page 4-17)

## About Zone Text Fields

---

The Database Search Contains Operator feature enables you to use the Contains search operator to search text fields when performing Database and Database Full Text searches on SQL Server and Oracle. You must first enable the text fields that can be queried using the Contains search operator. These text fields are called *zone text fields*.

When a text field is added as a zone text field, the text within the field is parsed and a full-text index for the field is created in the database. The database performs all the work of creating the index, and the index is dropped from the database if the text field is

disabled as a zone text field. Therefore, there is no need to rebuild the collection after enabling or disabling text fields as a zone text fields.



**Important:** Changing a text field to a zone text field can be a very time-consuming operation. The amount of time it takes to parse the text and create the full-text index depends on the number of content items in the content server and the amount of text stored in the text field. However, once the text field has been indexed, you should not experience significant performance issues when updating and adding content items.

When a text field has been enabled as a zone text field, the Contains search operator is available for the text field on the Advanced Search page. It is represented as the *Has Word* option in the drop-down list next to the text field.

**Figure 4-1** *Has Word* option

The screenshot shows a search configuration interface with the following fields and options:

<b>Title</b>	Has Word	
<b>Type</b>	Substring	
<b>Security Group</b>	Substring	
<b>Author</b>	Substring	
<b>Release Date</b>	From	To
<b>Expiration Date</b>	From	To
<b>Comments</b>	Has Word	

## Enabling and Disabling Zone Text Fields

To enable or disable zone text fields, complete the following steps:

1. Log in to content server as an administrator.
2. Select **Zone Fields Configuration** from the Administration menu or the Admin Applets page. The [Zone Fields Configuration Page](#) is displayed.
3. Select the search engine from the drop-down list.
4. To enable text fields as zone text fields, complete the following steps:
  - a. Select the text fields in the Text Fields list. You can use the [Ctrl] and [Shift] keys on your keyboard to select multiple fields.



**Note:** By default, text fields with a field length of 20 characters or less are not included in the Text Fields list. You can change this setting by modifying the `MinFullTextFieldLength` configuration variable. For details, see [Changing the MinFullTextFieldLength Variable](#) (page 4-15).

- b. Click the left arrow button to move the text fields to the Zone Text Fields list.
- c. Click **Update**.



**Important:** Changing a text field to a zone text field can be a very time-consuming operation. The amount of time it takes to parse the text and create the full-text index depends on the number of content items in the content server and the amount of text stored in the text field. However, once the text field has been indexed, you should not experience significant performance issues when updating and adding content items.

5. To disable zone text fields, complete the following steps:
  - a. Select the zone text fields in the Zone Text Fields list. You can use the [Ctrl] and [Shift] keys on your keyboard to select multiple fields.
  - b. Click the right arrow button to move the text fields to the Text Fields list.
  - c. Click **Update**.
6. When enabling and disabling zone text fields, consider the following:
  - ❖ If you start making changes to the lists and you then want to revert to the last saved lists, click **Reset**.
  - ❖ Custom text fields (the Comments field and any customer-created text fields) are shared between the Database and Database search engines, and therefore changing the status of these text fields for one search engine also applies the changes to the other search engine.
  - ❖ Standard text fields (Author, Content ID, Content Type, Title, etc.) can be enabled or disabled independently for each search engine.
  - ❖ The database performs all the work of creating the indexes, and the index are dropped from the database if the text fields are disabled as zone text fields. Therefore, there is no need to rebuild the collection after enabling or disabling text fields as a zone text fields.
  - ❖ You must disable a zone text field before the field can be deleted from the content server using Configuration Manager. If you delete an enabled zone text field using Configuration Manager and then click **Update Database Design**, you will receive an error.

Disabling the zone text field drops the index for the field from the database, allowing the field to be deleted from the database. As an alternative to disabling the zone text field, you could log into the database and issue a command to drop the index for the field, and then delete the field.

- ❖ You might want to disable all zone text fields before uninstalling the feature. Otherwise, you will not be able to delete the zone text fields from the content server unless you reinstall the feature to disable the zone text fields or drop the indexes for the zone text fields from the database manually.

## Changing the MinFullTextFieldLength Variable

---

By default, text fields with a field length of 20 characters or less are not included in the Text Fields list. You can change this setting by modifying the `MinFullTextFieldLength` configuration variable. To change this variable, complete the following steps:

1. Using a text editor, open the `config.cfg` file located in the `<install_dir>/<instance_name>/config/` directory.
2. Add the `MinFullTextFieldLength` configuration variable, and set its value (the default value is 21). For example:  
`MinFullTextFieldLength=16`
3. Save your changes to the `config.cfg` file.
4. Restart the content server.

## Disabling Database Search Contains Operator

---

Before disabling the feature, you might want to disable all zone text fields. The database contains an index for each enabled zone text field (the indexes are dropped when the zone text fields are disabled). If the database contains an index for a field, it will not let you delete the field from your content server using Configuration Manager. For more information, see [Enabling and Disabling Zone Text Fields](#) (page 4-14).

If you disable the feature and later want to delete a field that is enabled as a zone text field, you can use one of the following options:

- ❖ Reinstall the feature, disable the zone text field, use Configuration Manager to delete the field, and uninstall the feature.
- ❖ Log into the database and issue a command to drop the index for the field, and then use Configuration Manager to delete the field.

## Zone Fields Configuration Page

Search Engine: Database

Zone Text Fields	Text Fields
Comments	Account
Title	Author
	Content ID
	Content Type
	Format
	Original Name
	Security Group

Update Reset

Access this page by selecting **Zone Fields Configuration** from the Administration menu or the Admin Applets page.

Feature	Description
Search Engine drop-down list	Select the search engine to be used to search the zone text fields (either Database or DatabaseFullText).
Zone Text Fields list	Lists the zone text fields for the selected search engine. You can use the [Ctrl] and [Shift] keys on your keyboard to select multiple fields.
Text Fields list	Lists the available text fields for selected search engine. <b>Note:</b> By default, text fields with a field length of 20 or less characters are not included in the Text Fields list. You can change this setting by modifying the <code>MinFullTextFieldLength</code> configuration variable. For details, see <a href="#">Changing the MinFullTextFieldLength Variable</a> (page 4-15).
Right and left arrow buttons	Move selected fields between the Zone Text Fields and Text Fields lists.

Feature	Description
Update button	<p>Enables text fields in the Zone Text Fields list as zone text fields, and disables text fields in the Text Field list. Parses the text within all zone text fields and creates a full-text index that can be queried using the Contains search operator.</p> <p><b>Important:</b> Changing a text field to a zone text field can be a very time-consuming operation. The amount of time it takes to parse the text and create the full-text index depends on the number of content items in the content server and the amount of text stored in the text field. However, once the text field has been indexed, you should not experience significant performance issues when updating and adding content items.</p>
Reset button	Reverts the Zone Text Fields and Text Fields lists to the last saved lists.



**Note:** Custom text fields (the Comments text field and any customer-created text fields) are shared between the Database and Database search engines, and therefore changing the status of these text fields for one search engine also applies the changes to the other search engine. Standard text fields (Author, Content ID, Content Type, Title, etc.) can be enabled or disabled independently for each search engine.

## INDEXING WITH DATABASES

If your system was set up to provide indexing and searching capabilities with databases, your system integrator would have added one of the following lines in

`<Install_Dir>/config/config.cfg:`

- ❖ Metadata Searching Only: `SearchIndexerEngineName=DATABASE`
- ❖ Full-text Searching: `SearchIndexerEngineName=DATABASEFULLTEXT`

The `dbfulltextsearch` script appropriate for the supported database would then be run.

- ❖ By default, full-text indexing is applied to all converted files.

- ❖ By default, the content server full-text indexes files that are passed through or converted to any of the following formats:

#### **MS SQL Supported Formats**

- |        |                 |            |
|--------|-----------------|------------|
| • text | • doc           | • ppt      |
| • txt  | • msword        | • ms-excel |
| • htm  | • ms-word       | • xls      |
| • html | • ms-powerpoint |            |

#### **Oracle Supported Formats**

- |        |        |       |
|--------|--------|-------|
| • pdf  | • hcsp | • doc |
| • html | • text | • rtf |
| • htm  | • txt  | • ppt |
| • xls  |        |       |

For example, if you want to convert your Microsoft Word (.doc) files to text files instead of PDF, you can specify this in the Configuration Manager. That is, when you use the File Formats option to map the .doc file extension to a text format, then this defines how the file is converted to a web-viewable format. In this case, the text file is fully indexed before it is passed to the web site.

For more information about the Configuration Manager's File Formats option, see the *Managing Repository Content Guide*.

- ❖ You can enable contributors to specify whether to full-text index a file by enabling the format override feature in System Properties. (See [Configuring General Options](#) (page 2-4).)

For example, if you have used the Configuration Manager's File Formats option to map Corel WordPerfect (.wpd) files to use a text format and a contributor selects the *use default* option in the Format field on the checkin page, the file will be converted to text and full-text indexed. If the contributor selects *Corel WordPerfect Document*, the file will be passed through in its native format and will not be full-text indexed.

For more information about the Configuration Manager's File Formats option, see the *Managing Repository Content Guide*.



## Database-Supported File Formats

---

If you define a file format to PASSTHRU in the native format, and the format name contains one of the types listed above (such as *application/ms-excel.native*), the passed through native file will be full-text indexed by default.

Alternatively, you can use configuration variables to control whether or not a document is full-text indexed. To manage the full-text indexing and search of specific document format types, add applicable entries to *<Install\_Dir>/config/config.cfg*, and save the file. Full-text indexing configuration variables include:

- ❖ [FormatMap](#) (page 4-20)
- ❖ [ExceptionFormatMap](#) (page 4-20)

### FormatMap

The FormatMap configuration variable controls whether files of a specific format should be included in the full-text search index. It is a comma-separated list of all the formats that will be full-text indexed. The decision is made by taking the MIME type assigned to a file, splitting the MIME type apart at any slash (/) or period (.), and then checking if that value is in the FormatMap list.

For example, *application/vnd.msword* will turn into a list of three items:

- *application*
- *vnd*
- *msword*

If FormatMap has “msword” in its list, then the indexer engine will attempt to full-text index the file. the comparison test is not case sensitive.

### ExceptionFormatMap

The ExceptionFormatMap configuration variable is used to exclude document formats from the FormatMap test. Any format that satisfies the ExceptionFormatMap test will *not* be full-text indexed. This test is done after splitting the MIME format at slashes (/), but not periods(.). For example, if “msword” is included in the exceptions list, then the MIME format *application/msword* is excluded but not *application/vnd.mssword*.

# SEARCHING CONTENT USING THE ORACLE QUERY OPTIMIZER FEATURE

---



**Note:** If you chose to enable the Oracle Query Optimizer feature during the Content Server installation process, then the functionality described in this section is available to you.

This section covers these topics:

## **Concepts**

- ❖ [About the Oracle Query Optimizer Feature](#) (page 4-22)
- ❖ [Query Optimization Process](#) (page 4-23)
- ❖ [How Reformatted Queries Optimize Searches](#) (page 4-26)
- ❖ [Types of Recognized Hints](#) (page 4-27)
- ❖ [Query Hints Syntax](#) (page 4-29)
- ❖ [Supported Search Operators and Keywords](#) (page 4-30)
- ❖ [Additional Supported Sort Constructs](#) (page 4-31)
- ❖ [The Hint Rules Table](#) (page 4-31)
- ❖ [The Hint Cache](#) (page 4-37)

## **Tasks**

- ❖ [Using Hint Rules](#) (page 4-40)
- ❖ [Adding and Enabling New Hint Rules](#) (page 4-40)
- ❖ [Editing Existing Hint Rules](#) (page 4-41)
- ❖ [Disabling Hint Rules](#) (page 4-41)
- ❖ [Enabling Hint Rules](#) (page 4-41)
- ❖ [Removing Hint Rules](#) (page 4-42)
- ❖ [Using the Query Converter](#) (page 4-42)
- ❖ [Converting a Data Source or Query](#) (page 4-43)
- ❖ [Editing a Converted Data Source or Query](#) (page 4-44)

- ❖ [Updating the Hint Cache](#) (page 4-44)
- ❖ [Checking the Hint Cache for Existing Hints](#) (page 4-44)
- ❖ [Modifying an Existing Hint Cache Query or Data Source Entry](#) (page 4-45)
- ❖ [Removing a Hint Cache Query or Data Source Entry](#) (page 4-47)

## ***Interface***

- ❖ [Hint Rules Configuration Page](#) (page 4-49)
- ❖ [Hint Rule Editor](#) (page 4-50)
- ❖ [Query Converter Page](#) (page 4-53)
- ❖ [Examples of Converted Data Source and Query](#) (page 4-55)
- ❖ [Hint Cache Updater Page](#) (page 4-56)
- ❖ [Examples of Hint Cache Updating Results](#) (page 4-59)

## **About the Oracle Query Optimizer Feature**

---

The Oracle Query Optimizer feature is designed to improve your Oracle database's performance by removing inefficiencies in user queries. Generally, Oracle does not select the best execution plan for certain types of user queries. To counter this, the Oracle Query Optimizer feature adds hints to queries that force Oracle to perform searches more efficiently.

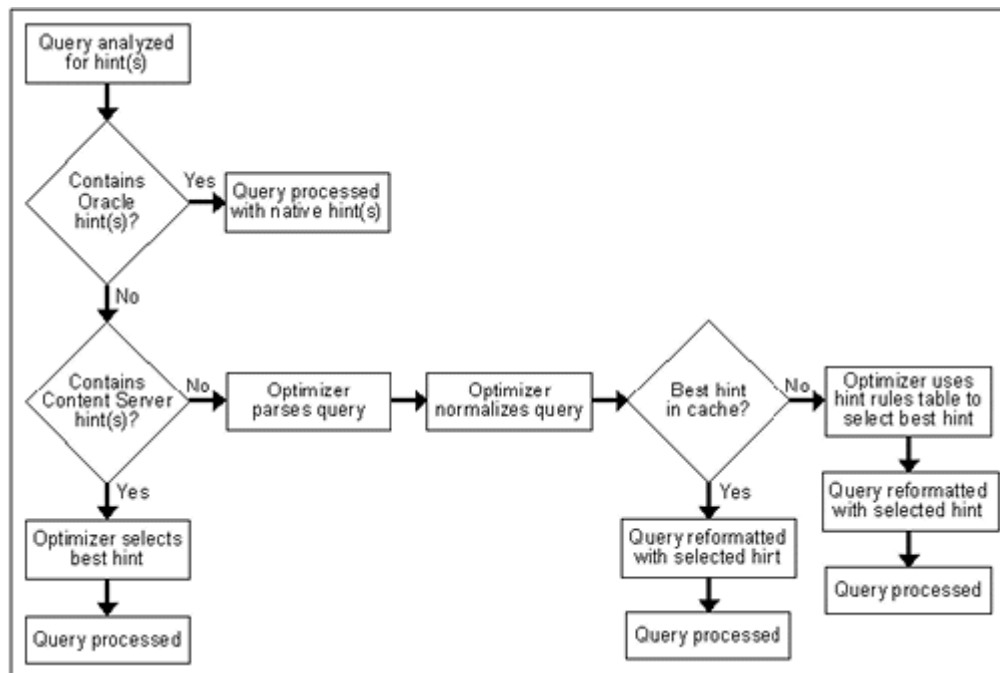
The hints are based on an intrinsic knowledge of Content Server's table data distribution and its index selectivity. To take advantage of this knowledge, the Oracle Query Optimizer feature uses a pre-defined hint rules table to analyze the database query and then add appropriate hints to the query. In turn, the added hints improve Oracle's search performance.

The Oracle Query Optimizer feature takes advantage of Content Server's data distribution in database tables and its index selection preferences. Based on these characteristics, the hint rules table included with the Oracle Query Optimizer feature contains pre-defined rules. The feature uses these rules to analyze a database query and to add one or more appropriate hints to the query to optimize the search performance.

In very large collections containing millions of content items, Oracle generally has a difficult time selecting an appropriate optimization strategy to resolve even simple queries. To counteract this problem, the Oracle Query Optimizer feature examines the submitted query and, based on its analysis, reformats the query by adding appropriate

hints to optimize the search process. To do this, the feature uses [Content Server Hints](#) (page 4-28), [The Hint Rules Table](#) (page 4-31), and [The Hint Cache](#) (page 4-37).

## Query Optimization Process



The stages of the optimization process are completed in the following sequence:

1. The submitted query is analyzed to verify if it contains one or more hints and, if so, determine the type of hint—see [Stage 1: Query Analysis](#) (page 4-24).
2. If the query's WHERE clause does not contain a hint, the optimization feature must parse out the WHERE clause—see [Stage 2: Parsing](#) (page 4-24).
3. After parsing, each condition in the query's WHERE clause is evaluated against the hint rules table in an attempt to qualify the condition and normalize the query—see [Stage 3: Normalization](#) (page 4-24).
4. After the WHERE clause conditions are qualified and the query is normalized, a hint is selected or retrieved from the hint cache—see [Stage 4: Select Hint](#) (page 4-25).
5. The query is reformatted using the selected hint—see [Stage 5: Reformat Query](#) (page 4-26).

## Stage 1: Query Analysis

In this stage, a query is checked for both Oracle (native) and Content Server hints. This is determined based on the hint syntax—[Query Hints Syntax](#) (page 4-29). A query that contains Oracle hints is passed through. A query that contains Content Server hints bypasses [Stage 2: Parsing](#) (page 4-24) and [Stage 3: Normalization](#) (page 4-24). If a query contains multiple Content Server hints, the best hint is chosen. Queries that do not contain any hints must be parsed and normalized.

## Stage 2: Parsing

In this stage, a query that does not contain any hints is sent through the query parser and the WHERE clause is parsed out. A WHERE clause consists of one or more conditions joined with either AND or OR conjunctions—see [Supported Search Operators and Keywords](#) (page 4-30). For each condition, the field name, operator, and field value are extracted. The AND/OR conjunctions of the clause are preserved; the parentheses are dropped. Conditions must use the following format:

`<fieldname> <operator> <value>`

For example, a properly formatted condition would be `dID = 3`. An incorrect condition would be `3 = dID`.

For additional information about search operators, keywords, and additional WHERE clause operators that the parser recognizes, see [Supported Search Operators and Keywords](#) (page 4-30) and [Additional Supported Sort Constructs](#) (page 4-31).

## Stage 3: Normalization

In this stage, normalization simplifies conditions, finalizes query operators, and provides a stable view of the WHERE clause for additional steps. The end result of the normalization process produces a base for generating the cache key and the list of fields to use to search for hints.



**Note:** To establish which database tables and columns have indexes, the hint rules table is defined on Content Server resources as well as on the running system.

### ❖ *Qualifying WHERE Clause Conditions:*

Each condition in the WHERE clause is checked against [The Hint Rules Table](#) (page 4-31). If a condition's field name is included in the hint rules table, then it is qualified and the condition is considered to be normalized. This means that the condition contains its table name and alias. Then the normalized conditions are sorted to ensure that the same set of conditions is always listed consistently.

❖ ***Discarding WHERE Clause Conditions During Normalization:***

During normalization, the following conditions are not considered relevant and are eliminated from further processing:

- Join conditions.
- Conditions that contain subqueries.
- Conditions whose field names do not have entries in the hint rules table and cannot be qualified.
- OR conditions that contain more than one field. For example:  
`(dSecurityGroup = 'Secure' or dDocAccount LIKE 'prj%')`
- Conditions that contain the LIKE operator whose value begins with a wildcard.

❖ ***Reformatting WHERE Clause Conditions:***

In the normalization step, the query conditions are rewritten to consolidate complex query conditions. OR conditions are re-evaluated as follows:

- If all the fields are the same and all the operators are equal, the conditions are combined and changed to an IN query.
- If the fields are the same but have different operators, the conditions are combined and the 'generic' operator is assigned.
- If the fields are different, the conditions are dropped.

For example, during normalization, the following condition:

```
(dReleaseState = 'Y' OR dReleaseState = 'O')
```

Is reformatted as follows:

```
dReleaseState IN ('Y', 'O')
```

❖ ***Finding Potential Range Queries:***

The parsed query is analyzed to find potential range queries that are then consolidated during the normalization process. For example, the conditions `dInDate > date1` and `dInDate < date2` are changed to one condition with the operator 'range'.

## ***Stage 4: Select Hint***

In this stage, the normalized conditions are checked against the hint cache. If one or more conditions have applicable hints in the cache, they are included. If applicable hints are not found in the cache, the conditions are analyzed and the preference orders are compared to determine the best possible hint.

## Stage 5: Reformat Query

In this stage, the query is reformatted by adding in the selected hint. For more information about how reformatting queries with hints helps to optimize searches and some examples of reformatted queries, see [How Reformatted Queries Optimize Searches](#) (page 4-26).

## How Reformatted Queries Optimize Searches

---

The majority of queries in Content Server involve a small, targeted set of content items or return a hundred rows, at most. This means that Content Server can easily scale to millions of content items. However, testing on an Oracle database with a collection containing 10 million content items indicates that the execution plan that Oracle selects is not the most efficient. Oracle generally does not choose the best optimization strategies to resolve many queries, even some that are trivial. The following examples explain this issue:

- ❖ [Example 1: Reformatting a Query by Adding a Single Hint](#) (page 4-26)
- ❖ [Example 2: Reformatting a Query by Adding Multiple Hints](#) (page 4-27)

### Example 1: Reformatting a Query by Adding a Single Hint

In the environment described above, Oracle does not resolve the following query as efficiently as possible:

```
SELECT *
FROM Revisions, Documents, DocMeta
WHERE Revisions.dID = Documents.dID
      AND Revisions.dID = DocMeta.dID
      AND Revisions.dRevClassID = 333
Order By Revisions.dID
```

Because a fairly selective index is available (dRevClassID\_2 for Revisions.dRevClassID), this query should access dRevClassID\_2 and perform a sort on the rows that match the dRevClassID. However, in this query example, Oracle chooses to use the Revisions.dID index.

This choice is actually worse than performing a full table scan on the Revisions table because it does a full index scan and accesses the table to obtain the dRevClassID for each row. Obviously, resolving the query using this execution plan does not work well when the Content Server has over 10 million content items. In this case, it requires approximately 500 seconds to return the results.

However, the performance improves dramatically when the query is modified by adding a hint as follows:

```
SELECT /*+ INDEX(Revisions dRevClassID_2)*/ *
FROM Revisions, Documents, DocMeta
WHERE Revisions.dID = Documents.dID
      AND Revisions.dID = DocMeta.dID
      AND Revisions.dRevClassID = 333
Order By Revisions.dID
```

The query is modified by adding a hint (`/*+ INDEX(Revisions dRevClassID_2)*/`) to the SELECT clause. This forces Oracle to choose the `dRevClassID_2` index instead of the index for `Revisions.dID`. Because no more than a few content items share `dRevClassID` in this example, the modified query returns the results instantly.

## Example 2: Reformatting a Query by Adding Multiple Hints

In a typical Content Server instance, most documents have a 'Y' (released) status for the `dReleaseState` with a `dInDate` earlier than the current date. However, only a few documents have an 'N' (new, not yet indexed) status for the `dReleaseState`. The following query is searching for content items that have not yet been released:

```
SELECT dID
FROM Revisions
WHERE Revisions.dReleaseState = 'N' AND Revisions.dStatus in
      (N'DONE', N'RELEASED', N'DELETED')
      AND Revisions.dInDate<={ts '2005-02-23 17:46:38.321'}
```

The optimized result for the query uses the index for `dReleaseState`:

```
SELECT/*+ LEADING(Revisions) INDEX (Revisions dReleaseState)*/
dID
FROM Revisions
WHERE Revisions.dReleaseState = 'N' AND Revisions.dStatus in
      (N'DONE', N'RELEASED', N'DELETED')
      AND Revisions.dInDate<={ts '2005-02-23 17:46:38.321'}
```

## Types of Recognized Hints

---

Content Server queries can be static queries defined in various resources, data sources with additional dynamic WHERE clauses, and dynamic queries that are ad-hoc or defined in the application such as Archiver. Static queries can be updated with Oracle hints. However, it is nearly impossible to predefine hints for ad-hoc queries and dynamic WHERE clauses.



## Oracle Hints

The Oracle Query Optimizer feature includes a Query Definition Table. This table contains pre-defined Oracle queries that automatically replace the standard Content Server queries when the Oracle Query Optimizer feature is installed and enabled. The queries in this table are customized with Oracle-specific hints to ensure more effective search performance.

**Figure 4-2** Query Definition Table

Query Definition Table		
name	queryStr	parameters
QdocNameMeta	SELECT /*+ index(Revisions dDocName)*/ Revisions.*, DocMeta.* FROM Revisions, DocMeta WHERE (Revisions.dDocName=? AND Revisions.dStatus<>'DELETED' AND Revisions.dID = DocMeta.dID) ORDER BY Revisions.dID DESC	dDocName varchar
QdocRev	SELECT /*+ INDEX(Revisions dDocName)*/ Revisions.*, DocMeta.* FROM Revisions, DocMeta WHERE (Revisions.dRevLabel=?) AND (Revisions.dDocName=?) AND (Revisions.dStatus<>'DELETED' AND Revisions.dID = DocMeta.dID) ORDER BY Revisions.dRevisionID DESC	dRevLabel varchar dDocName varchar
QlatestDocuments	SELECT /*+ INDEX(Revisions dInDate)*/ Revisions.*, Documents.*, DocMeta.* FROM Revisions, Documents, DocMeta WHERE Revisions.dID = Documents.dID AND DocMeta.dID = Documents.dID AND Documents.dIsPrimary <> 0 AND dInDate >= ? ORDER BY dDocName	dInDate date

During the optimization process, if Oracle hints are included in the query, no further processing is performed and the query is passed through—see [Stage 1: Query Analysis](#) (page 4-24). The screen below shows several entries in the Query Definition table.



**Caution:** The Query Definition Table lists the pre-defined queries and is located in the `<install_dir>/custom/OracleQueryOptimizer/resources/oraclequeryoptimizer_query.htm` directory. Do not modify any of the queries in this table.

## Content Server Hints

Content Server hints use a database-neutral hint syntax that supports multiple hints in the same query. A Content Server hint can be used in any query, data source, and WHERE clause. However, it cannot be combined with an Oracle hint. If a query contains both types of hints, the Oracle Query Optimizer will retain the Oracle hint and ignore the Content Server hint.

## Query Hints Syntax

During the optimization processing stages, the Oracle Query Optimizer feature recognizes the distinct syntaxes of both types of hints and correspondingly processes the submitted query. For more detailed information, see the [Query Optimization Process](#) (page 4-23).

### Oracle Hint Syntax

An Oracle hint uses the following format:

```
/*+ <hint> */
```

For example:

```
/*+ Index(Revisions dID)*/
```

### Content Server Hint Syntax

The Content Server hint syntax is database neutral and can support multiple Content Server hints in the same query. During the optimization process, Content Server hints are evaluated and the best hints are formatted and added back to the query.



**Note:** During the optimization process, a query that includes one or more Content Server hints is not parsed. Only Content Server hints are considered when choosing indexes.

#### ❖ *Content Server Hint Syntax:*

When a query undergoes the optimization process, Content Server hints are added to the reformatted query using the following syntax:

```
/*$<tableName>[ <aliasName>]:<columnName>[:<operator>
[:<value>]][, ...]*/
```

Where:

- Values enclosed in angle brackets (<value>) are required.
- Values enclosed in brackets ([value]) are optional.
- Ellipses (...) indicates a repetition of the previous expression(s).

#### ❖ *Query Before Optimization Process:*

```
SELECT *
FROM Revisions, DocTypes, RoleDefinition
WHERE /*$Revisions:dStatus*/(Revisions.dStatus<>'DELETED' AND
Revisions.dStatus<>'EXPIRED' AND Revisions.dStatus<>'RELEASED') AND
Revisions.dDocType = DocTypes.dDocType AND
/*$Revisions:dReleaseState*/Revisions.dReleaseState<>'E' AND
```

```
(Revisions.dSecurityGroup = RoleDefinition.dGroupName AND
RoleDefinition.dRoleName = ? AND RoleDefinition.dPrivilege > 0)
```

❖ ***Reformatted Query with Content Server Hints Added:***

After the query has undergone the optimization process, both indexes are used and are added to the native indexes.

```
SELECT/*+ LEADING(revisions) INDEX (revisions dStatus dReleaseState)*/ *
FROM Revisions, DocTypes, RoleDefinition
WHERE (Revisions.dStatus<>'DELETED' AND Revisions.dStatus<>'EXPIRED' AND
Revisions.dStatus<>'RELEASED') AND Revisions.dDocType = DocTypes.dDocType AND
Revisions.dReleaseState<>'E' AND (Revisions.dSecurityGroup =
RoleDefinition.dGroupName AND RoleDefinition.dRoleName = ? AND
RoleDefinition.dPrivilege > 0)
```

## Supported Search Operators and Keywords

The search operators and keywords that Oracle Query Optimizer feature supports include words and symbols that show the logical relationships between the words in your query. The following table lists these operators and keywords along with their use.

Operator	Use
=	Equal
<> or !=	Not equal
<	Less than
>	Greater than
<=	Less than or equal to.
>=	Greater than or equal to.
ALL	Returns records that match all of the listed conditions or values.
AND	Returns records that match the combined conditions or values.
ANY	Returns records that match one or more of the conditions or values.
BETWEEN ...AND...	Returns records that match a specific range set by two conditions or values.

Operator	Use
EXISTS	Returns records that match a record returned from a subquery.
IN	Returns records that match one condition or value in a list.
IS	Used only with the NULL or NOT NULL values. IS NULL returns records that match the null (empty field) value. IS NOT NULL returns records that match all values except the null value.
LIKE	Returns records that match a pattern. Conditions can include wildcards. For example, using % returns records that match values ranging from 0 to many.
NOT	Returns records that do not match the specified condition or value.
NULL	Returns records that match the null (empty field) value.
OR	Returns records that contain at least one of the conditions or values it links.

## Additional Supported Sort Constructs

Using Oracle sort constructs in search query clauses allows users greater flexibility when performing a query. Sort constructs specify the row data in two or more tables to be extracted, sorted, and combined. Essentially, the sort constructs serve the purpose of limiting the number of rows that are returned. The Oracle Query Optimizer feature recognizes the following sort constructs:

- ❖ **Group by**—sorts a set of records and specifies how to group the results.
- ❖ **Order by**—sorts a set of records and specifies whether the results are to be returned in ascending or descending order.
- ❖ **Inner join**—sorts a set of records by looking for and returning those that match.
- ❖ **Outer join**—sorts a set of records by looking for and returning those that do not match.

## The Hint Rules Table

The hint rules table contains the rules that the optimization feature uses to determine the proper hints to add to dynamic queries or data sources during the optimization process.

Using the [Hint Rule Editor](#) (page 4-50), a hint rule can be defined for a particular field and operator. A hint rule can also be defined based on values or date/number ranges. The hint rule table is extensible by other components, and can be updated while the Content Server is running.

**Figure 4-3** The Hint Rules Table

Key	Table	Column	Operator	Index	Order	Values	AllowMultiple	Disabled
PK_Revisions	Revisions	dID	equal	PK_Revisions	5		false	
dDocName	Revisions	dDocName	equal,like	dDocName	5		false	
dStatus	Revisions	dStatus	notin	dStatus	3	('RELEASED')	true	

Several default hint rules included with the Oracle Query Optimizer feature are described in [Examples: Explanations of Several Hint Rules](#) (page 4-32). For more detailed descriptions of the table columns, see [Hint Rules Table Column Descriptions](#) (page 4-33). The content of the hint rules table is available on the [Hint Rules Configuration Page](#) (page 4-49) that is accessed through the Administration tray.

The hint rules table is scheduled to reload every night, and when a rule is added or modified. The hint value is recalculated at each reload.



**Important:** Although the hint rules table includes a column allowing multiple indexes to be used in conjunction with each other, in Oracle only the bitmap index can be combined. This is because the hint rules table was designed for core Content Server functionality.

Therefore, it might not be sufficient for a system with components that create additional tables and/or add additional metadata fields. However, the hint rules table can be extended or overwritten by other components to provide knowledge of additional tables, indexes and fields.

## Examples: Explanations of Several Hint Rules

### ❖ *Explanation of First Hint Rule:*

For this rule, if the WHERE clause contains the following condition:

```
Revisions.dID = <some_value>
```

then the PK\_Revisions index is used and added as a hint to the optimized query.

### ❖ *Explanation of Second Hint Rule:*

For this rule, if the WHERE clause contains either of the following conditions:

```
Revisions.dDocName = <some_value>
```

```
Revisions.dDocName LIKE '<some_value>'
```

then the dDocName index is used and added as a hint to the optimized query.

❖ ***Explanation of Third Hint Rule:***

For this rule, if the WHERE clause contains the following condition:

```
dStatus = 'DONE'
```

then the condition does not meet the requirements and cannot be qualified. However, if the WHERE clause contains the following condition:

```
dStatus = 'RELEASED'
```

then the dStatus index is used and added as a hint to the optimized query.

## Hint Rules Table Column Descriptions

This section describes the following columns in the hint rules table:

- ❖ [Key](#) (page 4-33)
- ❖ [Table](#) (page 4-34)
- ❖ [Column](#) (page 4-34)
- ❖ [Operators](#) (page 4-34)
- ❖ [Index](#) (page 4-35)
- ❖ [Order](#) (page 4-35)
- ❖ [Values](#) (page 4-35)
- ❖ [AllowMultiple](#) (page 4-36)
- ❖ [Disabled](#) (page 4-36)

### Key

This column contains the unique name to identify the rule. A component can use the unique key to overwrite a particular rule. This key is usually identical to its index name because the index name is unique in the same database schema.

By default, Oracle uses a B+ Tree (binary tree) as the indexing structure to provide efficient access to logical records. B+ Tree indexes are most useful for queries involving a small number of result rows or when the user needs to execute queries using varying criteria (such as equality and range conditions). Because B+ Tree indexes store the indexed data values, these indexes are useful as sources of data if the requested value is the stored value.

However, bitmapped indexes offer substantial performance improvements with minimal storage cost compared to the default B+ Tree indexes. Bitmapped indexes are particularly

effective for searching columns with poor selectivity due to having very few distinct values. Also, a bitmap is built for each value including the NULL value (which means the NULL is indexed). Overall, using bitmapped indexes is very efficient because the index lookup process is a bit-level operation and allows access to multiple indexes.



**Note:** Because hint rules can be overwritten, the Oracle Query Optimizer feature does not allow you to add a hint rule using an existing key. Therefore, it is important when you are creating your bitmapped indexes for columns that you assign unique keys.

Oracle recommends that you use bitmapped indexes for the table columns listed below, and set the index name to the corresponding column name.

- ❖ Revisions table:
  - dIndexerState
  - dReleaseState
  - dProcessingState
  - dIsCheckedOut
  - dSecurityGroup
  - dStatus
- ❖ WorkflowDocuments table:
  - dWfDocState

### **Table**

This column identifies the specific database table.

### **Column**

This column identifies the specific column within the database table listed in the Table column.

### **Operators**

This column is a comma-separated list of allowable operators. See the Operators field and pull-down menu on the [Hint Rule Editor](#) (page 4-50) for more information about the valid operator options. The hint rule's operator is important in the decision of whether a hint rule will be applied to a condition.

For example, if the WHERE clause contains the following condition:

```
Revisions.dID = 3
```

then using the PK\_Revisions index would be a very valuable hint to include in an optimized query. However, if the WHERE clause contains the following condition:

```
Revisions.dID > 3
```

then using the PK\_Revisions index would not be useful.

## ***Index***

This column identifies the specific index to use in the optimized query if the condition meets the hint rule requirements.

## ***Order***

This column contains the preferred order to use when the rule is included in the hint rules table. The highest ordered rules in a query are given precedence when deciding which hint to use.

The order values include:

- ❖ **5**—This value indicates that the specified index is unique or does not match more than 50 rows for any value. For example, specifying dID with the Revisions, Documents, or DocMeta tables.
- ❖ **4**—This value indicates that the specified index should be somewhat less selective. The specified value should typically match a few rows and, at the very most, several hundred rows. For example, specifying dDocTitle with the Revisions table.
- ❖ **3**—This value indicates that the specified index matches less than a thousand rows. For example, specifying dInDate or dOutDate.
- ❖ **2**—This value indicates that the specified index matches less than ten thousand rows.
- ❖ **1**—This value indicates that the specified index matches more than ten thousand rows.

## ***Values***

This column is Idoc scriptable. This column can only be defined when the Operators column value is one of the following:

- ❖ **in** or **notIn**—When you use either of these operators, the value should be a comma-separated list enclosed in parenthesis.
- ❖ **range**—When you use this operator, the value must use one of the following formats:

- **Format 1:**

```
( [<lowValue>] , range [ , <highDateValue> ] )
```

Examples of acceptable values include:

```
('Y' , 'O')
```



```
(, 7d)
({ts '2004-12-11 12:03:23.000'}, 2d, <$dateCurrent()$>)
```

- **Format 2:**

```
#[d|h]
```

For example, a range of five days is 5d and seven hours is 7h.



**Tech Tip:** The operators **in** or **notIn** can substitute for the operators **equal** and **notEqual**, respectively, along with their matching values. For more information about operator options, see the Operators field and pull-down menu on the [Hint Rule Editor](#) (page 4-50).

The following use cases demonstrate how this column provides additional flexibility to the hint rules:

❖ ***Use Case 1: State or Status Table Columns***

Table columns that indicate a state or status such as dReleaseState or dStatus are biased in regard to the finished states. For example, dReleaseState is predisposed for 'Y' (released) or 'O' (old version). Likewise, dStatus is predisposed for and RELEASED. Therefore, in WHERE clauses, conditions such as dReleaseState = Y or dStatus = RELEASED match the majority of rows in the Revisions table. Thus, indexes for these two columns are almost useless. Conversely, the condition dReleaseState = N (new, not yet indexed) matches only a few rows. Consequently, indexes on this column would be very helpful.

❖ ***Use Case 2: Date or Number Table Columns***

Table columns that indicate a date or number exhibit similar behavior to state or status. For example, the condition dInDate < <\$dateCurrent()\$> matches almost all the table rows and makes indexes on this field irrelevant. However, the combined conditions dInDate < <\$dateCurrent()\$> AND dInDate > <\$dateCurrent(-1)\$> usually match only a small set of rows and would benefit from using the corresponding index as a hint.

## ***AllowMultiple***

This column indicates whether or not the defined index is used in conjunction with other indexes. In Oracle, only the bitmap index can be combined.

## ***Disabled***

This column indicates whether or not a hint rule has been disabled. Any rule in the table can be enabled/disabled. If you disable a hint rule, a value of 'Y' is displayed. Existing rules can be disabled to match the current Content Server state.

For example, if a Content Server instance contains only a few distinct content revClasses, each revClass may have thousands of revisions. Therefore, the dRevClass\_2 index is not very effective. In this case, this corresponding hint rule should be disabled and you should add one or more new rules with different preference orders.



**Note:** Although any rule in the table can be enabled/disabled, only the rules that are added using the [Hint Rule Editor](#) (page 4-50) can be removed. The default hint rules that are included with the Oracle Query Optimization feature can only be disabled; they cannot be removed.

## The Hint Cache

---

The Oracle Query Optimizer feature also contains a hint cache to store dynamically generated hints. For example, a hint derived from a parsed query or data source is cached to maintain persistence. In this way, the hint cache provides stability for queries and data sources.

The hint cache is used during the optimization process to select hints for queries that do not contain Oracle or Content Server hints. The hint cache provides a mechanism to fine tune query hints. In addition, administrator can check/edit cache and change hint for queries at run time.



**Note:** The hint cache is stored to disk every two hours and is reloaded when the Content Server instance is started.

The characteristics of the hint cache include:

- ❖ [Reusing Hint Cache Entries](#) (page 4-37)
- ❖ [Hint Cache Management](#) (page 4-38)
- ❖ [Default Capacity Algorithm](#) (page 4-39)
- ❖ [Origin of Hint Cache Keys](#) (page 4-39)
- ❖ [Hint Cache Persistence](#) (page 4-40)

## Reusing Hint Cache Entries

The same query matches the same cache entry regardless of its values unless the new value does not satisfy the hint rule conditions. Two examples are included below to demonstrate how the same hint cache entry can and can not be used for multiple queries.

### Example 1: Using Similar Hint Cache Entries

In the following two queries, the same hint cache entry is used because both queries match the hint rule requirements.

***QueryA:***

```
SELECT *
FROM Revisions
WHERE dDocName = 'name1'
```

***QueryB:***

```
SELECT *
FROM Revisions
WHERE dDocName = 'name2'
```

### Example 2: Using Different Hint Cache Entries

In the following two queries, the same hint cache entry can not be used because QueryB violates the requirements for the dReleaseState hint rule. The dReleaseState hint rule requires that the dReleaseState values are neither Y (released) nor O (old revision).

***QueryA:***

```
SELECT *
FROM Revisions
WHERE dReleaseState = 'U' AND dStatus = 'DONE'
```

***QueryB:***

```
SELECT *
FROM Revisions
WHERE dReleaseState = 'Y' AND dStatus = 'DONE'
```

## Hint Cache Management

In the hint cache, you can add a new entry, edit an existing entry, or remove an existing entry using the [Hint Cache Updater Page](#) (page 4-56). When adding or editing hint cache entries, you must use the [Content Server Hint Syntax](#) (page 4-29). The ability to manage the hint cache is very useful for fine tuning query hints. The example below demonstrates the benefits of fine tuning a hint cache entry.

**Example:**

If you have just batchloaded 100K content items into the Content Server and they are not yet indexed, the index-based query used above ([Example 2: Using Different Hint Cache Entries](#)) would match all of the batchloaded documents.

***QueryA:***

As long as most of the batchloaded documents have not been indexed, the dReleaseState index that is used in this query is not the best choice. For the best results

in this case, you should fine tune the hint cache entry to use both the dReleaseState and the dStatus indexes. Use the [Hint Cache Updater Page](#) (page 4-56) to update hint cache entries.

```
SELECT dID
FROM Revisions
WHERE Revisions.dReleaseState = N'N' AND Revisions.dStatus in (N'DONE',
N'RELEASED', N'DELETED') AND Revisions.dInDate<={ts '2005-02-23
17:46:38.321'}
```

### ***QueryB:***

After updating the hint cache entry, the new optimized query is:

```
SELECT/*+ LEADING(revisions) INDEX (revisions dReleaseState dStatus)*/ dID
FROM Revisions
WHERE Revisions.dReleaseState = N'N' AND Revisions.dStatus in (N'DONE',
N'RELEASED', N'DELETED') AND Revisions.dInDate<={ts '2005-02-23
17:46:38.321'}
```

## **Default Capacity Algorithm**

By default, the hint cache has a maximum capacity of 1000 hints. The hint cache uses the midpoint insertion least-recently-used (LRU) algorithm which is similar to the one used by Oracle and MySQL. A new entry is inserted into the middle of the queue and each subsequent execution moves the entry up one spot.

When the number of hints in the cache exceed the maximum capacity, the entry at the bottom of the queue is removed from the cache. Thus, the LRU algorithm ensures that the most recently executed query hints are in the upper levels of the queue.

## **Origin of Hint Cache Keys**

The hint cache key is generated from the normalized query—see [Stage 3: Normalization](#) (page 4-24). It consists of the qualified columns (columns that are qualified by table/alias names) and columns that have a hint rule defined. The cache key excludes conditions that contain joins or subqueries.

The following example illustrates how the cache key is generated from a given query:

```
SELECT DocMeta.*, Documents.*, Revisions.*
FROM DocMeta, Documents, Revisions
WHERE DocMeta.dID = Revisions.dID AND Revisions.dID=Documents.dID AND
Revisions.dDocName='abc' AND Revisions.dStatus<>'DELETED' AND
(Revisions.dReleaseState='U' OR Revisions.dReleaseState='I' OR
Revisions.dReleaseState='Y') AND Documents.dIsPrimary<>0
```

The generated cache key is as follows:

```
documents.disprimary:notequal:documents|revisions.ddocname:equal:revisions|
revisions.dreleasestate:in:revisions|revisions.dstatus:notequal:revisions
```

## Hint Cache Persistence

The hint cache is designed to be persistent. To ensure this, the hint cache is saved to the file system every two hours. The persisted hint cache is reloaded when the Content Server instance is started.

## Using Hint Rules

---

The following tasks are involved in using hint rules:

- ❖ [Adding and Enabling New Hint Rules](#) (page 4-40)
- ❖ [Editing Existing Hint Rules](#) (page 4-41)
- ❖ [Disabling Hint Rules](#) (page 4-41)
- ❖ [Enabling Hint Rules](#) (page 4-41)
- ❖ [Removing Hint Rules](#) (page 4-42)

To access the Hint Rules Configuration page:

1. Open the **Administration** tray.
2. Click the **Hint Rules Configuration** link.

The Hint Rules Configuration page is displayed.

3. Click the **Show hint rule editor** toggle switch on the Hint Rules Configuration page.  
The Hint Rule Editor is displayed.

## Adding and Enabling New Hint Rules

To add a new hint rule to the hint rules table:

1. Click the **Show hint rule editor** toggle switch on the Hint Rules Configuration page.  
The Hint Rule Editor is displayed.
2. Complete the fields as desired. For more detailed explanations of each field, see [The Hint Rules Table](#) (page 4-31) and the [Hint Rule Editor](#) (page 4-50).
3. Click the **Add/Enable** button.

The new hint rule is added to the hint rules table and is effective immediately.

## Editing Existing Hint Rules

To edit an existing hint rule in the hint rules table:

1. Select the desired hint rule in the hint rules table.

The Hint Rule Editor is displayed and all of the applicable fields are populated with the hint rule's values.

2. Edit the fields as desired. For more detailed explanations of each field, see [The Hint Rules Table](#) (page 4-31) and the [Hint Rule Editor](#) (page 4-50).
3. Change the key.
4. Click the **Add/Enable** button.

The hint rules table is refreshed and the new hint rule is added. The modifications are effective immediately.

5. Delete the old hint rule.

## Disabling Hint Rules



**Note:** Although any rule in the table can be enabled/disabled, only the rules that are added through the [Hint Rule Editor](#) (page 4-50) can be removed. The default hint rules that are included with the Oracle Query Optimization feature can only be disabled; they cannot be removed.

To disable a hint rule in the hint rules table:

1. Select the desired hint rule in the hint rules table.

The Hint Rule Editor is displayed and all of the applicable fields are populated with the hint rule's values.

2. Click the **Disable** button.

The hint rules table is refreshed and 'Y' is displayed in the Disabled column indicating that the hint rule is deactivated.

## Enabling Hint Rules



**Note:** Although any rule in the table can be enabled/disabled, only the rules that are added through the [Hint Rule Editor](#) (page 4-50) can be removed. The default hint rules that are included with the Oracle Query Optimization feature can only be disabled; they cannot be removed.

To enable a disabled hint rule in the hint rules table:

1. Select the desired hint rule in the hint rules table.

The Hint Rule Editor is displayed and all of the applicable fields are populated with the hint rule's values.

2. Click the **Add/Enable** button.

The hint rules table is refreshed and the Disabled column is clear indicating that the hint rule is reactivated.

## Removing Hint Rules



**Note:** Although any rule in the table can be enabled/disabled, only the rules that are added through the [Hint Rule Editor](#) (page 4-50) can be removed. The default hint rules that are included with the Oracle Query Optimization feature can only be disabled; they cannot be removed.

To delete a hint rule from the hint rules table:

1. Select the desired hint rule in the hint rules table.

The Hint Rule Editor is displayed and all of the applicable fields are populated with the hint rule's values.

2. Ensure that the hint rule is enabled. If the hint rule is disabled it can not be removed. To reactivate a disabled hint rule, see [Enabling Hint Rules](#) (page 4-41).

3. Click the **Remove** button.

The hint rules table is refreshed and the selected hint rule is removed.

## Using the Query Converter

---

The following tasks are involved when you use the Query Converter:

- ❖ [Converting a Data Source or Query](#) (page 4-43)
- ❖ [Editing a Converted Data Source or Query](#) (page 4-44)

The Query Converter page can be accessed from both the [Hint Rules Configuration Page](#) (page 4-49) or the [Hint Cache Updater Page](#) (page 4-56):

### From the Hint Rules Configuration page

1. Open the **Administration** tray.

2. Click the **Hint Rules Configuration** link.

The Hint Rules Configuration page is displayed.

3. Select **Query Converter** from the Action pull-down menu.

The Query Converter page is displayed.

#### **From the Hint Cache Update page**

1. Select **Query Converter** from the Action pull-down menu.

The Query Converter page is displayed.

## **Converting a Data Source or Query**

### ***Data Source:***

1. If applicable, select the **Use Data Source** check box.

The data source-related fields are displayed on the Query Converter page.

2. Select the desired data source from the **DS Name** pull-down menu.

The data source query is displayed in below the DS Name field.

3. Enter the applicable information for additional parameters and WHERE clauses.

4. Click **Convert Query**.

The data source is converted and the results are displayed in a text area above the Use Data Source check box. To see an example of a converted data source, see [Example of Converted Data Source](#) (page 4-55).

### ***Query:***

1. If applicable, clear the **Use Data Source** check box.

The data source-related fields are hidden from the Query Converter page.

2. Enter the applicable information for the query.

3. Click **Convert Query**.

The query is converted and the results are displayed in a text area above the Use Data Source check box. To see an example of a converted query, see [Example of Converted Query](#) (page 4-56).



## Editing a Converted Data Source or Query

After the data source or query is converted, the results are displayed above the Use Data Source check box. Because the conversion process clears the fields, the converted query can only be modified by entering new information in the fields. To do this for a data source or query, see the applicable sections in [Converting a Data Source or Query](#) (page 4-43).

## Updating the Hint Cache

---

The following tasks are involved when updating the hint cache:

- ❖ [Checking the Hint Cache for Existing Hints](#) (page 4-44)
- ❖ [Modifying an Existing Hint Cache Query or Data Source Entry](#) (page 4-45)
- ❖ [Removing a Hint Cache Query or Data Source Entry](#) (page 4-47)

The Hint Cache Updater page can be accessed from both the [Hint Rules Configuration Page](#) (page 4-49) or the [Query Converter Page](#) (page 4-53):

### From the Hint Rules Configuration page

1. Open the **Administration** tray.
2. Click the **Hint Rules Configuration** link.
3. The Hint Rules Configuration page is displayed.
4. Select **Hint Cache Updater** from the Action pull-down menu.
5. The Hint Cache Updater page is displayed.

### From the Query Converter page

1. Select **Hint Cache Updater** from the Action pull-down menu.
- The Hint Cache Updater page is displayed.

## Checking the Hint Cache for Existing Hints

### **Data Source:**

1. If applicable, select the **Use Data Source** check box.  
The data source-related fields are displayed on the Hint Cache Updater page.
2. Select the desired data source from the **DS Name** pull-down menu.  
The data source query is displayed in below the DS Name field.

3. Enter the applicable information for the additional parameters, WHERE clause, and hints.
4. Click **Check Cache**.

The results are displayed above the Use Data Source check box. To see an example of an unsuccessful hint search, see [Example of Hint Cache Updating Results with Data Source](#) (page 4-59). To see an example of a successful hint search, see the screen capture included in this section.

### Query:

1. If applicable, clear the **Use Data Source** check box.

The data source-related fields are hidden from the Query Converter page.

2. Enter the applicable information.
3. Click **Check Cache**.

The results are displayed above the Use Data Source check box. In the screen capture note that the hint was found in the hint cache (old hint).

**Figure 4-4** Hint found in hint cache

<b>Hint Found</b>	<b>query</b> SELECT dID FROM Revisions WHERE Revisions.dReleaseState = 'N' AND Revisions.dStatus in ('N'DONE', 'N'RELEASED', 'N'DELETED') AND Revisions.dInDate<={ts '2005-05-25 05:34:34.432'} <b>cache key</b> Revisions revisions.dindate:le:revisions revisions.dreleasestate:notin: ('y','o'):revisions revisions.dstatus:in:revisions <b>old hint</b> Revisions Revisions:dReleaseState:dReleaseState:3: ('y','o'):1:Revisions
<b>Use Data Source</b>	<input type="checkbox"/>
<b>Query</b>	<input type="text"/>
<b>Hints</b>	<input type="text"/>
<input type="button" value="Check Cache"/> <input type="button" value="Update Cache"/> <input type="button" value="Remove"/>	

## Modifying an Existing Hint Cache Query or Data Source Entry

### Data Source:

1. If applicable, select the **Use Data Source** check box.

The data source-related fields are displayed on the Hint Cache Updater page.

2. Select the desired data source from the **DS Name** pull-down menu.

The data source query is displayed in below the DS Name field.

3. Enter the applicable information for the additional parameters, WHERE clause, and hints.
4. Click **Check Cache** to find any existing hints in the hint cache. See [Checking the Hint Cache for Existing Hints](#) (page 4-44).
5. Click **Update Cache** to overwrite the previous hint cache.

The results are displayed in a text box above the Use Data Source check box. To see an example of successfully adding a new hint to a query and updating the hint cache, see the screen capture included in this section.

### **Query:**

1. If applicable, clear the **Use Data Source** check box.

The data source-related fields are hidden from the Query Converter page.

2. Enter the applicable information.
3. Click **Check Cache** to find any existing hints in the hint cache. See [Checking the Hint Cache for Existing Hints](#) (page 4-44).
4. Click **Update Cache** to overwrite the previous hint cache.

The results are displayed above the Use Data Source check box. In the screen capture note that the new hint was added and the hint cache was updated.

**Figure 4-5** New hint added, hint cache updated

<b>Updated</b>	<b>query</b>	SELECT dID FROM Revisions WHERE Revisions.dReleaseState = N'N' AND Revisions.dStatus in (N'DONE', N'RELEASED', N'DELETED') AND Revisions.dInDate<={ts '2005-05-25 05:34:34.432'}
	<b>cache key</b>	Revisions revisions.dindate:le:revisions revisions.dreleasestate:notin:('y','o'):revisions revisions.dstatus:in:revisions
	<b>old hint</b>	Revisions Revisions:dReleaseState:dReleaseState:3:('y','o'):1:Revisions
	<b>new hint</b>	Revisions:dInDate:dInDate:3:(,7d):0:revisions
	<b>message</b>	Hint cache is updated

Use Data Source

☐

Query

Hints

## Removing a Hint Cache Query or Data Source Entry

### **Data Source:**

1. If applicable, select the **Use Data Source** check box.

The data source-related fields are displayed on the Hint Cache Updater page.

2. Select the desired data source from the **DS Name** pull-down menu.

The data source query is displayed in below the DS Name field.

3. Enter the applicable information for the additional parameters, WHERE clause, and hints.
4. Click **Remove**.

The information entered into the fields is removed. To see an example of successfully removing a hint from a query and the hint cache, see the screen capture included in this section.

### **Query:**

1. If applicable, clear the **Use Data Source** check box.

The data source-related fields are hidden from the Query Converter page.

2. Enter the applicable information for the query and hints.
3. Click **Remove**.

The results are displayed above the Use Data Source check box. In the screen capture note that the previously added hint was deleted from the query and hint cache.

Figure 4-6 Deleted hint

Removed	query	SELECT dID FROM Revisions WHERE Revisions.dReleaseState = N'N' AND Revisions.dStatus in (N'DONE', N'RELEASED', N'DELETED') AND Revisions.dInDate<={ts '2005-05-25 05:34:34.432'}
	cache key	Revisions revisions.dindate:le:revisions revisions.dreleasestate:notin:('y','o'):revisions revisions.dstatus:in:revisions
	old hint	Revisions:dInDate:dInDate:3:(,7d):0:revisions
	message	Hint is removed from cache.

Use Data Source ☐

Query

Hints

Check Cache

Update Cache

Remove

## Oracle Query Interface Screens

The following screens are used with the Oracle Query Optimizer feature:

- ❖ [Hint Rules Configuration Page](#) (page 4-49)
- ❖ [Hint Rule Editor](#) (page 4-50)
- ❖ [Query Converter Page](#) (page 4-53)

## Hint Rules Configuration Page

Oracle Query Optimizer>Hint Rules Configuration									
								Show hint rule editor	
Key	Table	Column	Operator	Index	Order	Values	AllowMultiple	Disabled	
PK_Revisions	Revisions	dID	equal	PK_Revisions	5		false		
dDocName	Revisions	dDocName	equal,like	dDocName	5		false		
RevdRevClassID	Revisions	dRevClassID	equal	dRevClassID_2	5		false		
DocsdID	Documents	dID	equal	dID_2	5		false		
PK_Documents	Documents	dDocID	equal	PK_Documents	5		false		
PK_DocMeta	DocMeta	dID	equal	PK_DocMeta	5		false		
PK_WorkflowDocs	WorkflowDocuments	dDocName	equal	PK_WorkflowDocuments	5		false		
dWfDocState	WorkflowDocuments	dWfDocState	equal	dWfDocState	5		true		
PK_Workflows	Workflows	dWfID	equal	PK_Workflows	5		false		
PK_Users	Users	dName	equal	PK_Users	5		false		
PK_UserSecAttr	UserSecurityAttributes	dUsername	equal	PK_UserSecurityAttributes	5		false		
dInDate	Revisions	dInDate	range	dInDate	3	(,7d)	false	Y	
dOutDate	Revisions	dOutDate	range	dOutDate	3	(,7d)	false		
dReleaseDate	Revisions	dReleaseDate	range	dReleaseDate	3	(,7d)	false		
dStatus	Revisions	dStatus	notIn	dStatus	3	('RELEASED')	true		
dReleaseState	Revisions	dReleaseState	notIn	dReleaseState	3	('Y','O')	true		
dIndexerState	Revisions	dIndexerState	equal,in	dIndexerState	3		true		
								Show hint rule editor	

The hint rules table contains the rules that the query optimizer uses to select hints during the [Query Optimization Process](#) (page 4-23). The rules in this table are displayed on the Hint Rules Configuration page. It is accessed by clicking **Hint Rules Configuration** in the Administration tray. For more detailed information about the hint rules table, see [The Hint Rules Table](#) (page 4-31).

Feature	Description
Action pull-down menu	Lists the following options: <b>Query Converter</b> —displays the <a href="#">Query Converter Page</a> (page 4-53). <b>Hint Cache Updater</b> —displays the <a href="#">Hint Cache Updater Page</a> (page 4-56).
Show/Hide hint rule editor toggle switches	By default, only the hint rules table is displayed after accessing the Hint Rules Configuration page. One toggle switch is located below the Action pull-down menu and the other is positioned below the hint rules table. When the <a href="#">Hint Rule Editor</a> (page 4-50) is displayed, both toggle switches convert to Hide hint rule editor. <b>Show hint rule editor</b> —displays the Hint Rule Editor. <b>Hide hint rule editor</b> —conceals the Hint Rule Editor.

Feature	Description
Hint rules table columns	For more detailed descriptions and information about the individual columns, see <a href="#">The Hint Rules Table</a> (page 4-31).

## Hint Rule Editor

The Hint Rule Editor provides a way to add, remove, enable, or disable rules. You can add a new rule to reflect new tables and indexes. Existing rules can be removed or disabled to match the current state of Content Server. If you select a hint rule from the hint rule table, the Hint Rule Editor fields are automatically populated with the applicable values.

The Hint Rule Editor is accessed by clicking one of the Show hint rule editor toggle switches on the [Hint Rules Configuration Page](#) (page 4-49) and is displayed below the hint rules table.

The hint rules table is scheduled to reload every night and when a new rule is added or an existing rule is modified. The hint value is recalculated at each reload.



**Note:** Although any rule in the table can be enabled/disabled, only the rules that are added through the Hint Rule Editor can be removed. The default hint rules that are included with the Oracle Query Optimization feature can only be disabled; they can not be removed.

Feature	Description
Key field	The unique name that identifies the hint rule.

Feature	Description
Table field and pull-down menu	Identifies the database table associated with the hint rule. The pull-down menu lists the current database tables. Selecting a table from the pull-down menu automatically populates the Column field, Column pull-down menu options, Index field and Index pull-down menu options.
Column field and pull-down menu	Identifies the database table column associated with the hint rule. Selecting a column from the pull-down menu automatically populates the Index field and Index pull-down menu options.
Index field and pull-down menu	Identifies the index associated with the hint rule.



Feature	Description
Operators field and pull-down menu	<p>Identifies the specific operator(s) associated with the hint rule. Valid options include:</p> <p><b>equal</b>—compares records to find equal values.</p> <p><b>like</b>—compares records to find similar values.</p> <p><b>in</b>—compares records to find values equal to any member of the specified item(s). Using this operator allows you to define the Values field.</p> <p><b>greater</b>—compares records to find larger values on the left.</p> <p><b>ge</b>—(greater than or equal to) compares records to find equal values or larger values on the left.</p> <p><b>le</b>—(less than or equal to) compares records to find equal values or smaller values on the left.</p> <p><b>less</b>—compares records to find larger values on the right.</p> <p><b>notEqual</b>—compares records to find different values.</p> <p><b>notIn</b>—compares records to find values that are not equal to any member of the specified item(s). Using this operator allows you to define the Values field.</p> <p><b>notLike</b>—compares records to find dissimilar values.</p> <p><b>generic</b>—this operator should be used if multiple operators are used in the conditions and are connected by an OR conjunction. For example: <code>dIndexerState IS NULL OR dIndexerState IN ('N', 'Y')</code>.</p> <p><b>range</b>—this operator can be applied to an Integer field or a Date field. This operator should be used when the Values field is defined with a valid range of values that would cause the hint to be applied. Using this operator allows you to define the Values field. For more detailed information about range operator formats, see <a href="#">Values</a> (page 4-35).</p>
Order pull-down menu	<p>In descending order from 5 to 1, indicates the preference value of the hint rule. During the optimization process, the highest ranked hint rule that meets the condition's requirements is selected. For more detailed information, see <a href="#">Order</a> (page 4-35).</p>

Feature	Description
Values field	Specifies applicable quantities when used in conjunction with the operators in, notIn, and range—see the Operators field on the <a href="#">Hint Rule Editor</a> (page 4-50). For more detailed information about using this Values field with the allowed operators, see <a href="#">Values</a> (page 4-35).
AllowMultiple pull-down menu	Available options include: <b>Yes</b> —the defined index can be used in conjunction with other indexes. <b>No</b> —the defined index must be used alone.
Add/Enable button	Used to add/edit a hint rule or activate a disabled hint rule.
Disable button	Deactivates the selected rule. For more detailed information, see <a href="#">Disabled</a> (page 4-36).
Remove button	Deletes the selected hint rule from the hint rules table. Only rules added using the Hint Rule Editor can be removed.

## Query Converter Page

Figure 4-7 Query Converter Page with the Data Source Option

Oracle Query Optimizer > Query Converter

Use Data Source ☒

DS Name Documents

SELECT Revisions.\*, DocMeta.\*, Documents.\* FROM Revisions, DocMeta, Documents WHERE Revisions.dID = Documents.dID AND Revisions.dID = DocMeta.dID AND Documents.dIsPrimary <> 0

Additional Parameters

Where Clause

Convert Query

**Figure 4-8** Query Converter Page without the Data Source Option

Oracle Query Optimizer > Query Converter

Use Data Source ☐

Query

Convert Query

The Query Converter page displays the end result of a converted query and allows you to modify a converted query by adding, editing, or deleting conditions from the WHERE clause. This allows you to see exactly what will be executed when the query is submitted. Converted queries can optionally include data sources. The Query Converter page is accessed from the [Hint Rules Configuration Page](#) (page 4-49) by selecting **Query Converter** from the Action pull-down menu.

Feature	Description
Action pull-down menu	Lists the following options: <b>Hint Cache Updater</b> —displays the <a href="#">Hint Cache Updater Page</a> (page 4-56). <b>Hint Rules Configuration</b> —displays the <a href="#">Hint Rules Configuration Page</a> (page 4-49).
Use Data Source check box	This check box acts as a toggle switch to display or hide the fields related to converting a data source. <b>Selected</b> —on the Query Converter page, displays all the fields. This is the default setting. <b>Clear</b> —on the Query Converter page, hides the DS Name pull-down menu and text area and the Additional Parameters field on the <a href="#">Hint Cache Updater Page</a> (page 4-56).
DS Name pull-down menu and text area	The pull-down menu lists the available data source names and, when you select one, the text area displays the current contents of the data source query.
Additional Parameters field	One or more variables that are evaluated for the data source used to generate a query related to a specific environment.

Feature	Description
where Clause/Query field	<p><b>where Clause</b>—this field is displayed when the Use Data Source check box is selected. Allows you to enter additional conditions that are appended to the existing WHERE clause in the data source. You can copy and paste an existing WHERE clause or enter it manually.</p> <p><b>Query</b>—this field displays when the Use Data Source check box is clear. Allows you to enter a full query to be evaluated. You can copy and paste an existing query or enter it manually.</p>
Convert Query button	Submits the information for the data source or query to be evaluated using the <a href="#">Query Optimization Process</a> (page 4-23). The submitted data source or query is converted from a standard query to an optimized query that uses customized hints. To see a converted data source or query, see <a href="#">Example of Converted Data Source</a> (page 4-55) or <a href="#">Example of Converted Query</a> (page 4-56), respectively.

### Examples of Converted Data Source and Query

Figure 4-9 Example of Converted Data Source

**Converted Data Source**

Name Documents

Query  
SELECT Revisions.\*, DocMeta.\*, Documents.\* FROM Revisions, DocMeta, Documents WHERE Revisions.dID = Documents.dID AND Revisions.dID = DocMeta.dID AND Documents.dIsPrimary <> 0

Where Clause

**Use Data Source** ☒

**DS Name** Documents

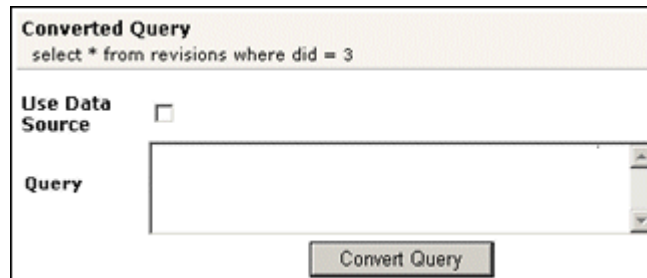
SELECT Revisions.\*, DocMeta.\*, Documents.\* FROM Revisions, DocMeta, Documents WHERE Revisions.dID = Documents.dID AND Revisions.dID = DocMeta.dID AND Documents.dIsPrimary <> 0

**Additional Parameters**

**Where Clause**

Convert Query

Figure 4-10 Example of Converted Query



**Converted Query**  
select \* from revisions where did = 3

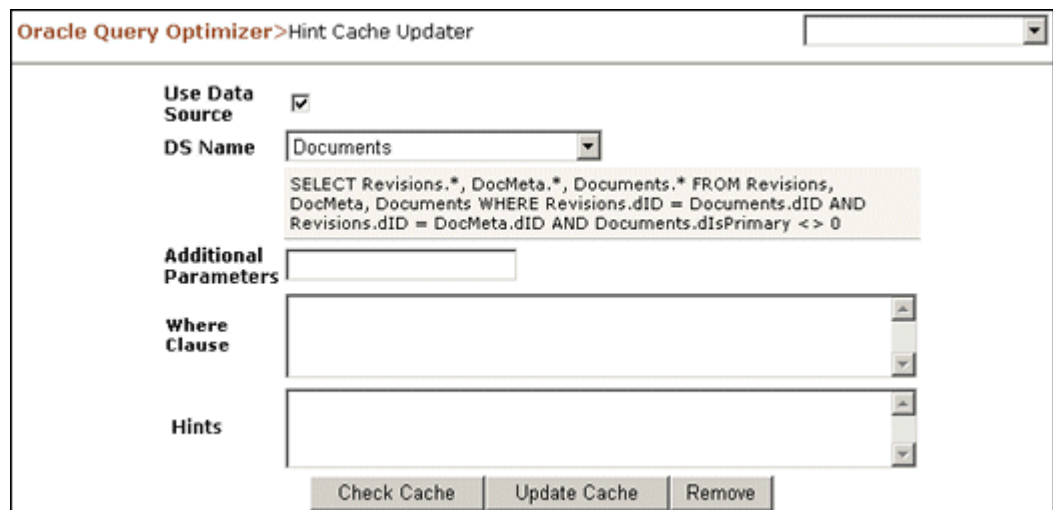
**Use Data Source** ☐

**Query**

**Convert Query**

## Hint Cache Updater Page

Figure 4-11 Hint Cache Updater Page with the Data Source Option



**Oracle Query Optimizer>Hint Cache Updater**

**Use Data Source** ☒

**DS Name** **Documents**

SELECT Revisions.\*, DocMeta.\*, Documents.\* FROM Revisions, DocMeta, Documents WHERE Revisions.dID = Documents.dID AND Revisions.dID = DocMeta.dID AND Documents.dIsPrimary <> 0

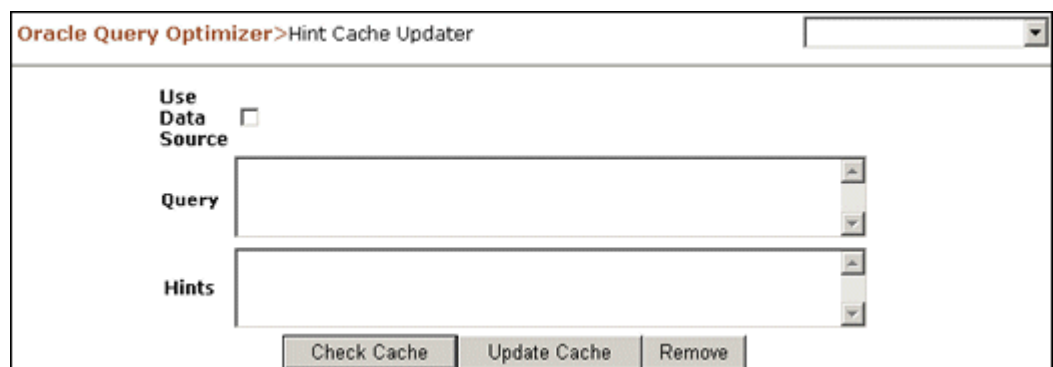
**Additional Parameters**

**Where Clause**

**Hints**

**Check Cache** **Update Cache** **Remove**

Figure 4-12 Hint Cache Updater Page without the Data Source Option



**Oracle Query Optimizer>Hint Cache Updater**

**Use Data Source** ☐

**Query**

**Hints**

**Check Cache** **Update Cache** **Remove**

You can add a new entry, edit an existing entry, or remove an existing entry which allows you to fine tune query hints. Additionally, you can monitor and edit entries in the hint

cache at run time to customize them for specific queries. The Hint Cache Updater page is accessed from the [Hint Rules Configuration Page](#) (page 4-49) by selecting **Hint Cache Updater** from the Action pull-down menu. For more detailed information about the hint cache, see [The Hint Cache](#) (page 4-37).

Feature	Description
Action pull-down menu	Lists the following options: <b>Query Converter</b> —displays the <a href="#">Query Converter Page</a> (page 4-53). <b>Hint Rules Configuration</b> —displays the <a href="#">Hint Cache Updater Page</a> (page 4-56).
Use Data Source check box	This check box acts as a toggle switch to display or hide the fields related to managing the data source-based entries in the hint cache. <b>Selected</b> —on the Hint Cache Updater page, displays all the fields. This is the default setting. <b>Clear</b> —on the Hint Cache Updater page, hides the DS Name pull-down menu and text area and the Additional Parameters field.
DS Name pull-down menu and text area	The pull-down menu lists the available data source names and, when you select one, the text area displays the current contents of the data source query.
Additional Parameters field	One or more variables that are evaluated for the data source used to generate a query related to a specific environment.
where Clause/Query field	<b>where Clause</b> —this field is displayed when the Use Data Source check box is selected. Allows you to enter additional conditions that are appended to the existing WHERE clause in the data source. You can copy and paste an existing WHERE clause or enter it manually. <b>Query</b> —this field displays when the Use Data Source check box is clear. Allows you to enter a full query to be evaluated. You can copy and paste an existing query or enter it manually.

Feature	Description
Hints field	<p>Enter any additional hints for the data source or query. If you enter one or more <a href="#">Content Server Hints</a> (page 4-28), the Oracle Query Optimizer feature will consider them as default hints and they will not go through the <a href="#">Query Optimization Process</a> (page 4-23). If you enter multiple hints, the feature will look for the best hint and, if possible, select more than one.</p>
Check Cache button	<p>Evaluates the submitted query and checks the hint cache to determine if matching hints already exist. If so, they are returned. If not, the message, “Hint does not exist in cache” is displayed.</p> <p><b>With data source</b>—Combines the WHERE clause and hints and applies the additional parameters before submitting the query for evaluation.</p> <p><b>Without data source</b>—Combines the query and hints before submitting the query for evaluation.</p>
Update Cache button	<p>Ensures that the data source or query will always use the specified hints because the hint cache is updated. Thus, clicking this button results in a manual overwrite of the previously defined hint cache. This means that from now on, the new hints will be used with this particular query.</p> <p>To see the results of updating a data source or query entry, see <a href="#">Example of Hint Cache Updating Results with Data Source</a> (page 4-59) or <a href="#">Example of Hint Cache Updating Results without Data Source</a> (page 4-59), respectively.</p>
Remove button	<p>Removes the information entered into any of the fields for the specified query. To see the results of removing an existing hint from a query, see <a href="#">Removing a Hint Cache Query or Data Source Entry</a> (page 4-47).</p>

## Examples of Hint Cache Updating Results

**Figure 4-13** Example of Hint Cache Updating Results with Data Source

<b>Hint Not Found</b>	<b>data source</b> Documents <b>where clause</b> revisions.dreleasestate = n'n' <b>cache key</b> revisions.dreleasestate:notin:('y','o'):revisions <b>message</b> Hint does not exist in cache.
<b>Use Data Source</b>	<input checked="" type="checkbox"/>
<b>DS Name</b>	Documents
	SELECT Revisions.*, DocMeta.*, Documents.* FROM Revisions, DocMeta, Documents WHERE Revisions.dID = Documents.dID AND Revisions.dID = DocMeta.dID AND Documents.dIsPrimary < > 0
<b>Additional Parameters</b>	
<b>Where Clause</b>	
<b>Hints</b>	
<input type="button" value="Check Cache"/> <input type="button" value="Update Cache"/> <input type="button" value="Remove"/>	

**Figure 4-14** Example of Hint Cache Updating Results without Data Source

<b>Hint Not Found</b>	<b>query</b> SELECT Revisions.*, DocMeta.*, Documents.* FROM Revisions, DocMeta, Documents WHERE Revisions.dID = Documents.dID <b>message</b> Hint does not exist in cache.
<b>Use Data Source</b>	<input type="checkbox"/>
<b>Query</b>	
<b>Hints</b>	
<input type="button" value="Check Cache"/> <input type="button" value="Update Cache"/> <input type="button" value="Remove"/>	



# CONFIGURING A WEB SERVER FILTER

## OVERVIEW

---

This section covers these topics:

### **Concepts**

- ❖ [Content Server's Use of a Web Server](#) (page 5-2)
- ❖ [Web Servers](#) (page 5-2)
- ❖ [Local Web Server Filter](#) (page 5-3)
- ❖ [WebUrlMap Feature](#) (page 5-5)

### **Tasks**

- ❖ [Setting Web Filter Configuration Options](#) (page 5-9)
- ❖ [Viewing the Web Filter Log](#) (page 5-9)
- ❖ [Configuring IIS for External Security](#) (page 5-9)

### **Interface**

- ❖ [Configure Web Server Filter Page](#) (page 5-12)
- ❖ [WebUrlMaps Screen](#) (page 5-15)

## CONTENT SERVER'S USE OF A WEB SERVER

---

In general terms, a web server is a computer equipped with the server software that uses Internet protocols such as HTTP to respond to client browser requests on a TCP/IP network. Web servers make it easy to publish content to the Internet. Common web servers such as Internet Information Services (IIS), iPlanet/Sun ONE, and Apache can help you administer, oversee, and maintain a web site.

Content Server requires a web server to be able to serve pages through a browser. A local web server filter is installed in the web server so that user requests can be authenticated in the content server.

When Content Server is installed, the web server filter is installed with default configuration settings. However, you can change and troubleshoot these settings on the [Configure Web Server Filter Page](#) (page 5-12).

### Web Servers

---

Content Server works with several common web servers:

- ❖ [Internet Information Services \(IIS\)](#) (page 5-2)
- ❖ [iPlanet/Sun ONE](#) (page 5-2)
- ❖ [Apache](#) (page 5-3)

### Internet Information Services (IIS)

IIS is Microsoft's web server. IIS has a built-in mechanism where it authenticates the user password after querying the PDC (Primary Domain Controller), or cache. After this process, the local ISAPI web server filter takes over the authorization protocol.

### iPlanet/Sun ONE

The iPlanet/Sun ONE web server is Sun's web server. iPlanet/Sun ONE automatically defaults the authentication protocol to Netscape Directory Server. The local NSAPI web server filter authenticates content server requests in an iPlanet/Sun ONE web server.

## Apache

The Apache HTTP server is an open-source web server that can run on Windows or UNIX operating systems. The local Apache Loadable Module (ALM) authenticates content server requests in the Apache web server.

### See Also

- [Local Web Server Filter](#) (page 5-3)
- *Getting Started with the Software Developer's Kit (SDK)*

## Local Web Server Filter

---

When Content Server is installed, an ISAPI or NSAPI web server filter is also installed in the default web server. The Apache module must be installed manually. The local web server filter is written in C++, which makes it compatible with multiple operating systems and multiple web servers.

The following web server filter files are located in the `<install_dir>/idcplg/` directory:

- ❖ **IIS (ISAPI):** `idc_cgi_isapi-<instance>.dll`
- ❖ **iPlanet/Sun ONE (NSAPI):** `nph-idc_cgi.exe`

## Filter Plug-Ins

Some Content Server features include a custom filter plug-in that modifies the behavior of the standard web server filter.

The name of the custom plug-in is specified in the `IdcAuthPlugins` table, which is typically defined in the `<install_dir>/data/users/SecurityInfo.hda` file, or can be defined in a resource table that is merged into the `IdcAuthPlugins` table. For example, the Extranet Look feature includes the following files to add the `CookieLoginPlugin` filter plug-in:

- ❖ `extranetlook_resource.hda` file:
 

```
@ResultSet IdcAuthPlugins_CookieLogin
2
iapExportedSymbolName
iapFileNameRoot
CookieLoginPlugin
CookieLoginPlugin
@end
```



**Note:** The *iapFileNameRoot* can be a full path rather than just the file name of the plug-in.

❖ extranet\_look.hda file:

```
@ResultSet MergeRules
4
fromTable
toTable
column
loadOrder
IdcAuthPlugins_CookieLogin
IdcAuthPlugins
iapExportedSymbolName
1
...
@end
```

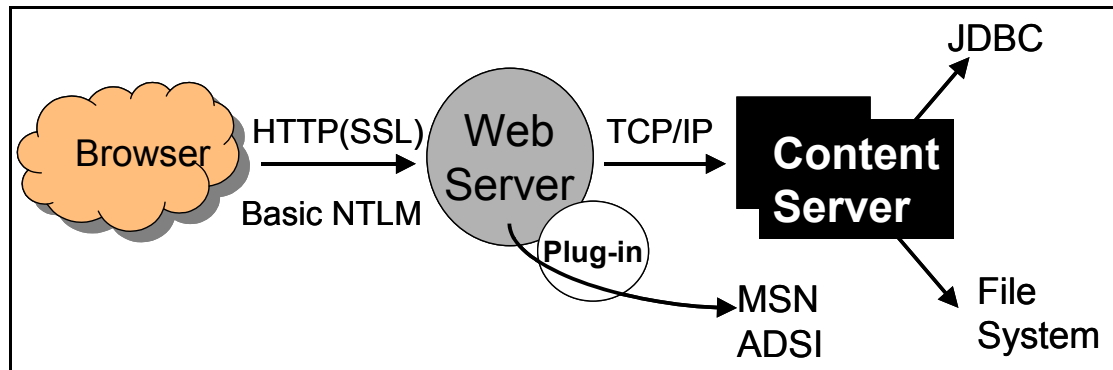
## Plug-in Architecture

The web server filter uses a universal plug-in architecture that allows the filter to process events such as:

- ❖ preprocessRequest
- ❖ computeUser
- ❖ computeCredentials
- ❖ alterCredentials
- ❖ alterApproveUrl
- ❖ immediateResponsePage
- ❖ computerServerResponse
- ❖ handleRequest
- ❖ getFilterVersion

This architecture uses a number of communication protocols. In a typical Windows security integration scenario, the browser makes a call to the web server using HTTP (Hypertext Transfer Protocol), in which case the web server goes to the NT domain or Active Directory to verify the user's credentials using NTLM. When the web server receives a response, it queries the PDC (Primary Domain Controller) and send the user's credentials via TCP/IP.

Figure 5-1 Plug-In Architecture for the Web Server Filter



## WEBSITE MAP FEATURE



**Note:** If you chose to enable the WebsiteMap feature during the Content Server installation process, then the functionality described in this section is available to you.

The WebsiteMap feature enables you to map shortened URLs to other URLs in Content Server using a substitution script for the mapping. That means that you can map long URLs to abbreviated versions.

This section covers these topics:

- ❖ [Script Construction](#) (page 5-5)
- ❖ [Supported Variables for Referencing](#) (page 5-6)
- ❖ [Mapping Examples](#) (page 5-7)

### Script Construction

The shortened URLs that you can create generally use the following format:

```
http://myhostname.com/<prefix>/<suffix>
```

The actual mapping process is based on the part of the URL that follows the hostname portion. To resolve the shortened URL, Content Server compares the prefix to those in the list of defined WebsiteMap entries. If a match exists, Content Server uses the map script that corresponds to the matching prefix to display the applicable document or Content Server page. For more information about the suffix, see [The 'suffix' parameter](#) (page 5-6) in [Supported Variables for Referencing](#) (page 5-6).

To construct a URL mapping entry using the [WebUrlMaps Screen](#) (page 5-15), you need to establish a prefix and define the corresponding map.

❖ Prefix

The prefix portion of the mapping entry is any abbreviation that you want to use to identify URLs of a certain form. For example, if you want your short URL to return the dynamic conversions of documents, you can use “dc” as your prefix (e.g. the abbreviated form of dynamic converter).



**Note:** When you create your prefix, do not enter a slash (/) character at the beginning of it because Content Server removes the first slash from the incoming URL before the prefix test is performed.



**Caution:** You should include a forward slash (/) at the end of your URL map prefix. Otherwise, your mappings can apply to many more URLs and interfere with standard Content Server operations.

❖ Map

The map portion of the mapping entry is the IdocScript code that Content Server uses to resolve the shortened URL. You can use substitution tags (`<!--$variable-->`) in the map portion. Examples include `<!--$cgipath-->`, `<!--$internetuser-->`, and `<!--$suffix-->`. These substitution tags are variables that refer to the applicable parameters of a URL.

Simple ‘if’ constructions are also supported. For example, the following script segment performs a test to determine whether a value exists and is not empty:

```
<!--$if myconfigvar-->something<!--$endif-->
```

## Supported Variables for Referencing

---

The map portion of the URL mapping entry uses the following standard variables for referencing:

❖ The CGI path

This is the current CGI path of the web server filter's configured master Content Server. The web server filter is configured to provide both communication and security for this Content Server. A typical example is `/idcm1/idcplg`.

❖ The ‘suffix’ parameter

The value of the suffix variable (`<!--$suffix-->`) is derived from the part of the URL that follows the preliminary mapping ‘prefix’ and before the question mark (?). Any slashes (/) at the beginning of the suffix are removed before being substituted into this variable. For example, in the following URL, ‘dc’ is the mapping prefix followed by the suffix.

```
http://myhostname.com/dc/mydocumentname
```

After removing the slash, ‘mydocumentname’ is used as the value for the suffix variable that is used as a substitution tag in the map portion of the mapping entry. Also, the suffix variable does not include any CGI parameters. Therefore, in the following URL, ‘mydocumentname’ is still used as the suffix variable’s value.

```
http://myhostname.com/dc/mydocumentname?a=1
```



**Note:** If you want to enforce the slash separation between the prefix and suffix, add the slash at the end of your prefix abbreviation.

❖ Any plugin variable

For example, you could use the construct `<!--$internetuser-->` to substitute for the user ID of the currently logged-in user.

❖ Any CGI parameter

## Mapping Examples

---

### ***Example 1: Info Update Form***

You can define a web URL mapping script that enables you to create a shortened URL to generate the Info Update Form for existing content items. You can write the mapping script to allow users to enter any identification variable for a particular document. For example, all URLs with the following format:

```
http://myhostname.com/u/mydoc_parameter
```

can be mapped to the URL:

```
http://myhostname.com/idcm1//idcplg?IdcService=GET_UPDATE_FORM&dDocName=mydocumentname
```

To do this, define the following web URL map entry using the [WebUrlMaps Screen](#) (page 5-15):

***Prefix:***

```
u/
```

**Map:**

```
<!--$cgipath-->?IdcService=GET_UPDATE_FORM<!--$suffix-->&myparam=<!--$myparam-->
```

**Example 2: Dynamic Conversion**

You can define a web URL mapping script that enables you to create shortened URLs to various dynamic conversions of documents. For example, all URLs with the following format:

```
http://myhostname.com/dc/mydocumentname
```

can be mapped to the URL:

```
http://myhostname.com/idcm1/idcplg?IdcService=GET_DYNAMIC_CONVERSION&dDocName=mydocumentname&RevisionSelectionMethod=LatestReleased
```

To do this, define the following web URL map entry using the [WebUrlMaps Screen](#) (page 5-15):

**Prefix:**

```
dc/
```

**Map:**

```
<!--$cgipath-->?IdcService=GET_DYNAMIC_CONVERSION&dDocName=<!--$suffix-->&RevisionSelectionMethod=LatestReleased
```



**Note:** You need to have Dynamic Converter installed for this URL mapping example to work.

**Example 3: CGI parameters**

You can also directly reference CGI parameters. For example, URLs with the following format:

```
http://myhostname.com/dcp/mydocumentname?myparam=myvalue
```

can be mapped to the URL:

```
http://myhostname.com/idcm1/idcplg?IdcService=GET_DYNAMIC_CONVERSION&dDocName=mydocumentname&RevisionSelectionMethod=LatestReleased&myparam=myvalue
```

To do this, define the following web URL map entry using the [WebUrlMaps Screen](#) (page 5-15):

**Prefix:**

```
dcp/
```



*Map:*

```
<!--$cgipath-->?IdcService=GET_DYNAMIC_CONVERSION&dDocName=<!--$suffix-->
&RevisionSelectionMethod=LatestReleased&myparam=<!--$myparam-->
```

## MANAGING WEB SERVER FILTER OPTIONS

---

This section covers these topics:

- ❖ [Setting Web Filter Configuration Options](#) (page 5-9)
- ❖ [Viewing the Web Filter Log](#) (page 5-9)
- ❖ [Configuring IIS for External Security](#) (page 5-9)
- ❖ [Add/Edit URL Mapping Entries](#) (page 5-10)

### Setting Web Filter Configuration Options

---

To change web filter configuration options:

1. Display the [Configure Web Server Filter Page](#) (page 5-12).
2. Change options as required.
3. Click **Update**.

### Viewing the Web Filter Log

---

To view the web filter log:

1. Display the [Configure Web Server Filter Page](#) (page 5-12).
2. In the **View Web Filter Log** field, enter the amount of logged data to view.
3. Click the **Go** button next to the **View Web Filter Log** field.
4. To clear the web filter log, click the **Go** button next to **Clear Web Filter Log**.
5. To view the type and version number of the web filter, click the **Go** button next to **Retrieve Filter Version Info**.

### Configuring IIS for External Security

---

If you are integrating an external user base with an IIS web server, you must set up IIS as follows:

1. Open the Internet Information Services screen. On Windows 2000, select **Start—Programs—Administrative Tools—Internet Services Manager**.
2. Expand the web server that is used by the content server.
3. Expand the **Default Web Site**.
4. Right-click the content server virtual directory and select **Properties**.  
The Properties screen is displayed.
5. Click the **Directory Security** tab.
6. Under **Anonymous access and authentication control**, click **Edit**.  
The Authentication Methods screen is displayed.
7. Make sure **Anonymous access** and **Integrated Windows authentication** are selected.
8. Click **OK**.
9. Repeat steps 4 through 8 for the /idcplg virtual directory.
10. Close the Internet Information Services screen.
11. Open the Services screen. On Windows 2000, select **Start—Programs—Administrative Tools—Services**.
12. Select **IIS Admin Service**.
13. Click the Restart button to restart the IIS Admin Service. (If you stop and then start this service, make sure that you also start the World Wide Web Publishing and the Simple Mail Transfer Protocol (SMTP) services.)
14. Close the Services screen.

## Add/Edit URL Mapping Entries

---

To add or edit URL mapping entries:

1. On the Administration page, click the **Filter Administration** icon.  
The [Configure Web Server Filter Page](#) (page 5-12) is displayed.
2. In the Other Options section, click the **Edit the WebUrlMap** link.  
The [WebUrlMaps Screen](#) (page 5-15) is displayed.
3. Enter the appropriate values in the Prefix and Map fields to edit the existing mapping entries and/or define new entries.

4. Click **Update**.

The screen refreshes and the Prefix and Map field values are saved. If all of the displayed fields are populated, two additional Prefix and Map field pairs are displayed after the screen is redisplayed.



**Important:** The WebUrlMaps feature is designed to support hundreds of mapping entries. However, be aware that thousands of mapping entries will impact performance of the web server.

## WEB SERVER FILTER INTERFACE SCREENS

---

This section covers these topics:

- ❖ [Configure Web Server Filter Page](#) (page 5-12)
- ❖ [WebUrlMaps Screen](#) (page 5-15)

## Configure Web Server Filter Page

### Configure Web Server Filter

---

#### General Options

**Cache Timeout** 2

This value specifies the number of minutes the web server filter will cache user data.

**Default Authentication** Basic ▾

This value specifies the default authentication method to apply to users who have never visited the Content Server before. The two valid choices are 'NTLM' and 'Basic'. 'NTLM' will use the Microsoft Login method to login users while 'Basic' will attempt to log users into the Content Server.

**Disable GZIP Compression** FALSE ▾

By default, the content server compresses the HTML response pages for performance reasons. You may wish to disable it if CGI\_RECEIVE\_DUMP or CGI\_DEBUG is enabled.

---

#### Logging Options

**CGI\_DEBUG** ☐

Log summary of data and headers sent between the web server filter and the Content Server.

**CGI\_SEND\_DUMP** ☐

Log data and headers sent from the web server filter to the Content Server.

**CGI\_RECEIVE\_DUMP** ☐

Log data and headers sent from the Content Server to the web server filter.

**FILTER\_DEBUG** ☐

Log events inside the web server filter.

**PLUGIN\_DEBUG** ☐

Log events inside the plugin filters. This will only work for plugin filters that understand the PLUGIN\_DEBUG flag.

Update
Reset

---

#### Actions

View Web Server Filter Log Get last 1024 KB Go

Clear Web Server Filter Log Go

Retrieve Filter Version Info Go

The Configure Web Server Filter page is used to configure and troubleshoot the web server filter communication with Content Server. To access this page, click the **Filter Administration** link from the Administration tray.

Feature	Description
<b>General Options</b>	
Cache Timeout field	Sets the amount of time in minutes that the web server holds user credentials. To maintain the content server user credentials, you should select a finite time for the web server to cache user data.
Default Authentication field	The first time a user logs into the content server, a cookie is sent to the filter. If you change the default authentication from the default <i>Basic</i> to <i>NTLM</i> , the first time a user logs into the content server the user will <b>not</b> be prompted to log in again because their credentials will automatically be authenticated.
Disable GZIP Compression	For optimal performance, the content server compresses the HTML response pages. This option is useful for debugging purposes. <b>TRUE</b> = Prevents the content server from compressing HTML response pages. <b>FALSE</b> = Configures the content server to compress HTML response pages. This is the default setting.
<b>Logging Options</b>  When you select any of the logging options, a web server filter log file will be created as follows:  <b>IIS:</b> <install_dir>/<idcm1>/idcplg/idc_cgi_isapi-idcm1.dll.log <b>Apache or NES:</b> <install_dir>/data/users/authfilt.log	
CGI_DEBUG check box	Enables logging of high-level information that is passed through the web server filter. This is helpful in determining password and user authentication problems.
CGI_SEND_DUMP check box	Enables logging of all incoming data that is passed through the web server filter.
CGI_RECEIVE_DUMP check box	Enables logging of all outgoing data that is passed through the web server filter.

Feature	Description
FILTER_DEBUG check box	Enables logging of events that occur inside the web server filter.
PLUGIN_DEBUG check box	Enables logging of events that occur inside any web server plug-in filters that understand this flag.
<b>Buttons</b>	
Update button	Saves any changes to the web filter configuration settings.
Reset button	Returns the web filter configuration settings to their last saved values.
<b>Actions</b>	
View Web Server Filter Log field and Go button	This option enables you to view the log file and limit how much of the log file is displayed. (Communication between the web server and content server can generate a large amount of information.)
Clear Web Server Filter Log Go button	Clears the log file.
Retrieve Filter Version Info Go button	Displays the version of the web server filter and any plug-in version information that might be useful in detecting user authentication errors.
<b>Other Options</b>	
Edit the WebUrlMap link	If you elected to install and enable the WebURLMap function, this link appears and displays the <a href="#">WebUrlMaps Screen</a> (page 5-15).

## WebUrlMaps Screen

**WebUrlMaps**  
Filter Administration --> WebUrlMaps

Any CGI parameters are also directly referenceable. So for example, I could create an entry of the form

```

prefix: /dcp
map: <!--$cgipath-->?IdcService=GET_DYNAMIC_CONVERSION&dDocName=<!--$suffix-->
    &RevisionSelectionMethod=LatestReleased&myparam=<!--$myparam-->

```

Then URLs of the form `http://myhostname.com/dcp/mydocumentname?myparam=myvalue` would map to `http://myhostname.com/Idcplg?IdcService=GET_DYNAMIC_CONVERSION&dDocName=mydocumentname&RevisionSelectionMethod=LatestRe`.

Finally, any plugin variables (see documentation on writing Stellent web server filter plugins) are also referenceable. As an example, you could write the construct `<!--$internetuser-->` to substitute in the

< >

Prefix	Map
dc/	<!--\$cgipath-->?IdcService=GET_DYNAMIC_CONVERSION&dDocName=
/i/	<!--\$cgipath-->?IdcService=DOC_INFO_BY_NAME&dDocName=<!--\$suffix

Update Reset

Use the WebUrlMaps screen to add or edit URL mapping entries. You can access this screen by clicking the Edit the WebUrlMap link on the [Configure Web Server Filter Page](#) (page 5-12). This option is available if you chose to install and enable the WebUrlMap feature.

Feature	Description
Text pane	Provides an overview and general information about the WebUrlMaps feature.
Prefix field	The abbreviation that is used as a filter to evaluate whether a URL should be processed using a defined mapping script. See <a href="#">Prefix</a> (page 5-6).
Map field	The script used to process applicable URLs and map them to the resulting URL. See <a href="#">Map</a> (page 5-6).
Update button	Saves the changes made in the Prefix and Map fields.

Feature	Description
Reset button	Reverts the values of the Prefix and Map fields to their previously saved settings. Any values entered but not saved are removed from the fields.



# CONNECTING TO OUTSIDE ENTITIES WITH PROVIDERS

## OVERVIEW

---

This section covers these topics:

### **Concepts**

- ❖ [About Providers](#) (page 6-2)
- ❖ [Content Server Providers](#) (page 6-2)
- ❖ [Adding an Appropriate Provider](#) (page 6-3)

### **Tasks**

- ❖ [Adding an Outgoing Provider](#) (page 6-9)
- ❖ [Adding a Database Provider](#) (page 6-11)
- ❖ [Adding an Incoming Provider](#) (page 6-11)
- ❖ [Adding a Preview Provider](#) (page 6-11)
- ❖ [Editing Provider Information](#) (page 6-12)
- ❖ [Deleting a Provider](#) (page 6-12)

## **Interface**

- ❖ [Providers Page](#) (page 6-13)
- ❖ [Provider Information Page](#) (page 6-15)
- ❖ [Add/Edit Provider Page](#) (page 6-16)
- ❖ [Outgoing Provider Page](#) (page 6-17)
- ❖ [Database Provider Page](#) (page 6-20)
- ❖ [Incoming Provider Page](#) (page 6-22)
- ❖ [Preview Provider Page](#) (page 6-23)
- ❖ [Ldap Provider Page](#) (page 6-25)

# ABOUT PROVIDERS

---

A provider is an Application Programming Interface (API) that establishes connection to outside entities. These entities can be:

- ❖ other Content Server instances
- ❖ LDAP servers
- ❖ databases
- ❖ server sockets



**Note:** Currently, Oracle Consulting Services are required to use providers to connect to other databases and server sockets. Contact your sales representative for more information.

## **Content Server Providers**

---

By default, a Content Server instance has two system providers:

- ❖ **SystemDatabase:** the system database
- ❖ **SystemServerSocket:** a server socket that listens for browser requests

In addition, you can create the following types of providers:

- ❖ **Outgoing:** A connection initiated to an outside entity. You can use this type to communicate between content server instances.

- ❖ **Database:** An information repository server that provides an API for connecting and communicating with it. This retrieves information and enables information to be changed in the database. Examples of this type are system databases.
- ❖ **Incoming:** A connection initiated from an outside entity like a browser or client application. The provider listens on a specified port to be aware of incoming connections.
- ❖ **Preview:** An outgoing provider connection to Oracle Content Publisher, for use with the optional HTML Preview feature.
- ❖ **LDAP:** A connection initiated to an LDAP (Lightweight Directory Access Protocol) server for managing external user access to the content server.
- ❖ **HTTP:** A connection that allows communication between content servers using the HTTP protocol. This type of provider requires the Proxy Credentials Extension feature, which is located in the Extras/ProxyCredentialsExtension/ directory on the Content Server DVD.

## Adding an Appropriate Provider

---

The different types of providers described in the previous section are added under specific circumstances to work with various other Oracle products or utilities. The following subsections describe those conditions and the particular provider types that must be added in each scenario.

- ❖ [When to Add an Outgoing Provider](#) (page 6-3)
- ❖ [When to Add a Database Provider](#) (page 6-4)
- ❖ [When to Add an Incoming Provider](#) (page 6-5)
- ❖ [When to Add a Preview Provider](#) (page 6-6)
- ❖ [When to Add an LDAP Provider](#) (page 6-7)

## When to Add an Outgoing Provider

Outgoing providers are added as follows:

- ❖ [Oracle Enterprise Search](#) (page 6-4)
- ❖ [Archiver Utility \(Content Server\)](#) (page 6-4)

## **Oracle Enterprise Search**

Enterprise Search enables users to perform either a metadata or full-text search across multiple content server instances. These expanded search capabilities are supported through the use of system administrator-defined outgoing providers. To fully activate and enable Enterprise Search, an outgoing provider must be added and properly configured for the master content server instance and each proxied content server instance.

These outgoing providers are necessary to ensure proper communication between all content server instances and to optionally allow change notification synchronization. Specific settings on the Outgoing Provider page are enabled to make sure that the master server can search each proxied server and vice versa. Other settings determine whether or not the proxied servers will notify the master server when user or content item information changes occur.

For more detailed information about Enterprise Search and the outgoing provider requirements, see the *Oracle Enterprise Search Administration and User Guide*.

## **Archiver Utility (Content Server)**

The Archiver is a utility within the core Content Server product that enables system administrators to copy and remove content and store it for future use. Users can query a set of content from the content server instance and export it to an *archive*. Archives can then be imported to other content server instances or can be imported back to the same instance with changed metadata fields.

An outgoing provider is required to use the Archiver Transfer feature, which is used to archive content across a firewall or between two systems that do not share a file system. For additional information about the Transfer feature, the different types of transfers and the outgoing provider requirements, see the *System Migration Guide* for more information.

For more general overview and reference information about the Archiver utility and the Transfer feature, see the *Oracle Content Server Getting Started Guide*. For additional reference information about outgoing providers and each specific field, see [Outgoing Provider Page](#) (page 6-17).

## **When to Add a Database Provider**

Database providers are added as follows:

- ❖ [External Database](#) (page 6-5)

## External Database

Frequently, it is desirable or necessary to perform database queries on databases that are not the default Content Server database. In this case, customized database providers can be created that make it possible to access any data from any application, regardless of which database management system is handling the data. Using customized database providers to integrate external databases into a Content Server system, search results can be combined and viewed on a single search screen. Additionally, data can be imported from these external database sources.

For additional reference information about database providers and each specific field, see [Database Provider Page](#) (page 6-20).



**Note:** Currently, Consulting Services are required to set up a database provider to an external database source. Contact your sales representative for more information.

## When to Add an Incoming Provider

Incoming providers are added as follows:

- ❖ [Oracle WebDAV Support](#) (page 6-5)
- ❖ [Archiver Utility \(Content Server\)](#) (page 6-5)

### Oracle WebDAV Support

With version 6.2 of Content Server, you could implement WebDAV (Web-Based Distributed Authoring and Versioning) support using an incoming provider and the content server's integrated Tomcat servlet engine. In Content Server 7.0, however, WebDAV support is provided by a custom feature, so the provider and servlet engine are no longer necessary.

See the *Folders and WebDAV Administration Guide* for more information.

### Archiver Utility (Content Server)

The Archiver is a utility within the core Content Server product that enables system administrators to copy and remove content and store it for future use. Users can query a set of content from the content server instance and export, import, or replicate to another instance, or change metadata fields. Tasks most frequently performed involve transfer, backup, and reorganization of information within the system.

Generally, when data or content items are moved from one repository to another, the Archiver utility uses a push technology to relocate the files. However, occasionally your

system might require that the files be pulled rather than pushed. In this case, an incoming provider must be created. For more general information about the Archiver utility and its data transport features, see the *Oracle Content Server Getting Started Guide*. For additional reference information about incoming providers and each specific field, see [Incoming Provider Page](#) (page 6-22).



**Note:** Currently, Oracle Consulting Services are required to set up incoming providers to connect to server sockets. Contact your sales representative for more information.

## When to Add a Preview Provider

Preview providers are added as follows:

- ❖ [Oracle HTML Preview](#) (page 6-6)
- ❖ [Oracle Content Categorizer](#) (page 6-6)

### **Oracle HTML Preview**

HTML Preview is a Oracle “Extras” feature that provides users with instant feedback on how their content will display on the published web site. This enables users to modify the original content before it is actually checked in. HTML Preview also helps users ensure that correct metadata has been assigned to the content. During the installation process, a preview provider must be created. For additional overview and installation information about HTML Preview, see the *DTM Server and HTML Preview Guide*.

### **Oracle Content Categorizer**

Content Categorizer suggests metadata values for documents being checked into Content Server or for existing documents that need to have metadata reapplied. For Content Categorizer to recognize structural properties of a document, the file must be converted to XML.

If you are using Oracle Content Publisher to set up a template for the required XML conversion process, the HTML Preview feature must be configured as a preview provider. (HTML Preview is an “Extras” feature that enables users to preview their content and see what the converted output from Content Publisher will look like.)

For more general overview, reference, pre-installation tasks and considerations, and complete installation information about Content Categorizer, see the *Oracle Content Categorizer Administration Guide*. This guide provides relevant information about any additional Oracle products that may be required or are optional. For additional reference

information about preview providers and each specific field, see [Preview Provider Page](#) (page 6-23).

## When to Add an LDAP Provider

Lightweight Directory Access Protocol (LDAP) is a directory service protocol that runs over TCP/IP. It provides high-level functionality to manage resources within a network and works with Content Server to manage security and user authentication. The LDAP directory service model is based on a collection of attributes and is used to access information stored in an information directory. As such, LDAP is used to validate a set of user name and password credentials against an authentication source. This process will grant privileges to a user to give them access to web resources.

An LDAP server provides a single source for user-related information that can be accessed from applications such as Content Server and other Oracle product modules. Instead of maintaining user information within Content Server, you can integrate an LDAP directory to authenticate user credentials to the content server instance.

If you decide to use an LDAP server (other than Active Directory, which can be integrated directly with the content server), you will need to create an LDAP provider to set up communication between the content server instance and the LDAP server. When properly configured, the LDAP provider authorizes external users through the mapping properties that are linked to role assignments and account permissions (defined on the Ldap Provider page).

For a more comprehensive overview of the LDAP directory service, installation procedures, and detailed information about setting up an external security model, see the *Security Integration Guide*.

For additional reference information about LDAP providers and each specific field, see [Ldap Provider Page](#) (page 6-25).



**Note:** Although not required, you are encouraged to have Oracle Consulting Services assist you with creating an LDAP security model and deploying the LDAP integration. Contact your sales representative for more information.

LDAP integration is also useful with the following content management products and architectures:

- ❖ [Clustered Content Server](#) (page 6-8)
- ❖ [Oracle Portlets on WebSphere](#) (page 6-8)
- ❖ [Content Tracker](#) (page 6-8)

❖ [Oracle Collaboration Manager](#) (page 6-9)

## **Clustered Content Server**

The clustered Content Server can be a stand-alone system, or it can be modified and integrated in unlimited configurations to alleviate problems of maintenance, load balancing, and scalability. In a cluster configuration using a single content server, multiple servers share a common file system, database, and index collection. In a clustered Content Server configuration, integrating an LDAP directory server is optional. However, if LDAP is used, an LDAP provider must be created.

For more information about the clustered Content Server implementation, see the *Content Server Clustering Concepts Guide*.

## **Oracle Portlets on WebSphere**

WebSphere users can access Content Server through the Oracle Content Integration Suite. This portal interface enables users and developers to retrieve, view, and download Content Server content items based on full text or metadata search queries. When using the Content Integration Suite, the WebSphere Application Server is recommended. If you are using a WebSphere Portal Server, the Oracle Content Portal Suite is a recommended addition to the Content Integration Suite.

The Content Integration Suite connects directly to the content server instead of the database. This direct connection avoids the authentication step at the web server and enables the developer total control over the authentication and authorization of users. The advantage is you can authenticate users at the Content Integration Suite layer however you want. You can integrate with an LDAP server at the application server level, or you can ask the content server to validate the passwords for you.

For more information about using WebSphere with the Content Integration Suite and the Content Portal Suite, see the documentation provided with the WebSphere Portal Server, WebSphere Application Server, Oracle Content Integration Suite, and Oracle Content Portal Suite.

## **Content Tracker**

Content Tracker is a system that is built from a collection of software features that, when combined, enable users to use a standard web browser to track Oracle content usage through an integrated set of analytical tools. The data provided by the content server is derived from logged data that includes web server log data, content server data, and user information. Content Tracker accesses this data, performs analysis on it, and produces



descriptive reports. Integrating an LDAP directory server with Content Tracker is optional. However, if LDAP is used, an LDAP provider must be created.

For more information about the related data repositories, report generation, producing queries and installation procedures, see the *Oracle Content Tracker Brief Guide for System Administrators*.

### **Oracle Collaboration Manager**

Collaboration Manager is a fully functional content management system providing end-to-end content management and personalized delivery of that content. Additionally, it enables project-level security for collaborative authoring environments. Integrating an LDAP directory server with Collaboration Server is optional. However, if LDAP is used, an LDAP provider must be created.

For more information about administration features, setting security, and using Collaboration workflows, see the *Collaboration Manager Administration Guide*.

## **MANAGING PROVIDERS**

---

The following tasks are involved in managing providers.

- ❖ [Adding an Outgoing Provider](#) (page 6-9)
- ❖ [Adding a Database Provider](#) (page 6-11)
- ❖ [Adding an Incoming Provider](#) (page 6-11)
- ❖ [Adding a Preview Provider](#) (page 6-11)
- ❖ [Editing Provider Information](#) (page 6-12)
- ❖ [Deleting a Provider](#) (page 6-12)

### **Adding an Outgoing Provider**

---

To create an outgoing provider:

1. Display the [Providers Page](#) (page 6-13).
2. In the Create a New Provider table, click **Add** in the Action column for the *outgoing* provider type.

The [Outgoing Provider Page](#) (page 6-17) is displayed.

3. Complete the following fields:

**Required fields**

- Provider Name
- Provider Description
- Server Host Name
- Server Port
- Provider Class (predefined)

**Optional fields**

- Connection Class (predefined)
- Configuration Class
- Relative Web Root
- HTTP Server Address
- Instance Name
- Proxied (check box)
- Notify Target (check box)
- Users (check box)
- Released Documents (check box)
- Enterprise Searchable (check box)
- Required Roles
- Account Filter

4. Click **Add**.

The Providers page is displayed, with the new provider added to the Providers table.

5. Restart the content server.



**Note:** For Enterprise Search users, restart *all* open content servers when finished adding providers.



**Important:** To fully activate and enable Enterprise Search, an outgoing provider must be added and properly configured for the master server and each proxy server in the system. These outgoing providers allow communication between the master and proxied servers. These outgoing providers can also optionally be configured to provide inter-server notifications of user or search collection changes. For more detailed information about Enterprise Search and configuring the necessary outgoing providers, see the *Oracle Enterprise Search Administration and User Guide*.

## Adding a Database Provider

---

Currently, we strongly recommend that you use Oracle Consulting Services to connect to other databases using a provider. Contact your sales representative for more information.

## Adding an Incoming Provider

---



**Note:** Currently, Oracle Consulting Services are required to use providers to connect to server sockets. Contact your sales representative for more information.

To add an incoming provider:

1. Display the [Providers Page](#) (page 6-13).
2. In the Create a New Provider section, click **Add** in the Action column for the *incoming* provider type.

The [Incoming Provider Page](#) (page 6-22) is displayed.

3. Complete the following fields:

### Required fields

- Provider Name
- Provider Description
- Server Port
- Provider Class (predefined)

### Optional fields

- Connection Class (predefined)
- Configuration Class

4. Click **Add**.

The Providers page is displayed, with the new provider added to the Providers table.

5. Restart the content server.

## Adding a Preview Provider

---

See the *DTM Server and HTML Preview Guide* for instructions on adding the Preview provider. The HTML Preview feature zip file and guide are available for download from the Oracle support Web Site.

## Editing Provider Information

---

To edit information for an existing provider (except for default system providers):

1. Display the [Providers Page](#) (page 6-13).
2. In the Providers table, click **Info** in the Action column for the provider to edit.  
The [Provider Information Page](#) (page 6-15) is displayed.
3. Click **Edit**.  
The [Add/Edit Provider Page](#) (page 6-16) is displayed.
4. Make the required changes.
5. Click **Update** to save the changes and return to the Providers page.
6. Restart the content server.

## Deleting a Provider

---



**Important:** Ensure that you intend to *delete* the provider and not just *edit* the information. When delete a provider, the provider name and all of its related information is permanently removed from the Providers table.

To delete an existing provider (except for default system providers):

1. Display the [Providers Page](#) (page 6-13).
2. In the Providers table, click the **Info** link in the Action column for the provider you want to delete.  
The [Provider Information Page](#) (page 6-15) is displayed.
3. Click **Delete**.  
A confirmation screen is displayed.
4. Click **OK**.  
The provider is removed from the Providers table.

# PROVIDER INTERFACE SCREENS

The following screens are used when managing providers:

- ❖ [Providers Page](#) (page 6-13)
- ❖ [Provider Information Page](#) (page 6-15)
- ❖ [Add/Edit Provider Page](#) (page 6-16)
- ❖ [Outgoing Provider Page](#) (page 6-17)
- ❖ [Database Provider Page](#) (page 6-20)
- ❖ [Incoming Provider Page](#) (page 6-22)
- ❖ [Preview Provider Page](#) (page 6-23)
- ❖ [Ldap Provider Page](#) (page 6-25)

## Providers Page

Providers					
Provider	Description	Type	Connection State	Last Activity Date	Actions
SystemDatabase	System Database	database	5 out of 5 connection	2/14/05 1:23 PM	<a href="#">Info</a> <a href="#">Test</a>
SystemServerSocket	System Server Sock	incoming	good	2/14/05 1:27 PM	<a href="#">Info</a> <a href="#">Test</a>
Create a New Provider					
Provider Type	Description			Action	
outgoing	Configuring an outgoing provider.			<a href="#">Add</a>	
database	Configuring a database provider.			<a href="#">Add</a>	
incoming	Configuring an incoming provider.			<a href="#">Add</a>	
preview	Configuring a preview provider.			<a href="#">Add</a>	
ldapuser	Configuring an LDAP user provider.			<a href="#">Add</a>	

The Providers page is used to find provider information, test providers, or add providers. To access this page, do one of the following:

- ❖ Click the **Providers** link from the Administration tray.
- ❖ Click the **View Providers** link in the left navigation bar of the [Specific Instance Page](#) (page 3-13).

Feature	Description
<b>Providers table</b>	
Provider column	The name and description of the provider that establishes connection to outside entities.
Provider Type column	The type of provider.
Connection State column	Possible states are: <ul style="list-style-type: none"> <li>• misconfigured</li> <li>• good</li> <li>• down</li> <li>• requires restart</li> </ul>
Last Activity Date column	The last date and time that the provider was active.
Action column	<p>The <b>Info</b> link displays the <a href="#">Provider Information Page</a> (page 6-15) for the provider.</p> <p>The <b>Test</b> link refreshes the Connection State and Last Activity Date columns for the provider.</p>
<b>Create a New Provider table</b>	
Provider Type column	The type of provider.
Description column	A description of the provider type.
Action column	Clicking an <b>Add</b> button displays the <a href="#">Add/Edit Provider Page</a> (page 6-16) for that type of provider.

## Provider Information Page

Outgoing Provider Information for Proxied_2_on_katetest	
<b>Provider Name:</b>	Proxied_2_on_katetest
<b>Provider Description:</b>	Connection to proxied server 'Proxied_2_on_katetest'.
<b>Connection State:</b>	good
<b>Last Activity Date:</b>	5/6/02 2:08 PM
<b>Provider Type:</b>	outgoing
<b>Provider Class:</b>	intradoc.provider.SocketOutgoingProvider
<b>Provider Connection:</b>	
<b>Instance Name:</b>	Proxied_2_on_katetest
<b>Server Options:</b>	Proxied Server
<b>Server Host Name:</b>	localhost
<b>HTTP Server Address:</b>	
<b>Server Port:</b>	4445
<b>Relative Web Root:</b>	/stellent_2/
<b>Notified Subjects</b>	
<b>Last Request Date:</b>	
<input type="button" value="Edit"/> <input type="button" value="Disable"/> <input type="button" value="Delete"/>	

The Provider Information page is used to review and edit provider information. To access this page, click the **Info** link that corresponds to the provider on the [Providers Page](#) (page 6-13).



**Note:** You can only disable or edit providers that you have created. You cannot edit or disable the default providers installed with the system.

Feature	Description
Information fields	Display information about the provider. See <a href="#">Add/Edit Provider Page</a> (page 6-16) for a description of each field.
Edit button	Displays the <a href="#">Add/Edit Provider Page</a> (page 6-16) for the provider. This button is not displayed for the default <i>SystemDatabase</i> and <i>SystemServerSocket</i> providers.
Disable/Enable button	Disables and enables the provider. The content server must be restarted after a provider is disabled or enabled.  This button is not displayed for the default <i>SystemDatabase</i> and <i>SystemServerSocket</i> providers.
Delete button	Deletes the provider. This button is not displayed for the default <i>SystemDatabase</i> and <i>SystemServerSocket</i> providers.

## Add/Edit Provider Page

The Add/Edit Provider page is used to create or edit a provider.

- ❖ To access the Add Provider page, click the **Add** link next to the type of provider you want to create on the [Providers Page](#) (page 6-13).
- ❖ To access the Edit Provider page, click **Edit** on the [Provider Information Page](#) (page 6-15).

The fields on the Add/Edit Provider page depend on the type of provider being created or edited:

- ❖ [Outgoing Provider Page](#) (page 6-17)
- ❖ [Database Provider Page](#) (page 6-20)
- ❖ [Incoming Provider Page](#) (page 6-22)
- ❖ [Preview Provider Page](#) (page 6-23)
- ❖ [Ldap Provider Page](#) (page 6-25)



## Outgoing Provider Page

Add Outgoing Provider

Provider Name

Provider Description

Provider Class

Connection Class

Configuration Class

Server Host Name

HTTP Server Address

Server Port

Instance Name

Relative Web Root

Server Options:

☐ **Proxied**  
Web access and security of a remote server is controlled by this server. Only enable this option if you are the master server in a master and proxied server relationship. Do **not** enable this option if you only wish to transfer archives.

☐ **Notify Target**  
Use this option if you are the proxied server in a master and proxied server relationship. The *Users* subject gives the master server's web server access to the security configuration of this server and guarantees that its copy is kept up to date. It should be checked if you wish static content on the proxied server to be directly available through the master server's web server. The *Released Documents* subject should be checked if you wish to perform an enterprise search from the master server which includes this proxied server.

☐ Users
☐ Released Documents

Search Options:

☐ **Enterprise Searchable**

Required Roles:

Account Filter:

Conversion Options

☐ **Handles Inbound Refinery Conversion Jobs**  
Use this option *only* if this provider is an Inbound Refinery.

☐ **Inbound Refinery Read Only Mode**  
Use this option to prevent this Content Server from send new conversion jobs to this Inbound Refinery. Note that this Inbound Refinery will continue to return conversion jobs as the jobs are finished.

Enter the number of jobs allowed in the pre-converted queue.

Add
Reset

The Add/Edit Outgoing Provider page is used to create or edit an outgoing provider. To access this page, click the **Add** link next to the type of provider to add on the [Providers Page](#) (page 6-13) or click the **Edit** link on the [Provider Information Page](#) (page 6-15).

Feature	Description
Provider Name field	The name of the provider, which will become a subdirectory in the <install_dir>/data/providers/ directory.
Provider Description field	User-friendly description of the provider.
Provider Class field	The name of the Java class for the provider. For example, <i>intradoc.provider.SocketOutgoingProvider</i> .
Connection Class field	The name of the Java class that implements the provider connection. For example, <i>intradoc.provider.SocketOutgoingConnection</i> .
Configuration Class field	The name of a Java class that performs some extra configuration. This class is very useful for database providers, where the connection classes are already providers.
Server Host Name field	The server host name (IDC_Name) of the other content server instance.
HTTP Server Address field	The HTTP address of the other content server instance. For example, <i>intradoc:90</i> .
Server Port field	The port on which the provider communicates with the other content server.
Instance Name field	The instance name of the other content server instance.
Relative Web Root field	The relative web root of the other content server instance. For example, <i>/oracle_2/</i> .

Feature	Description
Proxied check box	Enable this option if the provider is connecting to a content server that will be controlled by the current instance.
Notify Target check box	Enable this option if the provider is connecting to a content server that is acting as a controlling instance, and you want this content server to notify the controlling instance when user information and/or content item information changes.
Users check box	Enable this option if you want this content server to notify the controlling instance when user information changes.
Released Documents check box	Enable this option if you want this content server to notify the controlling instance when content item information changes.
Enterprise Searchable check box	Enable this option if you have enabled Enterprise Search and you want this content server instance to be searchable. See the <i>Oracle Enterprise Search Administration and User Guide</i> for more information.
Required Roles field	Enter roles that have permission to search this content server instance using Enterprise Search. If no roles are entered, all users will have permission.
Account Filter field	Enter accounts that have permission to search this content server instance using Enterprise Search. If no accounts are entered, all users will have permission.
Add/Update button	Saves the provider information.
Reset button	Resets the provider information to the last saved values.

## Database Provider Page

### Add Database Provider

---

Provider Name

Provider Description

---

Provider Class

Connection Class

Configuration Class

---

Test Query

---

Database Type ☒ JDBC

Database Directory

Database Name

JDBC Driver

JDBC Connection String

JDBC User

JDBC Password

Number of Connections

---

The Add/Edit Database Provider page is used to create or edit a database provider. To access this page, see [Add/Edit Provider Page](#) (page 6-16).

Feature	Description
Provider Name field	The name of the provider, which will become a subdirectory in the <code>&lt;install_dir&gt;/data/providers/</code> directory.
Provider Description field	User-friendly description of the provider.
Provider Class field	The name of the Java class for the provider. For example, <code>intradoc.jdbc.JdbcWorkspace</code> .
Connection Class field	The name of the Java class that implements the provider connection. For example, <code>intradoc.jdbc.JdbcConnection</code> .

Feature	Description
Configuration Class field	The name of a Java class that performs some extra configuration. This class is very useful for database providers, where the connection classes are already providers.
Test Query field	Enter a query that will be used to test the provider when the Test link on the Providers page is clicked.
Database Type check box	<b>Selected</b> = The database is JDBC. <b>Cleared</b> = The database is DAO.
Database Directory field	The directory that contains the content server database information. For example, <install_dir>/database. Used only by DAO databases.
Database Name field	Used only by DAO databases.
JDBC Driver field	This field is automatically filled.
JDBC Connection String field	This field is automatically filled. It should take the format <i>JDBC:ODBC:name</i> , where name is the System Data Source Name that is displayed on the System DSN tab.
JDBC User field	This is your JdbcUser.
JDBC Password field	This is your JdbcPassword.
Number of Connections field	The number of database connections the provider maintains. This is used only by JDBC databases.
Add/Update button	Saves the provider information.
Reset button	Resets the provider information to the last saved values.

## Incoming Provider Page

The screenshot shows a web form titled "Add Incoming Provider". It contains the following fields and values:

- Provider Name:** An empty text input field.
- Provider Description:** An empty text input field.
- Provider Class:** A text input field containing the value `intradoc.provider.SocketIncomingProvider`.
- Connection Class:** A text input field containing the value `intradoc.provider.SocketIncomingConnection`.
- Configuration Class:** An empty text input field.
- Server Port:** An empty text input field.

At the bottom of the form are two buttons: "Add" and "Reset".

The Add/Edit Incoming Provider page is used to create or edit an incoming provider. To access this page, see [Add/Edit Provider Page](#) (page 6-16).

Feature	Description
Provider Name field	The name of the provider, which will become a subdirectory in the <code>&lt;install_dir&gt;/data/providers/</code> directory.
Provider Description field	User-friendly description of the provider.
Provider Class field	The name of the Java class for the provider. For example, <i>intradoc.provider.SocketIncomingProvider</i> .
Connection Class field	The name of the Java class that implements the provider connection. For example, <i>intradoc.provider.SocketIncomingConnection</i> .
Configuration Class field	The name of a Java class that performs some extra configuration. This class is very useful for database providers, where the connection classes are already providers.

Feature	Description
Server Port field	The port the provider listens on for incoming connections. For example, the incoming system provider listens on port 4444 by default.
Add/Update button	Saves the provider information.
Reset button	Resets the provider information to the last saved values.

## Preview Provider Page

**Add Preview Provider**

---

Provider Name

Provider Description

---

Provider Class

Connection Class

Configuration Class

---

Server Host Name

HTTP Server Address

Server Port

---

The Add/Edit Preview Provider page is used to create or edit a preview provider. To access this page, see [Add/Edit Provider Page](#) (page 6-16).

Feature	Description
Provider Name field	The name of the provider, which will become a subdirectory in the <i>&lt;install_dir&gt;/data/providers/</i> directory.
Provider Description field	User-friendly description of the provider.
Provider Class field	The name of the Java class for the provider. For example, <i>intradoc.provider.SocketOutgoingProvider</i> .
Connection Class field	The name of the Java class that implements the provider connection. For example, <i>intradoc.provider.SocketOutgoingConnection</i> .
Configuration Class field	The name of a Java class that performs some extra configuration. This class is very useful for database providers, where the connection classes are already providers.
Server Host Name field	The server host name of the other content server instance. For example, <i>localhost</i> .
HTTP Server Address field	The HTTP address of the other content server instance. Use the value listed for <b>HTTP Server</b> on the Configuration Information page. For example, <i>intradoc:90</i> .
Server Port field	The port on which the provider communicates with Oracle Content Publisher. Typically, this is 4441.
Add/Update button	Saves the provider information.
Reset button	Resets the provider information to the last saved values.



## Ldap Provider Page

Add LDAP Provider	
Provider Name	<input type="text"/>
Provider Description	<input type="text"/>
Provider Class	<input type="text" value="intradoc.provider.LdapUserProvider"/>
Connection Class	<input type="text" value="intradoc.provider.LdapConnection"/>
Configuration Class	<input type="text"/>
Source Path	<input type="text"/>
LDAP Server	<input type="text"/>
LDAP Suffix	<input type="text"/>
LDAP Port	<input type="text" value="389"/>
Number of connections	<input type="text" value="5"/>
Priority	<input type="text" value="1"/>
Use Netscape SDK	<input checked="" type="checkbox"/>
Use SSL	<input type="checkbox"/>
Use Group Filtering	<input type="checkbox"/>
Use Full Group Names	<input type="checkbox"/>
Account Permissions Delimiter	<input type="text" value="_"/>
Default Network Accounts	<input type="text" value="#none"/>
Role Prefix	<input type="text" value="OU=Roles,OU=Stellent"/>
Depth	<input type="text" value="1"/>
<input type="button" value="Add"/>	
<input type="button" value="Up"/> <input type="button" value="Down"/>	
Account Prefix	<input type="text" value="OU=Accounts,OU=Stellent"/>
Depth	<input type="text" value="1"/>
<input type="button" value="Add"/>	
<input type="button" value="Up"/> <input type="button" value="Down"/>	
Attribute Map	
LDAP Attribute	<input type="text"/>
Maps To	<input type="text" value="dFullName"/>
User Attribute	<input type="text"/>
<input type="button" value="Add"/>	
<input type="button" value="Up"/> <input type="button" value="Down"/>	
LDAP Admin DN	<input type="text"/>
LDAP Admin Password	<input type="text"/>
<input type="button" value="Add"/> <input type="button" value="Reset"/>	

The Add/Edit Ldap Provider page is used to create or edit an LDAP provider. To access this page, see [Add/Edit Provider Page](#) (page 6-16). For a detailed description of the Add/Edit Ldap Provider page, see *Managing Security and User Access*.



# BATCHLOADING CONTENT

## OVERVIEW

---

This section covers these topics:

- ❖ [About Batch Loading](#) (page 7-1)
- ❖ [Preparing a Batch Load File](#) (page 7-20)
- ❖ [Running the Batch Loader](#) (page 7-35)
- ❖ [Optimizing Batch Loader Performance](#) (page 7-46)

## ABOUT BATCH LOADING

---

This section describes how to use the Batch Loader utility to check in (insert), delete, and/or update a large number of files on your content server system at one time. The Batch Loader can save you time and effort by automating the batch loading process. The following are examples of when to use the Batch Loader:

- ❖ You just purchased the Content Server software, and you want check in all of your existing files with metadata that exists in a database.
- ❖ You have documents checked into the content server repository, and you just created a new custom metadata field. You can use the Batch Loader to add the values you specify for the new metadata field to each existing content item.
- ❖ You want to remove a large number of specific files from the system.

- ❖ You want to load an external collection of content into the content server. (This requires the Lightly Managed Content feature to be installed and enabled. See the *Lightly Managed Content Component* documentation for further information.)

The Batch Loader performs actions that are specified in a *batch load file*, which is a text file that describes the action to perform and the metadata for each content item in the batch.

A *batch load file* is a text file that tells the Batch Loader which actions to perform and what metadata to assign to each content item in the batch.

This section covers these topics:

- ❖ [File Records](#) (page 7-2)
- ❖ [Actions](#) (page 7-3)
- ❖ [Insert](#) (page 7-3)
- ❖ [Delete](#) (page 7-7)
- ❖ [Update](#) (page 7-8)
- ❖ [Optional Parameters](#) (page 7-14)
- ❖ [Custom Metadata Fields](#) (page 7-19)

## File Records

---

A batch load file is made up of *file records*, which are sets of name/value pairs that specify the action to perform and/or the metadata for individual content items.



**Important:** Field names and parameters are case sensitive. They must appear in the batch load file exactly as they appear in the following sections. For example, *dDocName* is not the same as *ddocname*, *dDocname*, or *DDOCNAME*.

- ❖ Each file record ends with an <<EOD>> (end of data) marker.
- ❖ A pound sign (#) followed by a space at the beginning of a line indicates a comment.



**Note:** The comment character (#) must be followed by a space. For example:  
# primaryFile=test.txt works properly, but #primaryFile=test.txt will cause errors.

- ❖ The following is an example of a file record:  
# This is a comment  
Action=insert  
dDocName=Sample1

```

dDocType=ADACCT
dDocTitle=Batch Load record insert example
dDocAuthor=sysadmin
dSecurityGroup=Public
primaryFile=links.doc
dInDate=8/15/2001
<<EOD>>

```

## Actions

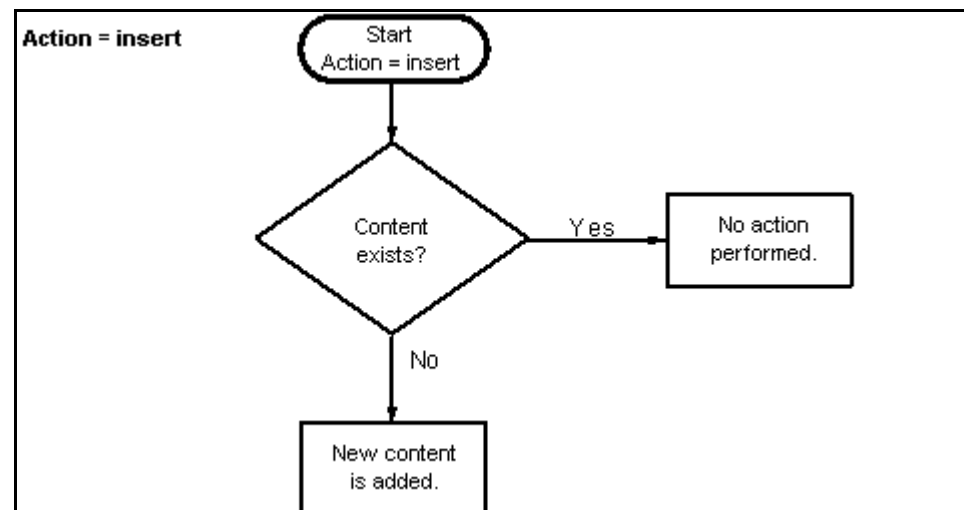
Valid actions for batch loading are [Insert](#) (page 7-3), [Delete](#) (page 7-7), and [Update](#) (page 7-8).

- ❖ If no action is specified for a file, the system tries to perform an update.
- ❖ Each file record can have only one action, but file records with different actions can be present in the same batch load file.
- ❖ The logic process for each action is different.

## Insert

The *insert* action checks a new file into the content server repository. If the Content ID (*dDocName*) already exists in the content server, no action is performed. Figure 7-1 illustrates the *insert* action.

**Figure 7-1** The Insert Action Sequence for Checking In a New File



## Insert Requirements

The following table defines the fields required for successful performance of an insert action.


- ❖ **Field Length:** Maximum number of characters permitted in the field.
- ❖ **Carried Over:** If the next record does not contain this field, the value of this field will be taken from the previous record.



**Important:** If you have defined any custom metadata fields as required fields, those fields also need to be defined for an insert action.



**Note:** Batch loaded revisions will not enter a workflow, even if they meet the criteria for an active workflow.

Required Items	Field Length	Carried Over	Definition
Action=insert	N/A	Yes	The command to insert a file.  <b>Important:</b> The term 'Action' is case sensitive and must be initial capitalized.
dDocName	30	No	The metadata field named Content ID.
dDocType	30	Yes	The metadata field named Type.
dDocTitle	80	No	The metadata field named Title.
dDocAuthor	30	Yes	The metadata field named Author.
dSecurityGroup	30	Yes	The metadata field named Security Group.

Required Items	Field Length	Carried Over	Definition
primaryFile	N/A	N/A	<p>The metadata field named Primary File. The Primary File name can be a complete path or just the file name. If a file name only is specified, the location of the file is determined as follows:</p> <ul style="list-style-type: none"> <li>If the <i>SetFileDir</i> optional parameter has been set in this file record or any previous file record, the directory specified in <i>SetFileDir</i> will be used.</li> <li>If the <i>SetFileDir</i> parameter has not been set, the batch load file path is used. (The path is specified in the Batch Load File field on the <a href="#">Batch Loader Application</a> (page 7-34).)</li> </ul>
dInDate	N/A	No	<p>The metadata field named Release Date.</p> <ul style="list-style-type: none"> <li>The <i>dInDate</i> must use the date format of the locale of the user executing the Batch Loader. For example, the US English date format is mm/dd/yy hh:mm:ss am/pm.</li> <li>Time information is optional. If you specify the time, only the “hh:mm” part is required. The “ss” and “am/pm” parts are optional.</li> </ul>
<<EOD>>	N/A	N/A	Indicates the end of data for the file record.

## Insert Example

Figure 7-2 shows the batch load file syntax for inserting files. This example shows two file records.

The first file record includes all required fields and the action statement, *Action=insert*. The second file record does not list the required fields *dDocType*, *dDocAuthor*, or *dSecurityGroup*. However, the information for these items is taken from the previous record. Also, the second record does not specify an action, so the *insert* action is carried

over. Therefore, if the Content ID *HR003* does not exist, the file will be inserted. However, if the Content ID does exist, it will not be inserted because the action is *insert* and not *update*.

**Figure 7-2** The Batch Load File Syntax for Inserting Files

```
Action=insert
dDocName=HR001
dDocType=Form
dDocTitle=New Employee Information Form
dDocAuthor=Olson
dSecurityGroup=Public
primaryFile=hr001.doc
dIndate=3/15/97
<<EOD>>
dDocName=HR003
dDocTitle=Performance Review
primaryFile=hr003.doc
dIndate=3/15/97
<<EOD>>
```

first record

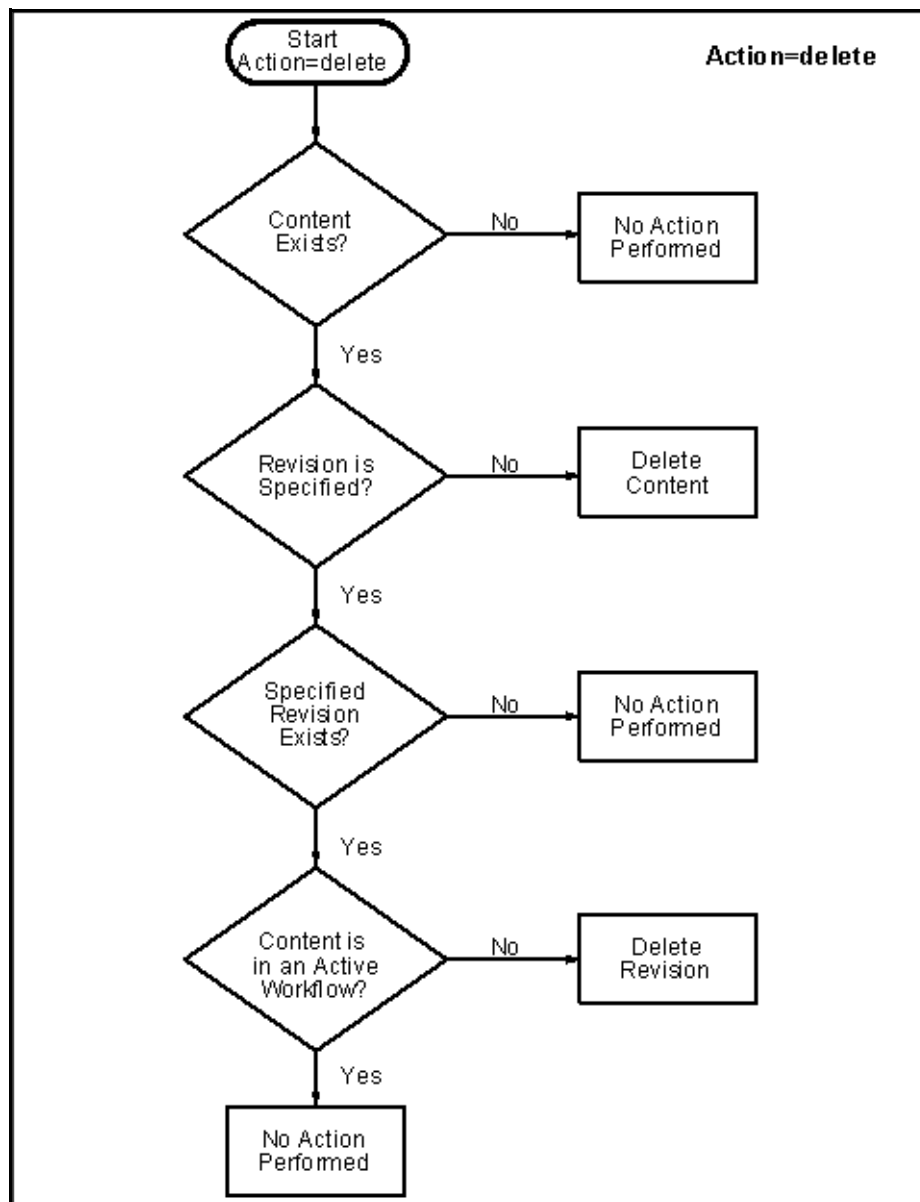
second record



## Delete


The *delete* action deletes one or all revisions of an existing file from the content server repository. If the specified Content ID (dDocName) does not exist in the content server, no action is performed. Figure 7-3 illustrates the *delete* action.

**Figure 7-3** The Delete Action Sequence



## Delete Requirements

The following table defines the fields required for successful performance of a delete action.

Required Items	Definition
Action=delete	The command to delete a file.  <b>Important:</b> The term 'Action' is case sensitive and must be initial capitalized.
dDocName	The metadata field named Content ID.
<<EOD>>	Indicates the end of data for the file record.

## Delete Example

Figure 7-4 shows the batch load file syntax for deleting files. This example shows two file records.

The first file record will delete all revisions of the Content ID *HR001*. The second file record will delete revision 2 of the content item *HR002*.

**Figure 7-4** The Batch Load File Syntax for Deleting Files

```

Action=delete
dDocName=HR001
<<EOD>>
Action=delete
dDocName=HR002
dRevLabel=2
<<EOD>>

```

## Update

The *update* action updates existing content items. One of the following occurs, depending on what items are present in the file record and what content exists in the system:

- ❖ A new revision of an existing content item is created.
- ❖ An existing file's metadata is updated.

- ❖ A new content item is inserted (*Action=insert* is performed).

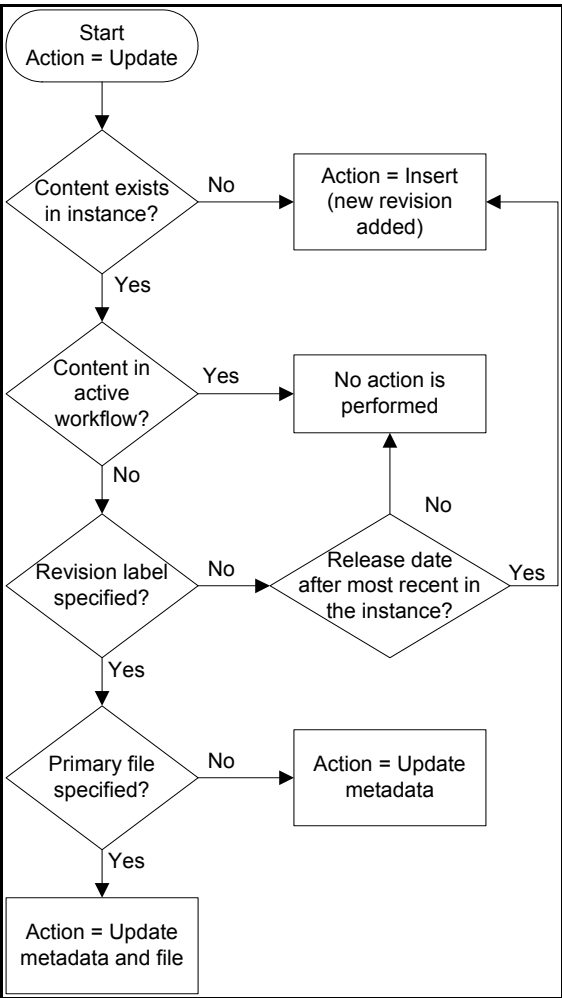


**Note:** Batch loaded revisions will not enter a workflow, even if they meet the criteria for an active workflow.

A new revision is created when one of the following scenarios occur:


	<b>Content ID (dDocName)</b>	<b>Revision (dRevLabel)</b>	<b>Release Date in Batch Load file (dInDate)</b>
<b>Scenario 1</b>	Exists in content server	Not specified in the batch load file.	After the release date of the latest revision of the file in the system.
<b>Scenario 2</b>	Exists in content server	Specified in the batch load file, but does not exist in the content server.	After the release date of the latest revision of the file in the system.

Figure 7-5 The Update Action Sequence



## Update Requirements

The following table defines the fields required for successful performance of an update action.

Required Items	Field Length	Carried Over	Definition
Action=update	N/A	Yes	The command to update a file.  <b>Important:</b> The term ‘Action’ is case sensitive and must be initial capitalized.

Required Items	Field Length	Carried Over	Definition
dDocName	30	No	The metadata field named Content ID.
dDocType	30	Yes	The metadata field named Type.
dDocTitle	80	No	The metadata field named Title.
dDocAuthor	30	Yes	The metadata field named Author.
dSecurityGroup	30	Yes	The metadata field named Security Group.
primaryFile	N/A	N/A	<p>The metadata field named Primary File.</p> <ul style="list-style-type: none"> <li>If only the metadata is being updated, the <i>primaryFile</i> field is not required but <i>dRevLabel</i> is required.</li> <li>If the optional <i>dRevLabel</i> field is specified and matches a revision label that exists in the content server, the <i>primaryFile</i> field is not required; the primary file specified for that revision is used.</li> </ul> <p>It is important to note that although <i>dRevLabel</i> is not a required field, if the <i>primaryFile</i> is not present, then <i>dRevLabel</i> becomes a required field.</p> <ul style="list-style-type: none"> <li>The Primary File name can be a complete path or just the file name. If a file name only is specified, the location of the file is determined as follows: <ul style="list-style-type: none"> <li>If the <i>SetFileDir</i> optional parameter has been set in this file record or any previous file record, the directory specified in <i>SetFileDir</i> will be used.</li> <li>If the <i>SetFileDir</i> parameter has not been set, the batch load file path is used. (The path is specified in the Batch Load File field on the <a href="#">Batch Loader Application</a> (page 7-34).)</li> </ul> </li> </ul>

Required Items	Field Length	Carried Over	Definition
dInDate	N/A	No	<p>The metadata field named Release Date.</p> <ul style="list-style-type: none"> <li>The <i>dInDate</i> must use the date format of the locale of the user executing the Batch Loader. For example, the US English date format is mm/dd/yy hh:mm:ss am/pm.</li> <li>Time information is optional. If you specify the time, only the “hh:mm” part is required. The “ss” and “am/pm” parts are optional.</li> </ul>
<<EOD>>	N/A	N/A	Indicates the end of data for the file record.

## Update Example 1

This example assumes that two files are already checked into the system with the following metadata:

- ❖ HR001 has a Release Date of 9/26/98 and Revision of 1
- ❖ HR002 has a Release Date of 3/15/99 and Revision of 2

The first file record, Content ID *HR001*, exists in the system, but it does not have a Revision (*dRevLabel*) specified in the batch load file. Therefore, the Batch Loader will compare the Release Date of the latest revision in the system with the Release Date specified in the batch load file. Since 2/20/99 is after 9/26/98, a new revision 2 for *HR001* is added.

The second file record, Content ID *HR002*, exists in the system and has a Revision (*dRevLabel*) specified, but Revision 3 does not exist in the system. Therefore, a new revision 3 for *HR002* is added.

**Figure 7-6** Update Sequence Example 1

```
Action=update
dDocName=HR001
dDocType=Form
dDocTitle=New Employee Form
dDocAuthor=Olson
dSecurityGroup=Public
primaryFile=hr001.doc
dInDate=2/20/99
<<EOD>>
dDocName=HR002
dDocTitle=Payroll Change Form
primaryFile=hr002.doc
dInDate=2/20/99
dRevLabel=3
<<EOD>>
```

## Update Example 2

This example assumes that one file is already checked into the system with the following metadata:

- ❖ Content ID = HR003
- ❖ Release Date = 3/15/97
- ❖ Revision = 1
- ❖ Title = Performance Review
- ❖ Author = Smith

Because Revision 1 of the Content ID *HR003* exists in the system (and is not in an active workflow), the revision will be updated with the new Title, Author, and Release Date metadata.

**Figure 7-7** Update Sequence Example 2

```

Action=update
dDocName=HR003
dDocType=Form
dDocTitle=Performance Review
Template
dDocAuthor=Smith
primaryFile=hr003.doc
dIndate=2/20/99
dRevLabel=1
<<EOD>>


```

## Optional Parameters

The following table lists the optional parameters you can use in any file record in a batch load file.

Optional Parameters	Definition
dRevLabel	<p>The metadata field named Revision.</p> <p>Maximum field length is 10 characters.</p> <p>Values must be an integer or comply with the Major/Minor Revision Label Sequence established by the System Properties settings (see <a href="#">Configuring General Options</a> (page 2-4)).</p>
dDocAccount	<p>The metadata field named Accounts.</p> <p>Maximum field length is 30 characters.</p> <p>This field is not carried over to the next file record.</p> <p>Do not specify this field if accounts are not enabled.</p> <p>If accounts are enabled and this field is not specified, <i>dDocAccount</i> will be set to an empty value.</p>
xComments	<p>The metadata field named Comments. Maximum field length is 255 characters.</p>



Optional Parameters	Definition
dOutDate	<p>The metadata field named Expiration Date.</p> <p>The <i>dOutDate</i> must use the date format of the locale of the user executing the Batch Loader. For example, the English-US date format is <i>mm/dd/yy hh:mm:ss am/pm</i>.</p> <p>Time information is optional. If you specify the time, only the “hh:mm” part is required. The “ss” and “am/pm” parts are optional.</p>
<div data-bbox="386 737 472 814"></div> <p><b>Note:</b> In a batchload file, there are two methods you can use to override the primary and alternate formats assigned to a content item checkin:</p> <ul style="list-style-type: none"> <li>❖ Specifying a value for the primaryFile:format parameter and/or specifying a value for the alternateFile:format parameter. However, it is possible to override these values by using the primaryOverrideFormat or alternateOverrideFormat parameters. It is also possible that certain components will force specific formats on certain types of checkins or certain application functionality may exist in some components that forces a different format. See <a href="#">primaryFile:format</a> (page 7-16) and <a href="#">alternateFile:format</a> (page 7-17).</li> <li>❖ Specifying a value for the primaryOverrideFormat parameter and/or specifying a value for the alternateOverrideFormat parameter. However, these will only work as parameters in the batch load file if you enable the IsOverrideFormat configuration variable. Note that using this method will override any values that you set for the primaryFile:format and alternateFile:format parameters. See <a href="#">primaryOverride Format</a> (page 7-18) and <a href="#">alternateOverride Format</a> (page 7-18).</li> </ul>	
primaryFile:path	<p>Specifies the location of the file. If a primaryFile:path value is specified, the value overrides the value specified for the primaryFile parameter. However, the primaryFile:path value is not used to determine the file conversion format. If a value for primaryFile:path is not specified, the location is determined from the primaryFile value.</p> <p>This parameter uses the following syntax:</p> <p>primaryFile:path=&lt;complete_path&gt;</p>

Optional Parameters	Definition
primaryFile:format	<p>Specifies the file format to use for the Primary File. This file format overrides the one specified by the file extension of the file and the value specified for the primaryFile parameter. If a primaryFile:format value is not specified, the file format is determined from the file extension for the primaryFile value.</p> <p>This parameter uses the following syntax:</p> <p>primaryFile:format=&lt;application&gt;/&lt;conversion_type&gt;</p>
alternateFile	<p>The metadata field named Alternate File. The Alternate File name can be a complete path or just the file name. If a file name only is specified, the location of the file is determined as follows:</p> <p>If the <i>SetFileDir</i> optional parameter has been set in this file record or any previous file record, the directory specified in <i>SetFileDir</i> will be used.</p> <p>If the <i>SetFileDir</i> parameter has not been set, the batch load file path is used. (The path is specified in the Batch Load File field on the <a href="#">Batch Loader Application</a> (page 7-34).)</p>
alternateFile:path	<p>Specifies the location of the alternate file. If an alternateFile:path value is specified, the value overrides the value specified for the alternateFile parameter. However, the alternateFile:path value is not used to determine the file conversion format. If an alternateFile:path value is not specified, the location is determined from the alternateFile parameter, if a value is specified. Otherwise, by default, the primaryFile value is used for the computation.</p> <p>This parameter uses the following syntax:</p> <p>alternateFile:path=&lt;complete_path&gt;</p>

Optional Parameters	Definition
alternateFile:format	<p>Specifies the file format to use for the Alternate File. This file format overrides the one specified by the file extension of the file and the value specified for the alternateFile parameter. If an alternateFile:format value is not specified, the file format is determined from the file extension for the alternateFile parameter, if a value is specified. Otherwise, by default, the primaryFile value is used for the computation.</p> <p>This parameter uses the following syntax:  alternateFile:format=&lt;application&gt;/&lt;conversion_type&gt;</p>
webViewableFile	<p>The webViewableFile name can be a complete path or just the file name. If a webViewableFile value is specified, then the conversion process is not performed. If a file name only is specified, the location of the file is determined as follows:</p> <p>If the <i>SetFileDir</i> optional parameter has been set in this file record or any previous file record, the directory specified in <i>SetFileDir</i> will be used.</p> <p>If the <i>SetFileDir</i> parameter has not been set, the batch load file path is used. (The path is specified in the Batch Load File field on the <a href="#">Batch Loader Application</a> (page 7-34).)</p>
webViewableFile:path	<p>Specifies the location of the web viewable file. If a webViewableFile.path value is specified, the value overrides the value specified for the webViewableFile parameter. However, the webViewableFile:path value is not used to determine the file conversion format. If a webViewableFile:path value is not specified, the location is determined from the webViewableFile parameter, if a value is specified. Otherwise, by default, the primaryFile value is used for the computation.</p> <p>This parameter uses the following syntax:  webViewableFile:path=&lt;complete_path&gt;</p>

Optional Parameters	Definition
webViewableFile: format	<p>Specifies the file format to use for the web viewable file. This file format overrides the one specified by the file extension of the file and the value specified for the webViewableFile parameter. If a webViewableFile:format value is not specified, the file format is determined from the file extension for the webViewableFile parameter, if a value is specified. Otherwise, by default, the primaryFile value is used for the computation.</p> <p>This parameter uses the following syntax:</p> <p>alternateFile:format=&lt;application&gt;/&lt;conversion_type&gt;</p>
primaryOverride Format	<p>Specifies which file format to use for the Primary File. This file format overrides the one specified by the file extension of the file. This option will only work as a parameter if you enable the IsOverrideFormat configuration variable. You can set this variable by selecting the <a href="#">Allow override format on check in check box</a> (page 2-7) in the System Properties application. However, a better (and recommended) alternative would be to use the <a href="#">primaryFile:format</a> (page 7-16) parameter.</p>
alternateOverride Format	<p>Specifies which file format to use for the Alternate File. This file format overrides the one specified by the file extension of the file. This option will only work as a parameter if you enable the IsOverrideFormat configuration variable. You can set this variable by selecting the <a href="#">Allow override format on check in check box</a> (page 2-7) in the System Properties application. However, a better (and recommended) alternative would be to use the <a href="#">alternateFile:format</a> (page 7-17) parameter.</p>
SetFileDir	<p>Specifies the directory where the Primary Files and Alternate Files are located. This field is carried over to the next file record.</p>

## Custom Metadata Fields

---

Any custom metadata field that has been defined in the Configuration Manager can be included in a file record.

- ❖ If you have defined any custom metadata fields as required fields, those fields must be defined for an insert action or an update action.
- ❖ If a custom metadata field is not a required field, but it has a default value (even if blank), then the default value will be used if the value is not specified in the batch load file.
- ❖ When specifying a custom metadata field value, the field name preceded with an **x**. For example, if you have a custom metadata field called **Location**, then the batch load file entry will be **xLocation=value**.
- ❖ Keep in mind that some add-on products use custom metadata fields. For example, if you have PDF Watermark, you will have created a field called *Watermark*. To include this field in a batch load file, precede it with an **x** just like any other custom metadata field (that is, *xWatermark*).

## PREPARING A BATCH LOAD FILE

---

This section covers these topics:

### Concepts

- ❖ [About Preparing a Batch Load File](#) (page 7-20)
- ❖ [Mapping Files](#) (page 7-21)

### Tasks

- ❖ [Creating a Batch Load File from the BatchBuilder Screen](#) (page 7-24)
- ❖ [Creating a Mapping File](#) (page 7-25)
- ❖ [Creating a Batch Load File from the Command Line](#) (page 7-26)

### Interface

- ❖ [BatchBuilder Screen](#) (page 7-28)
- ❖ [BatchBuilder Mapping List Screen](#) (page 7-30)

- ❖ [Add BatchBuilder Mapping Screen](#) (page 7-31)
- ❖ [Edit BatchBuilder Mapping Screen](#) (page 7-32)
- ❖ [Add/Edit BatchBuilder Mapping Field Screen](#) (page 7-33)

## About Preparing a Batch Load File

---

You can use any method you prefer to create a batch load file, as long as the resulting text file conforms to the batch load file syntax requirements. However, the Batch Loader provides a tool called the *BatchBuilder* to assist you in creating batch load files.

- ❖ The BatchBuilder creates a batch load file based on the files in a specified directory. The BatchBuilder reads recursively through all the sub-directories to create the batch load file.
- ❖ A mapping file tells the BatchBuilder how to determine the metadata for each file record. You can use the BatchBuilder to create and save custom [Mapping Files](#) (page 7-21).
- ❖ You can run the BatchBuilder from the stand-alone application interface or from the command line.
- ❖ The BatchBuilder can also be used to create *external collections* of content, which are indexed and stored in a separate search collection rather than in the content server database.
  - If you want users to be able to update metadata and delete content from an external collection, you must install the Lightly Managed Content feature.
  - If you do not install the Lightly Managed Content feature, you can still set up “read-only” external collections, where users can search for content but cannot update metadata or delete content. This option is recommended when external content is also included in another content server instance.

## Mapping Files

---

Mapping files are text files that have a *.hda* extension, which identifies them as a type of data file used by the content server.



**Note:** See *Working With Components* for more information on HDA files, LocalData properties, and ResultSets.

## Mapping File Formats

The metadata mapping can be defined in one of two formats:

- ❖ As name/value pairs in a LocalData definition, a mapping file would look like the following:

```
@Properties LocalData
dDocName=<$filename$>.<$extension$>
dInDate=<$filetimestamp$>
@end
```

- ❖ As a BatchBuilderMapping ResultSet, a mapping file would look like the following:

```
@ResultSet SpiderMapping
2
mapField
mapValue
dDocName
<$filename$>.<$extension$>
dInDate
<$filetimestamp$>
@end
```

## Mapping File Values

The following values can be used in a mapping file:

Value	Description	Example
Normal string	All files will have the specified metadata value.	dDocType=ADACCT All files will be the ADACCT content type.
Idoc script	Any supported Idoc script. See the <i>Idoc Script Reference Guide</i> for more information.	xLanguage=<\$if strEquals(dir2, "EN") \$>English<\$elseif strEquals(dir2, "SP") \$>Spanish<\$else\$>French <\$endif\$>

Value	Description	Example
<\$dir1\$>, <\$dir2\$>	The directory name at the specified level in the file's path. <\$dir1\$> refers to the root directory specified in the "Directory" field, <\$dir2\$> refers to the next level directory, and so on.	dDocType=<\$dir1\$> dSecurityGroup=<\$dir2\$> dDocAccount=<\$dir3\$> If the file path is "f:/docs/public/sales/march.doc" and you have specified the "Directory" value as "f:/docs", the values would be: <\$dir1\$> = "docs" <\$dir2\$> = "public" <\$dir3\$> = "sales"
<\$dUser\$>	The user currently logged in.	dDocAuthor=<\$dUser\$> If sysadmin is logged in, then <\$dUser\$> would equal "sysadmin".
<\$extension\$>	The file extension of the file.	dDocTitle=<\$filename\$>. <\$extension\$> If the file path is "d:/salesdocs/sample.doc", then <\$extension\$> would equal "doc".
<\$filename\$>	The name of the file.	dDocName=<\$filename\$> If the file path is "d:/salesdocs/sample.doc", then <\$filename\$> would equal "sample".
<\$filepath\$>	The entire directory path of the file, including the file name.	xPath=<\$filepath\$> If the file path is "c:/docs/public/acct/sample.doc", then <\$filepath\$> is "c:/docs/public/acct/sample.doc".



Value	Description	Example
<\$filesize\$>	The size of the file (in bytes).	xFileSize=<\$filesize\$> For a 42KB file, <\$filesize\$> would be 43008.
<\$filetimestamp\$>	The date and time the file was last modified.	dInDate=<\$filetimestamp\$> If the last modified date is September 13, 2001 at 4:03 pm, then <\$filetimestamp\$> would equal “9/13/01 4:03 PM” for an English-US locale.
<\$URL\$>	The URL of the file, based on the values of the physical file root and relative web root.	

## Creating a Batch Load File from the BatchBuilder Screen

Use the following procedure to create a batch load file from the BatchBuilder screen:

1. Start the Batch Loader:
  - **Win32:** Select **Start—Programs—Content Server—*instance\_name*—Utilities—Batch Loader**.
  - **UNIX:** Change to the <install\_dir>/bin/ directory, type **BatchLoader** in a shell window, and press the RETURN key.

The login screen is displayed.
2. Enter the sysadmin user name and password, and click **OK**.  
The [Batch Loader Application](#) (page 7-34) is displayed.
3. Select **Options—Build Batch File**.  
The [BatchBuilder Screen](#) (page 7-28) is displayed.
4. In the Directory field, enter the location of the files to be included in the batch load file.

5. In the Batch Load File field, enter the path and file name for the batch load file. You can click the Browse button to navigate to and select the directory and file.
6. From the Mapping list, select a mapping file. To create a new mapping file or edit an existing one, see [Creating a Mapping File](#) (page 7-25).
7. **Optional:** In the File Filter field, enter filter settings to include or exclude particular files from the batch load file.
8. **Optional:** To batch load a read-only external collection, select the **External** check box and select the external collection options. See the *Lightly Managed Content Component* documentation for details.



**Note:** You do not need to install the LMC feature to create a read-only external collection, and if you are not using the LMC feature, you do not need to set the LMCReadOnly configuration variable.

9. Click **Build**.
10. When the build process is complete, click **OK**.
11. Open the batch load file in a text editor and double-check the file records.
12. To save the current batch load file settings as the default, select **Options—Save Configuration**.

## Creating a Mapping File

---

Use the following procedure to create a mapping file.

1. Display the [BatchBuilder Screen](#) (page 7-28).
2. Click **Edit** next to the Mapping field.  
The [BatchBuilder Mapping List Screen](#) (page 7-30) is displayed.
3. Click **Add**.  
The [Add BatchBuilder Mapping Screen](#) (page 7-31) is displayed.
4. Enter a name and description for the mapping file, and click **OK**.  
The [Edit BatchBuilder Mapping Screen](#) (page 7-32) is displayed.
5. Click **Add**.  
The [Add/Edit BatchBuilder Mapping Field Screen](#) (page 7-33) is displayed.
6. Enter a metadata field name to be defined. For example, enter *dDocName* for the Content ID field, or *xComments* for the Comments field.

7. Enter the value for the metadata field.
  - Type any constant text and Idoc script directly in the Value field. For example, to set *ADACCT* as the Type for all documents in the batch load file, enter *dDocType* in the **Field** field, and enter *ADACCT* in the **Value** field. (See the *Idoc Script Reference Guide* for more information on Idoc Script.)
  - To add a predefined variable to the Value field, select the variable in the right column and click the << button. For example, to set each document's second-level directory as the Security Group, enter *dSecurityGroup* in the Field field, and insert the <\$dir1\$> variable in the Value field.



**Caution:** Be careful when choosing predefined variables. Many metadata fields have length limitations and cannot contain certain characters (such as spaces or punctuation marks). See *Managing Repository Content* for more information.

8. Click **OK**.
9. Repeat steps 4 through 8 for as many metadata fields as you want to define.
10. Click **OK** to save changes and close the Edit BatchBuilder Mapping screen.

The mapping file is saved as *MapFileName.hda* in the  
<install\_dir>/search/external/mapping/ directory.

11. Click **Close** to close the BatchBuilder Mapping List screen.

## Creating a Batch Load File from the Command Line

---

You can create a batch load file by entering the BatchBuilder parameters from a command line rather than entering them in the BatchBuilder screen. Use the following procedure to create a batch load file from the command line:

1. Open the <install\_dir>/bin/intradoc.cfg file in a text editor, and add the following line:  
BatchLoaderUserName=sysadmin

This is required so that the system logs in as the system administrator, because only users who have admin rights have permission to run the Batch Loader and BatchBuilder applications.

2. Save and close the file.
3. Open a command line window and change to the <install\_dir>/bin/ directory.



**Caution:** Run the BatchBuilder using the same operating system account that runs the content server. Otherwise, the software might not process your data due to permissions problems.

4. Enter the following command:

**Win32:** BatchLoader.exe /spider /q /ddirectory /mmappingfile  
/nbatchloadfile

**Unix:** BatchLoader -spider -q -ddirectory -mmappingfile -nbatchloadfile

The following flags can be used with the BatchLoader command to run the BatchBuilder from the command line:

Flag	Required?	Description
-spider or /spider	Yes	Runs the BatchBuilder application.
-q or /q	No	Runs the BatchBuilder in quiet mode in the background. (If the BatchBuilder is run from the command line without this flag, the BatchBuilder screen will be displayed.)
-d or /d	Yes	Directory field value.
-m or /m	Yes	Mapping field value.
-n or /n	Yes	Batch Load File field value.
-e or /e	No	Exclude specified files (Exclude check box selected).
-i or /i	No	Include specified files (Exclude check box clear).

## Win32 Example

The following example shows the correct syntax to run the BatchBuilder from a Win32 command line, where:

- ❖ Directory = c:/myfiles
- ❖ Mapping File = MyMappingFile
- ❖ Batch Load File = c:/batching/batchinsert.txt
- ❖ Excluded files = \*.exe and \*.zip

```
BatchLoader.exe /spider /q /dc:/myfiles /mMyMappingFile
/nc:/batching/batchinsert.txt /eexe,zip
```

## UNIX Example

The following example shows the correct syntax to run the BatchBuilder from a UNIX command line, where:

- ❖ Directory = /myfiles
- ❖ Mapping File = MyMappingFile
- ❖ Batch Load File = /batching/batchinsert.txt
- ❖ Excluded files = index.htm and index.html

```
BatchLoader -spider -q -d/myfiles -mMyMappingFile  
-n/batching/batchinsert.txt -eindex.htm,index.html
```

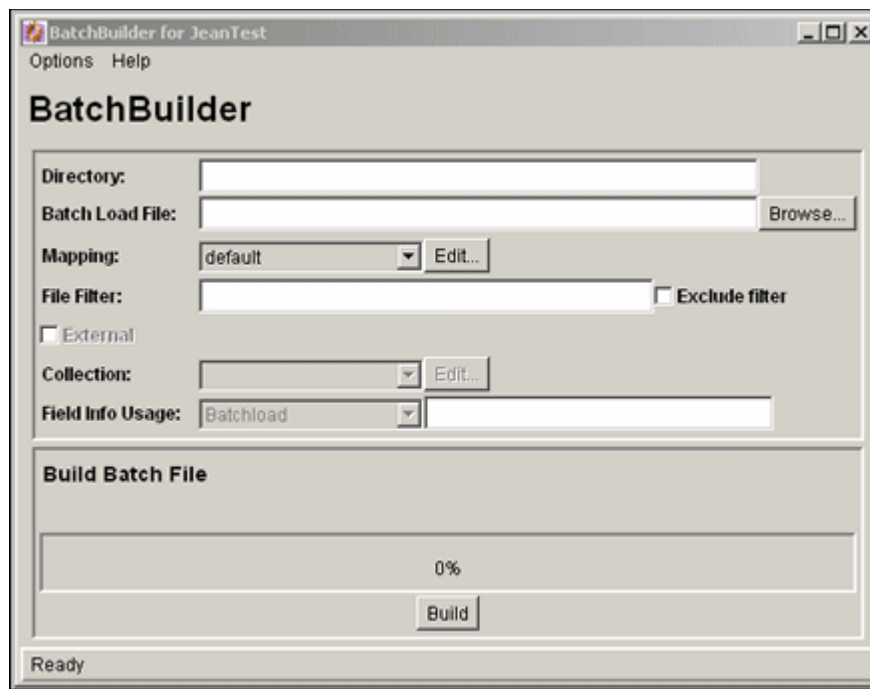
## BATCH INTERFACE SCREENS

---

The following screens are used in batch loading operations.

- ❖ [BatchBuilder Screen](#) (page 7-28)
- ❖ [BatchBuilder Mapping List Screen](#) (page 7-30)
- ❖ [Add BatchBuilder Mapping Screen](#) (page 7-31)
- ❖ [Edit BatchBuilder Mapping Screen](#) (page 7-32)
- ❖ [Add/Edit BatchBuilder Mapping Field Screen](#) (page 7-33)
- ❖ [Batch Loader Application](#) (page 7-34)

## BatchBuilder Screen

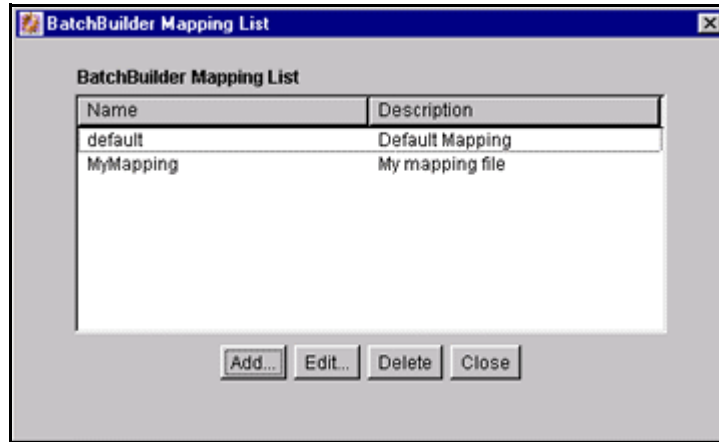


The BatchBuilder screen is used to create a batch load file. To access this screen, select **Options—Build Batch File** from the [Batch Loader Application](#) (page 7-34).

Feature	Required?	Description
Options—Save Configuration	N/A	Saves the current BatchBuilder settings in the <code>&lt;install_dir&gt;/bin/intradoc.cfg</code> file.
Options—Load Batch Loader	N/A	Displays the <a href="#">Batch Loader Application</a> (page 7-34).
Directory field	Yes	Enter the directory that contains the content to be included in the batch load file. All files in sub-directories of this directory will also be included in the batch load file.
Batch Load File field	Yes	Enter the path and file name of the batch load file to be created. If you enter the name of an existing file, the file will be replaced by the new batch load file.

Feature	Required?	Description
Browse button	N/A	Enables you to navigate to and select the folder and enter a file name for the batch load file.
Mapping list	Yes	Select the mapping file to be used to specify metadata values. See <a href="#">Creating a Mapping File</a> (page 7-25) for more information.
Edit button	N/A	Displays the <a href="#">BatchBuilder Mapping List Screen</a> (page 7-30).
File Filter field and Exclude Filter check box	No	<p>Enter files to be included or excluded from the batch load file.</p> <p>If this field is blank, all files in the specified directory and sub-directories are included.</p> <p>If files are specified in this field and the <b>Exclude Filter</b> check box is clear, only the specified files are included in the batch load file.</p> <p>If files are specified in this field and the <b>Exclude Filter</b> check box is selected, all files <b>except</b> the specified files are included in the batch load file.</p> <p>Whole file names and/or file extensions can be specified.</p> <p>Separate file names and extensions with a comma.</p> <p>Extensions can be entered as *.ext, .ext, or ext.</p>
External check box	No	<p><b>Selected</b> = The content will be batch loaded as an external collection, using the settings in the Collection field and Field Info Usage field. See the <i>Lightly Managed Content Component</i> documentation for more information.</p> <p><b>Clear</b> = The content will be batch loaded normally. This is the default.</p>
Build button	N/A	Creates a batch load file using the specified parameters.

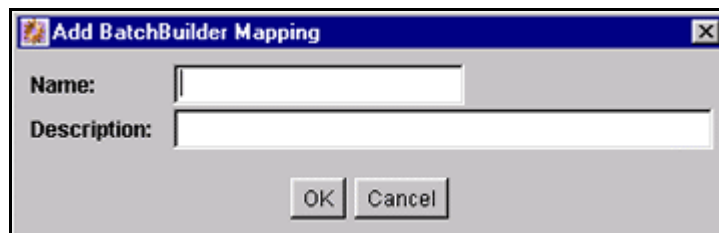
## BatchBuilder Mapping List Screen



The BatchBuilder Mapping List screen is used to create a mapping list for the batch load file. To access this screen, click **Edit** next to the Mapping field on the [BatchBuilder Screen](#) (page 7-28).

Feature	Description
Name column	Lists the available mapping files.
Description column	Short description of each mapping file.
Add button	Displays the <a href="#">Add BatchBuilder Mapping Screen</a> (page 7-31).
Edit button	Displays the <a href="#">Edit BatchBuilder Mapping Screen</a> (page 7-32).
Delete button	Deletes the selected mapping file.
Close button	Closes the BatchBuilder Mapping List screen.

## Add BatchBuilder Mapping Screen





The Add BatchBuilder Mapping screen is used to name a new mapping file. To access this screen, click **Add** on the [BatchBuilder Mapping List Screen](#) (page 7-30).

Feature	Description
Name field	Unique name for the mapping file. Maximum field length is 30 characters. The following are not acceptable: spaces, tabs, linefeeds, carriage returns, and ; ^ ? : @ & + " # % < * ~
Description field	Short description of the mapping file.
OK button	Displays the <a href="#">Edit BatchBuilder Mapping Screen</a> (page 7-32).
Cancel button	Closes the Add BatchBuilder Mapping screen without creating a new mapping file.

## Edit BatchBuilder Mapping Screen

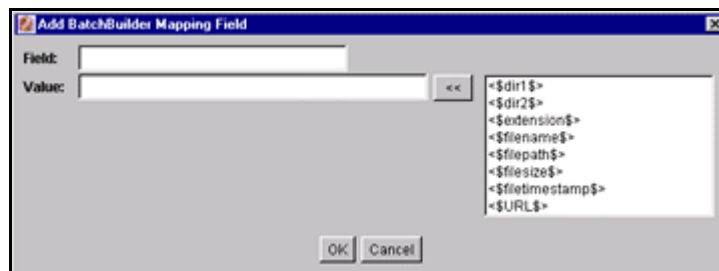
The Edit BatchBuilder Mapping screen is used to edit a mapping file. To access this screen, do one of the following:

- ❖ Click **OK** on the [Add BatchBuilder Mapping Screen](#) (page 7-31).

❖ Click **Edit** on the [BatchBuilder Mapping List Screen](#) (page 7-30).

Feature	Description
Description field	Short description of the mapping file.
Field column	Lists metadata fields that have values defined in the mapping file.
Value column	Shows the values that will be assigned to the metadata fields in the batch load file.
Add button	Displays the <a href="#">Add/Edit BatchBuilder Mapping Field Screen</a> (page 7-33).
Edit button	Displays the <a href="#">Add/Edit BatchBuilder Mapping Field Screen</a> (page 7-33).
Delete button	Deletes the selected metadata field from the mapping file.
OK button	Saves the current settings in the mapping file.
Cancel button	Closes the Edit BatchBuilder Mapping screen without applying any changes.

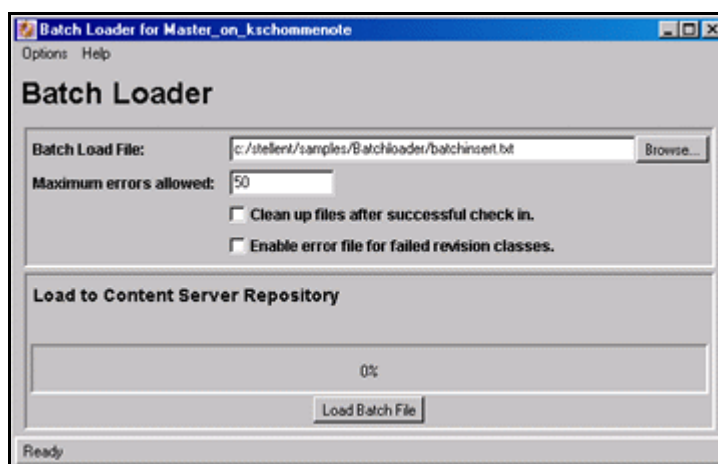
## Add/Edit BatchBuilder Mapping Field Screen



The Add/Edit BatchBuilder Mapping Field screen is used to define the mapping value for a metadata field. To access this screen, click **Add** or **Edit** on the [Edit BatchBuilder Mapping Screen](#) (page 7-32).

Feature	Description
Field field	Enter the name of the metadata field to be defined, such as <i>dDocType</i> or <i>xComments</i> .
Value	Enter the value to be used in the batch load file. You can type directly in this field and/or insert predefined variables from the column to the right.
<< button	Inserts the variable selected from the right column into the Value field.
Variable column	Lists predefined variables you can use as values in the batch load file. See <a href="#">Mapping File Values</a> (page 7-22) for more information.
OK button	Applies the field and value settings to the mapping file.
Cancel button	Closes the Add/Edit BatchBuilder Mapping Field screen without applying any changes.

## Batch Loader Application



The Batch Loader application is an administration application that is used to batch load files in the content server. To access this screen, see [Running Administration Applications in Stand-alone Mode](#) (page 1-8).

Feature	Description
Options menu	<p><b>Save Configuration</b>—Saves the current Batch Loader settings in the <i>&lt;install_dir&gt;/bin/intradoc.cfg</i> file.</p> <p><b>Build Batch File</b>—Displays the <a href="#">BatchBuilder Screen</a> (page 7-28).</p> <p><b>Exit</b>—Closes the Batch Loader screen.</p>
Help menu	<p><b>Contents</b>—Displays the content server online help.</p> <p><b>About Content Server</b>—Displays version, build, and copyright information for the content server.</p>
Batch Load File field	The path and file name of the batch load file. If settings have not been saved to the <i>intradoc.cfg</i> file, the default is <i>&lt;install_dir&gt;/samples/Batchloader/batchinsert.txt</i> .
Browse button	Enables you to navigate to and select the batch load file.
Maximum errors allowed field	<p>The number of errors after which the Batch Loader stops processing records from the batch load file. The default is 50.</p> <p>If you plan to run the Batch Loader with a large number of files overnight, consider increasing this number so that the process doesn't stop prematurely.</p> <p>If you are monitoring the Batch Loader closely, consider decreasing this number so you are notified of errors as they occur.</p>
Clean up files after successful check in check box	Deletes each file from the hard drive after it is successfully checked in or updated.
Enable error file for failed revision classes check box	Creates a text file containing the file records that failed during batch loading. You can fix the errors in this content and rerun it as the batch load file.
Progress bar	Displays the progress of the batch loading process.
Load Batch File button	Starts the batch loading process.

# RUNNING THE BATCH LOADER

---

This section covers these topics:

## **Concepts**

- ❖ [About Running the Batch Loader](#) (page 7-36)

## **Tasks**

- ❖ [Batch Loading from the Batch Loader Screen](#) (page 7-36)
- ❖ [Batch Loading from the Command Line](#) (page 7-37)
- ❖ [Using the IdcCommand Utility and Remote Access](#) (page 7-38)
- ❖ [Batch Loading Content as Metadata Only](#) (page 7-43)
- ❖ [Batch Loader -console Command Line Switch](#) (page 7-44)
- ❖ [Adding a Redirect](#) (page 7-44)
- ❖ [Correcting Batch Load Errors](#) (page 7-45)

## **Interface**

- ❖ [Batch Loader Application](#) (page 7-34)

## About Running the Batch Loader

---

The Batch Loader uses the information from a batch load file to check in (insert), delete, and/or update a large number of files on your content server system at one time.

- ❖ You can run the Batch Loader from the stand-alone application interface or from the command line.
- ❖ After you run the Batch Loader, the content server processes files through the Inbound Refinery and the Indexer as it would for any other content item.

## Batch Loading from the Batch Loader Screen

---

Use the following procedure to batch load content using the Batch Loader screen:

1. Display the [Batch Loader Application](#) (page 7-34).

2. Click **Browse**, and navigate to and select the batch load file.
3. To change the number of errors that can occur before the Batch Loader stops processing, enter the number in the **Maximum errors allowed** field.
4. To delete files from the hard drive after they are successfully checked in or updated, select the **Clean up files after successful check in** check box.
5. To create a text file containing the file records that failed during batch loading, select the **Enable error file for failed revision classes** check box.
6. Click **Load Batch File** to start the Batch Loader process.

When the batch load process is complete, a Batch Loader message screen is displayed, indicating the number of errors that occurred, if any.

7. If you enabled the error file, write down the file name shown in the message box.
8. Click **OK**.
9. Correct any problems with the batch load.
10. To save the current Batch Loader settings as the default, select **Options—Save Configuration**.

## Batch Loading from the Command Line

---

You can batch load content by entering the Batch Loader parameters from a command line rather than entering them in the Batch Loader screen. Use the following procedure to run the Batch Loader from the command line:

1. Open the `<install_dir>/bin/intradoc.cfg` file in a text editor, and add the following line:

```
BatchLoaderUserName=sysadmin
```

This is required so that the system logs in as the system administrator, because only users who have admin rights have permission to run the Batch Loader application.

2. Save and close the file.
3. Open a command line window and change to the `<install_dir>/bin/` directory.



**Caution:** Run the Batch Loader using the same operating system account that runs the content server. Otherwise, the software might not process your files due to permissions problems.

4. Enter the following command:

**Win32:** BatchLoader.exe /q /nbatchloadfile

**Unix:** BatchLoader -q -nbatchloadfile

The Batch Loader processes the batch load file, but message boxes will not be displayed.

#### 5. Correct any problems with the batch load.

The following flags can be used with the BatchLoader command from the command line:

Flag	Required?	Description
-q or /q	No	Runs the Batch Loader in quiet mode in the background. (If the Batch Loader is run from the command line without this flag, the Batch Loader screen will be displayed.)
-n or /n	Yes	Batch Load File field value.
-console	No	Echoes all output to the HTML content server log and to the console window that is running the Batch Loader. See <a href="#">Batch Loader -console Command Line Switch</a> (page 7-44) for details.

## Win32 Example

The following example shows the correct syntax to run the Batch Loader from a Win32 command line, where the batch load file is c:/batching/batchinsert.txt:

```
BatchLoader.exe /q /nc:/batching/batchinsert.txt
```

## UNIX Example

The following example shows the correct syntax to run the Batch Loader from a UNIX command line, where the batch load file is /batching/batchinsert.txt:

```
BatchLoader -q -n/batching/batchinsert.txt
```

## Using the IdcCommand Utility and Remote Access

Occasionally, you may need to use remote access when managing your Content Server system. This does not necessarily mean that remote terminal access is required. However, you must have the ability to submit commands to the server from a remote location.

Combining remote access with the IdcCommand utility provides a powerful toolset and an easy way to checkin a large number of files to your Content Server. To take advantage of this functionality, you will need to properly set up the workstation to submit commands and be able to use the IdcCommand utility with a batch load command file. This section covers the following topics:

- ❖ [Batch Load Command Files](#) (page 7-39)
- ❖ [Preparing for Remote Batch Loading](#) (page 7-39)

## Batch Load Command Files

A batch load command file contains a set of commands for each file that is loaded. If you are loading a large number of files, the command file may contain hundreds of lines. Using an editing tool can simplify the task of creating the numerous required lines. For example, the procedure for [Preparing for Remote Batch Loading](#) (page 7-39) shows how you can prepare a batch load command file using the editing and mail merge features of Microsoft Office.

The following is an example Batch Load Command File:

```
@Properties LocalData
IdcService=CHECKIN_UNIVERSAL
doFileCopy=1
dDocTitle=thisfile
dDocType=Native
dSecurityGroup=Internal
dDocAuthor=sysadmin
primaryFile=thisfile.xls
xComments=Initial Check In
@end
<<EOD>>@Properties LocalData
IdcService=CHECKIN_UNIVERSAL
doFileCopy=1
dDocTitle=99.tif
dDocType=Native
dSecurityGroup=Internal
dDocAuthor=sysadmin
primaryFile=v:\99.tif
xComments=Initial Check In
@end
<<EOD>>
```

## Preparing for Remote Batch Loading

To perform batch loading from remote locations, complete the following procedure:



## 1. Setup the Local Workstation:

- a. Log into the local PC.
- b. Open Windows Explorer.
- c. Create a working directory (for example, c:\<working\_dir>).
- d. In the working directory, create one or more directories for the various Content Servers you will be accessing (for example, c:\<working\_dir>\development and c:\<working\_dir>\contribution).
- e. In each of these directories, create a *cmdfiles* subdirectory.
- f. From the remote Content Server instance, copy the following directories (and their files) to your working directory:

<working\_dir>\idcm1\bin

<working\_dir>\idcm1\config

<working\_dir>\idcm1\shared\config\resources\lang

<working\_dir>\idcm1\shared\config\resources\lang\en

<working\_dir>\idcm1\weblayout\groups\secure\logs

- g. In a text editor, open the <Install\_Dir>/bin/intradoc.cfg file and update the IntradocDir configuration variable to match your directory structure (for example, IntradocDir=C:/<working\_dir>/xxS/development/).
- h. In a text editor, open the <Install\_Dir>/config/config.cfg file and ensure the following settings are correct for the server you are accessing:
 

```
IntradocServerPort=4444
IntradocServerHostName=xxsicmsd
```
- i. On the remote server, add the IP address of the local PC to the Security Filter, using the Systems Properties utility and restart the server.

## 2. Test the Configuration for the Remote Workstation:

- a. In the cmdfiles directory, create a file named *pingservertest.hda* and add the following lines:
 

```
@Properties LocalData
IdcService=PING_SERVER
@end
```
- b. Open a command prompt and change to your working bin directory (for example, cd c:\<working\_dir>\development\bin
- c. Issue the following command:

```
IdcCommand -f ..\cmdfiles\pingservertest.hda -u sysadmin -l
..\pingservertest.log -c server
```

- d. Confirm the output. If you are successful, you will get the following message from the server.

3/24/04: Success executing service PING\_SERVER.

You have completed your setup for remote commands.

### 3. Create a Batch Load Command File:

This procedure uses the editing and mailmerge features of Microsoft Office to create a batch load command file.

- a. Create a file listing of your directory contents:
  1. Open a command prompt and change to the root directory representing the files you intend to load.
  2. Create a file listing, using the following command to redirect the output into a file:

```
dir /s /b > filelisting.txt
```

3. Check your *filelisting.txt*, it will look something like this:

```
V:\policies\ADMIN\<working_dir>_Admin\AbbreviationList.doc
V:\policies\ADMIN\<working_dir>_Admin\Abbreviations.doc
V:\policies\ADMIN\<working_dir>_Admin\AbsencePres.doc
V:\policies\ADMIN\<working_dir>_Admin\AdmPatientCare.doc
V:\policies\ADMIN\<working_dir>_Admin\AdmRounds.doc
V:\policies\ADMIN\<working_dir>_Admin\AdverseEvents.doc
V:\policies\ADMIN\<working_dir>_Admin\ArchivesPermanent.doc
V:\policies\ADMIN\<working_dir>_Admin\ArchivesRetrieval.doc
V:\policies\ADMIN\<working_dir>_Admin\ArchivesStandardReq.doc
```



**Note:** When working with batch loads, it is important to note that the file must exist on the server indicated by the primaryFile statement in the batch load command file. Optimally, you should use the same letter to map the directory of files to the server and to your local machine. Alternatively, you can copy the directory of files to the server temporarily.

- b. Edit the file listing to create your filename and title data:
  1. Open your filelisting.txt in Excel.
  2. Using 'Replace', remove all the directory information leaving only the file name. Look for and remove the line for 'filelisting.txt' also.
  3. Copy column A (containing the filenames) to column B. In this example the filename is also used for the title and Column B will become the title.
  4. Using replace, remove the file extension from the names in column B.

5. Insert a new first line and enter filename in the first column and title in the second.
6. Save the file.
- c. Create an hda file from the filelisting using Mail Merge features:
  1. Open Word and create a new document with your set of batch load commands. The following example shows basic batch load commands. You will need to match your configuration settings when you create your batch load commands.

```
@Properties LocalData
IdcService=CHECKIN_UNIVERSAL
doFileCopy=1
dDocTitle=
dDocType=Native
dSecurityGroup=Internal
dDocAccount=Policy/Admin
dDocAuthor=sysadmin
primaryFile=d:/temp/<working_dir>_Admin/
xComments=Initial Check In
@end
<<EOD>>
```

2. Select Tools / Letters and Mailing / Mail Merge Wizard and advance through the wizard. Choose the selections below, to use your filelisting as input to the mail merge.
  - Letter Document (step 1)
  - Current document (step 2)
  - Existing List (step 3) and select your Excel spreadsheet as the data source
  - More Items (step 4), place the title and filename fields into the word document so that it looks like the following:

```
@Properties LocalData
IdcService=CHECKIN_UNIVERSAL
doFileCopy=1
dDocTitle="title"
dDocType=Native
dSecurityGroup=Internal
dDocAccount=Policy/Admin
dDocAuthor=sysadmin
primaryFile=d:/temp/<working_dir>_Admin/"filename"
xHistory=Initial Check In
@end
<<EOD>>
```

3. Complete the mail merge (Steps 5 and 6) and you will have a new Word document with one merge record per page.
4. Edit the letters, selecting all, and use the 'replace' feature to remove all of the section breaks.
5. Save the file as a plain text file to the cmdfiles directory with the file extension of hda (for example, filelisting.hda)
6. Execute the upload
  - a. Open a command prompt.
  - b. Change to the working bin directory.
  - c. Issue the command:

```
IdcCommand -f ../cmdfiles/filelisting.hda -u sysadmin -l
../filelisting.log -c server
```

Your files will be checked into the content server and you will see a message in the command window as each file is checked in.

## Batch Loading Content as Metadata Only

---

Depending on the action you plan to perform using the Batch Loader, certain fields are required in the batch load file. If you are updating only the metadata in existing content items, the primaryFile field is not required in the batch load file—see [Update Requirements](#) (page 7-10).

However, if you want to load (insert action) content into the Content Server as metadata only, then the primaryFile field is required in the batch load file. Although the field is ignored by the import, the Batch Loader expects it to be defined. If the primaryFile field is missing, you will get an error as follows (or similar):

Please check record number <number>. BatchLoader: unable to check in '<record>' because the required field 'primaryFile' is missing.

To batch load content as metadata only:

1. Open Content Server's config.cfg file:
 

```
<Install_Dir>/config/config.cfg
```
2. Add the following configuration variables:
 

```
createPrimaryMetaFile=true
AllowPrimaryMetaFile=true
```
3. Save and close the config.cfg file.

4. In the batch load file, add the following field for each record:

```
primaryFile=
```

Note that leaving the field blank is acceptable. The field is ignored but must be included.

5. Continue to batch load your content using the Batch Loader procedure or the command line procedure. See [Batch Loading from the Batch Loader Screen](#) (page 7-36) or [Batch Loading from the Command Line](#) (page 7-37).

## Batch Loader -console Command Line Switch

---

Adding the **-console** switch to the Batch Loader command line causes all output to be echoed to the HTML content server log and to the console window that is running the Batch Loader. Alternately, you can use operating system redirects to send the output to a separate log file.



**Important:** As of Content Server 5.1, the **-console** switch does not follow standard Windows command line syntax (although this may be corrected in later versions). You must use the *-console* syntax usually associated with UNIX instead of the */console* syntax. With most other command line utilities, both syntaxes will work on both platforms.

## Examples

### Win32 command line:

```
BatchLoader.exe /q -console /nc:/batching/batchinsert.txt
```

### Unix command line:

```
BatchLoader -q -console -n/u2/apps/batching/batchinsert.txt
```

### Sample output:

```
Processed 1 of 4 record.
Processed 2 of 4 records.
Processed 3 of 4 records.
Processed 4 of 4 records.
Done processing batch file 'c:/batching/batchinsert.txt'. Out of 4 records
processed, 4 succeeded and 0 errors occurred.
```

## Adding a Redirect

---

You can use a redirect symbol on the command line to send the Batch Loader output to a separate log file. The symbol works on both UNIX and Windows.

- ❖ **Content Server v4.0 through 5.0:** By default, the **-console** switch sends the Batch Loader's output to *stdout*. To redirect the output to a different file, use the standard redirect symbol **>**.
- ❖ **Content Server v5.0.1 and later:** By default, the **-console** switch sends the Batch Loader's output to *stderr*. To redirect the output to a different file, use the special redirect symbol **2>**.



**Note:** In the examples that follow, each command would be entered all on one line.

## Example: Content Server v4.0 through 5.0

Win32 command line with redirect:

```
BatchLoader.exe /q -console /nc:/batching/batchinsert.txt > batchlog.txt
```

Unix command line with redirect:

```
BatchLoader -q -console -n/u2/apps/batching/batchinsert.txt >  
/logs/CSbatchload.log
```

## Example: Content Server v 5.0.1 and Later

Win32 command line with redirect:

```
BatchLoader.exe /q -console /nc:/batching/batchinsert.txt 2> batchlog.txt
```

Unix command line with redirect:

```
BatchLoader -q -console -n/u2/apps/batching/batchinsert.txt 2>  
/logs/CSbatchload.log
```

## Correcting Batch Load Errors

---

Use the following procedure to correct any errors that occur during batch loading.

1. Open the content server log. See the *Troubleshooting Content Server Guide* for more information.
2. Look through the Type column for the word *Error*.
3. Read the description to determine the problem.
4. Fix the error in one of these files:
  - Batch load file

- The error file for the failed content. (This option is available only if you enabled it on the [Batch Loader Application](#) (page 7-34).) The error file is located in the same directory as the batch load file, with several digits appended to the batch load file name.



**Tech Tip:** If you rerun an entire batch load file, content items that have already been checked in will usually fail. This occurs because the release dates of the existing content items will be the same as the ones you are trying to insert.

**Figure 7-8** Content Server log

Content Server Log File Created: 11/1/01 11:14 AM		
Type	Time	Description
Info	11/1/01 11:14 AM	Done creating batch file 'C:\ntelnet\samples\Batchloader\batchinsert1.txt'. Created 13 records with 0 errors.
Error	11/1/01 11:16 AM	Content item 'CDS Request Form-Bug Tracking' was not successfully checked in. It contains spaces. The content ID 'CDS Request Form-Bug Tracking' is invalid.
Error	11/1/01 11:16 AM	Content item 'CDS Request Form' was not successfully checked in. It contains spaces. The content ID 'CDS Request Form' is invalid.
Error	11/1/01 11:16 AM	Content item 'Custom Documentation Services Fact Sheet' was not successfully checked in. It contains spaces. The content ID 'Custom Documentation Services Fact Sheet' is invalid.
Error	11/1/01 11:16 AM	Content item 'customizeddocs' was not successfully checked in. The release date (11/1/01 11:14 AM) of the new revision is not later than the release date (11/1/01 11:14 AM) of the latest revision in the system.
Error	11/1/01 11:16 AM	Content item 'Documentation Assessment Checklist' was not successfully checked in. It contains spaces. The content ID 'Documentation Assessment Checklist' is invalid.
Error	11/1/01 11:16 AM	Content item 'Graphics Tracking Form' was not successfully checked in. It contains spaces. The content ID 'Graphics Tracking Form' is invalid.
Error	11/1/01 11:16 AM	Content item 'Stellent Consulting Services Methodology Fact Sheet' was not successfully checked in. It contains spaces. The content ID 'Stellent Consulting Services Methodology Fact Sheet' is invalid.
Error	11/1/01 11:16 AM	Content item 'To Do List' was not successfully checked in. It contains spaces. The content ID 'To Do List' is invalid.
Info	11/1/01 11:16 AM	Done processing batch file 'c:\ntelnet\samples\Batchloader\batchinsert1.txt'. Out of 13 records processed, 5 succeeded and 8 errors occurred. Compare the system log and error file 'c:\ntelnet\samples\Batchloader\batchinsert1_011111116.txt', correct any deficiencies and run the error file to load remaining items.

## OPTIMIZING BATCH LOADER PERFORMANCE

This section provides some basic guidelines that you can use to improve Batch Loader performance. These suggestions can minimize potentially slow batch load performance when you are checking in a large number of content items. In many cases, proper tuning for batch loading can significantly speed up a slow server.

To minimize batch loading slow downs, try implementing the following Batch Loader adjustments:

- ❖ Temporarily disable other activities such as shutting down Inbound Refinery (see the *Inbound Refinery Administration Guide*) and suspending the automatic update cycle feature of the Repository Manager. See [Repository Manager: Indexer Tab](#) (page 4-5).
- ❖ Analyze your database usage during a batch load to help the database query optimizer. Databases have built-in optimizer utilities that can help make database queries more efficient. However, to maximize the efficiency of optimizers, it is necessary to update or recreate the statistics about the physical characteristics of a table and the associated

indexes. These characteristics include number of records, number of pages, and the average record length. The optimizers use these statistics to access data.

Each database has a proprietary command that you can use to invoke the statistic update or recreation process. For example:

- For Oracle, use the ANALYZE TABLE COMPUTE STATISTICS command
- For SQL Server, use the CREATE STATISTICS statement
- For DB2, use the RUNSTATS command

## Example: Best Practice Case Study

---

This case study describes a very slow load batch performance and the steps taken to diagnose and correct the situation. This information can serve as a model for isolating underlying issues and resolving batch loading performance problems.

### ***Background Information***

A user wanted to load 27,000 content items into Content Server that was running on an AIX server. The DB2 database was running on a separate AIX server. The content items included TIFs as the native files and corresponding PDFs as the web-viewable files. Inbound Refinery generated thumbnails from the native files.

Initially during the batch load, the performance was acceptable with sub-second insert times. However, after a few thousand content items were loaded, the performance began to degrade. Content items started to require a few seconds to load and, eventually, the load time was over 10 seconds per content item.

### ***Preliminary Troubleshooting***

While the batch load was running, nothing seemed to be wrong with the Content Server system. It had sufficient memory, the CPU utilization was low (less than 5%), and there were no disk bottlenecks. The Inbound Refinery server was busy, but was processing thumbnails at an acceptable rate.

Two issues were found with the database server:

- ❖ Two processes were taking turns to update the database. While one process was executing, the second process waited for other process to release database locks. When the first process completed, the second process executed while the first process waited. The processes in this execute/wait cycle included:



- The actual batch load process that was updating the database tables after inserting a content item.
- The Content Server was updating the database tables; changing the status from GENWWW to DONE after receiving notification that a thumbnail had been completed.

The two processes should not have been contending with each other because they were not updating the same content items. It seemed that the two processes were locking each other out because DB2 had performed lock escalation and was now locking entire database pages instead of single rows.

- ❖ There were a large number of tablespace scans being performed by both processes.

### ***Solution***

A two-step solution was used:

1. Inbound Refinery was shut down to prevent the status update process from competing with the batch loading process. The performance did improve because there was a 2000+ backlog of content items from the completed thumbnails.
2. A RUNSTATS command was issued on all the Content Server database tables to update the table statistics. This dramatically improved the performance of the batch load. The insert time returned to sub-second and the batch load completed within a short amount of time. It took 21 hours to insert the first 22,000 content items. After updating the table statistics, the remaining 5,000 content items were inserted in 13 minutes.





# BUILDING A WEB SITE

This section describes the Web Layout Editor and how it is used to build a web site. The following items are described:

- ❖ [Planning a Web Site](#) (page A-1)
- ❖ [Working with Web Pages](#) (page A-4)
- ❖ [Web Layout Editor Application](#) (page A-8)
- ❖ [Working with Reports](#) (page A-17)
- ❖ [Writing Queries](#) (page A-22)

## PLANNING A WEB SITE

---

This section covers these topics:

### **Concepts**

- ❖ [About Planning a Web Site](#) (page A-2)
- ❖ [Defining the Site Structure and Displaying Criteria](#) (page A-3)
- ❖ [Task Sequence](#) (page A-3)

## 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 A-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.

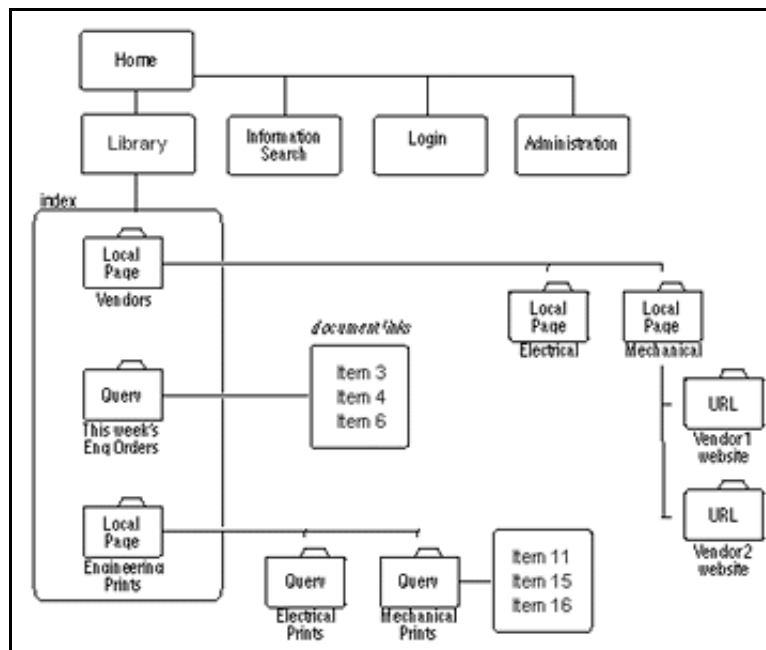


**Note:** Administrators are responsible for planning the web site. Subadministrators with WebLayout rights can create directory pages for groups and accounts if they have permissions for those groups and accounts.



**Note:** Web-viewable files always have lowercase file names.

**Figure A-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.

## 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 *Managing Repository Content Guide*.) 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.

## Task Sequence

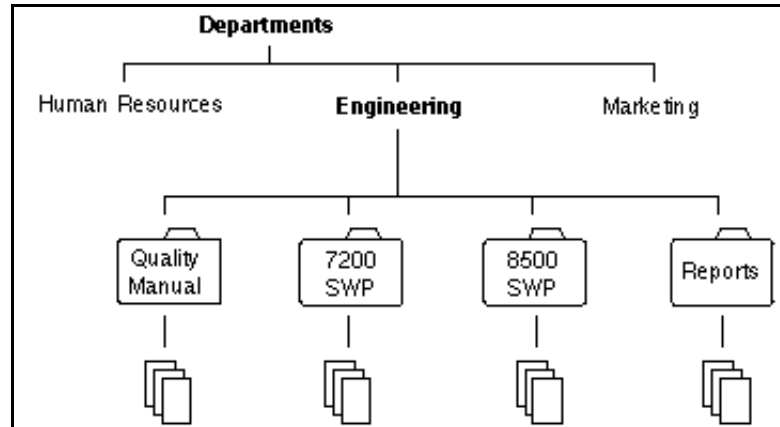
---

The following steps demonstrate the typical sequence of tasks for creating a web site with WebLayout 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 the *Managing Repository Content guide*).
3. **Define Content Types.** Define the content types to support your site (described in the *Managing Repository Content Guide*).
4. **Define Security Groups, Users, and Roles.** Create security groups and users, and assign roles to users to establish their permissions (described in *Managing Security and User Access guide*).

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 A-2.

**Figure A-2** Example Web Structure



## WORKING WITH WEB PAGES

---

This section covers these topics:

### **Concepts**

- ❖ [About Web Pages](#) (page A-4)
- ❖ [Local Page](#) (page A-5)
- ❖ [External URL](#) (page A-5)
- ❖ [Query](#) (page A-5)
- ❖ [Report](#) (page A-6)

### **About Web Pages**

---

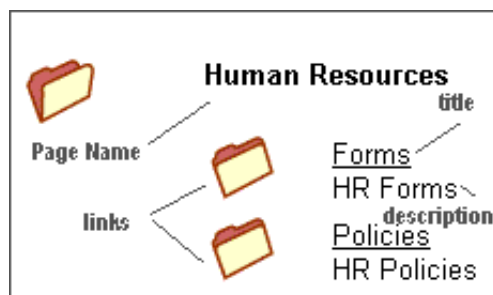
After completing the initial plan, build the web site and determine how it functions. Revise it if it does not perform properly or is not manageable. Continue this process until you have a design that is going to work for you and the users.

The hyperlinks 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 A-3:

**Figure A-3** Links in Example Local Page



## 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.



**Note:** 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.

## 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.

## 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.

## 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.

# WEB LAYOUT EDITOR APPLICATION

---

Use the Web Layout Editor 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:

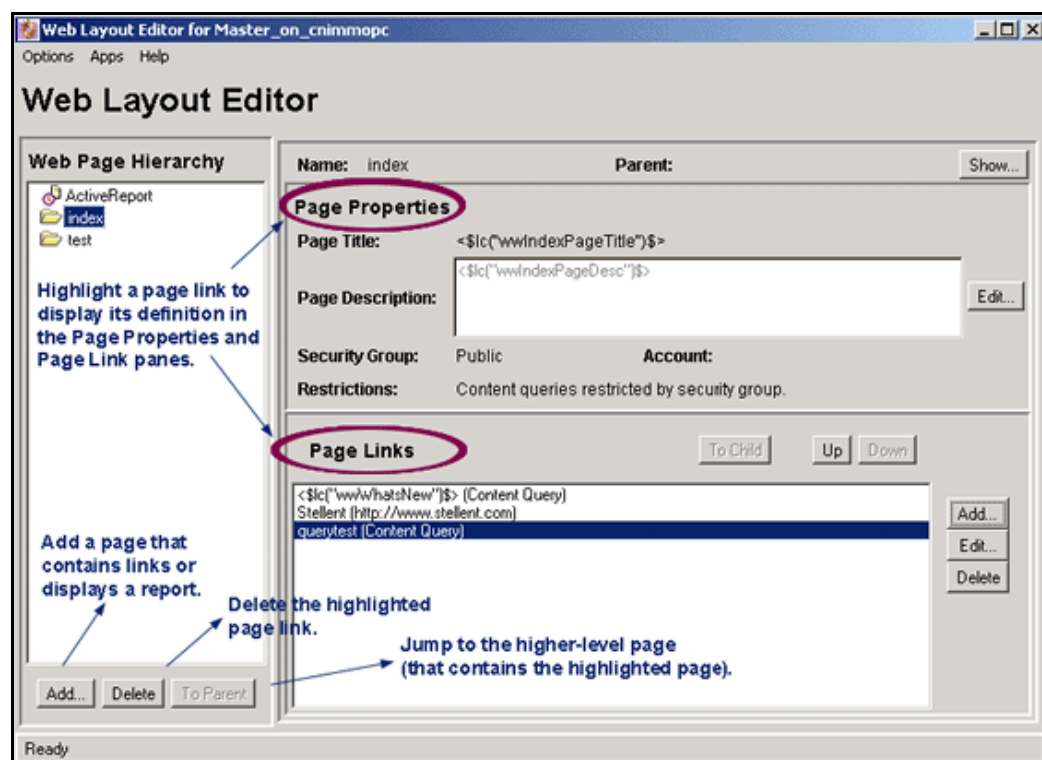
- ❖ [Web Page Hierarchy Pane](#) (page A-9)
- ❖ [Page Properties Pane](#) (page A-10)
- ❖ [Page Links Pane](#) (page A-11)
- ❖ [Adding a New Web Page](#) (page A-12)
- ❖ [Editing Web Page Properties](#) (page A-13)
- ❖ [Creating a Local Page Link](#) (page A-14)
- ❖ [Creating an External URL Link](#) (page A-15)
- ❖ [Editing a Hierarchical Web Page Structure](#) (page A-16)

Feature	Description
<a href="#">Web Page Hierarchy Pane</a> (page A-9)	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.
<a href="#">Page Properties Pane</a> (page A-10)	Defines the page header text and the security group that filters the content for the page.



Feature	Description
Lower pane	<p>The page selected in the Web Page Hierarchy pane determines what is displayed in the lower pane:</p> <ul style="list-style-type: none"> <li><a href="#">Page Links Pane</a> (page A-11) displays the contents of the selected link (URLs, local pages, queries).</li> <li><b>Active Report Specification Pane</b> and <b>Historical Report Specification Pane</b> display information about the selected report. See <a href="#">Working with Reports</a> (page A-17).</li> </ul>

## Web Page Hierarchy Pane

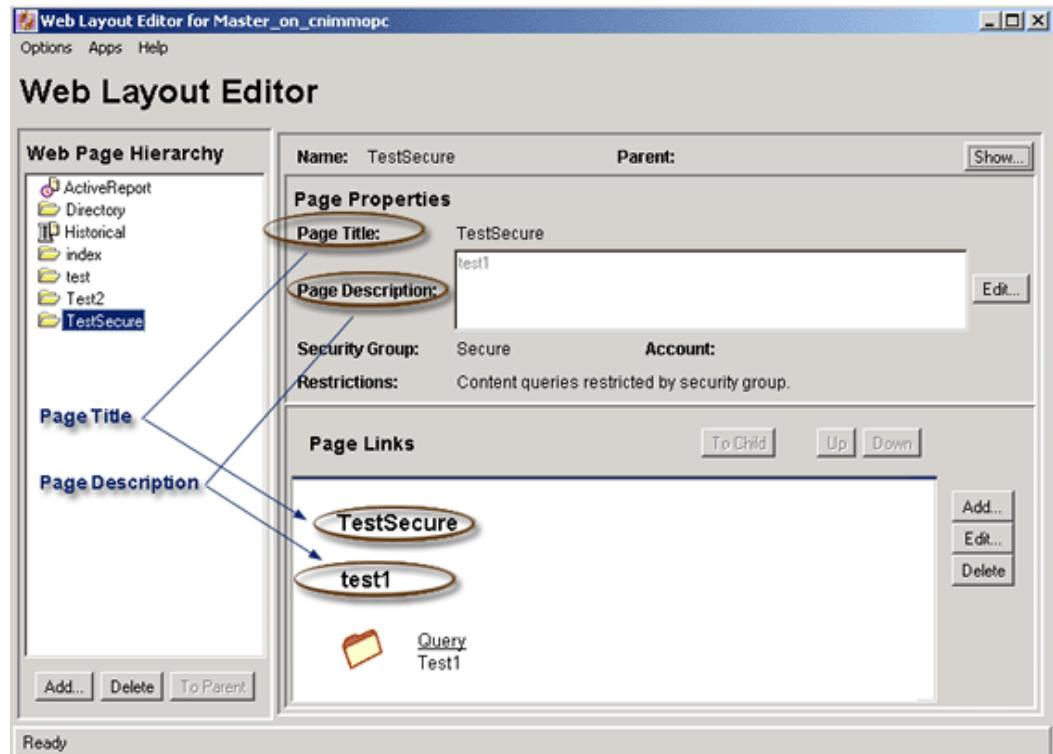


The Web Page Hierarchy pane displays the organization of the local web pages in the Library.



**Note:** 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.

## Page Properties Pane

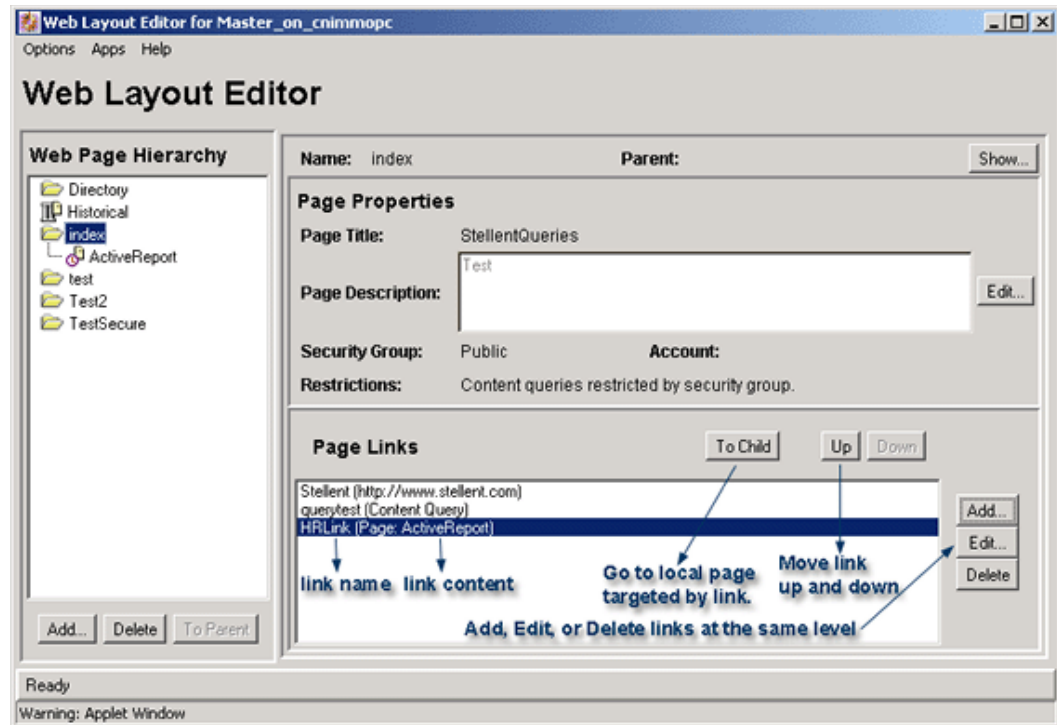


The Page Properties pane controls page header text and the security group that filters its content.



**Note:** 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.

## 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 the link and change its position as it is displayed on the web page.



**Note:** 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.

## Adding a New Web Page

To add a new web page to the web layout:

1. In the [Web Page Hierarchy Pane](#) (page A-9), click **Add**.
2. Enter information about the new page in the Add Web Page screen. Observe the following descriptions:

Feature	Description
Page Name field	This name appears in the Web Page Hierarchy pane.
Page Type list	<ul style="list-style-type: none"> <li>• <b>Directory</b>—A web page that contains links to other pages, links to URLs, or runs a query.</li> <li>• <b>Active Report</b>—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.</li> <li>• <b>Historical Report</b>—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.</li> </ul>
Page Title field	To view where this field appears on a web page, see <a href="#">Page Properties Pane</a> (page A-10).
Page Description field	To view where this field appears on a web page, see <a href="#">Page Properties Pane</a> (page A-10).
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.

Feature	Description
Restrict content queries by account check box	Enabling this box ensures that the account applies to all queries that originate from this page.

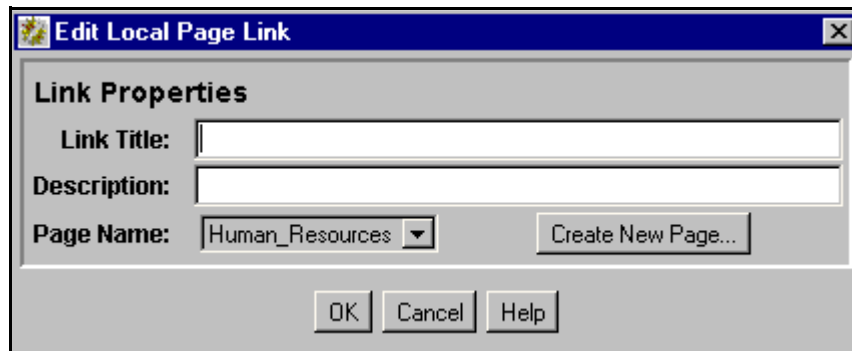
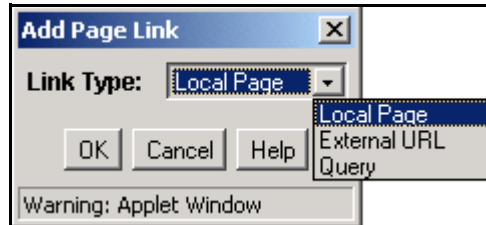
- Click **OK**.

## Editing Web Page Properties

To edit the properties of a web page:

- Select the page in the [Web Page Hierarchy Pane](#) (page A-9).
- Click **Edit** in the Page Properties pane.  
The Edit Page Properties screen is displayed.
- Edit the properties.
- Click **OK**.

## Creating a Local Page Link



To create a local page link:

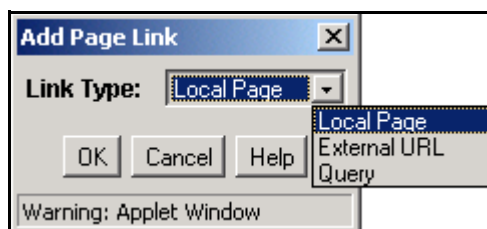
1. Select the page in the [Web Page Hierarchy Pane](#) (page A-9) under which you want to locate the new local page.
2. In the [Page Links Pane](#) (page A-11), click **Add**.  
The Add Page Link screen is displayed.
3. Select Local Page, and click **OK**.
4. Enter information about the new local page into the Edit Local Page Link screen.  
Observe the following field descriptions:

Feature	Description
Link Title field	This text is displayed as the hyperlink.
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.

Feature	Description
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.

- Click **OK**.

## Creating an External URL Link



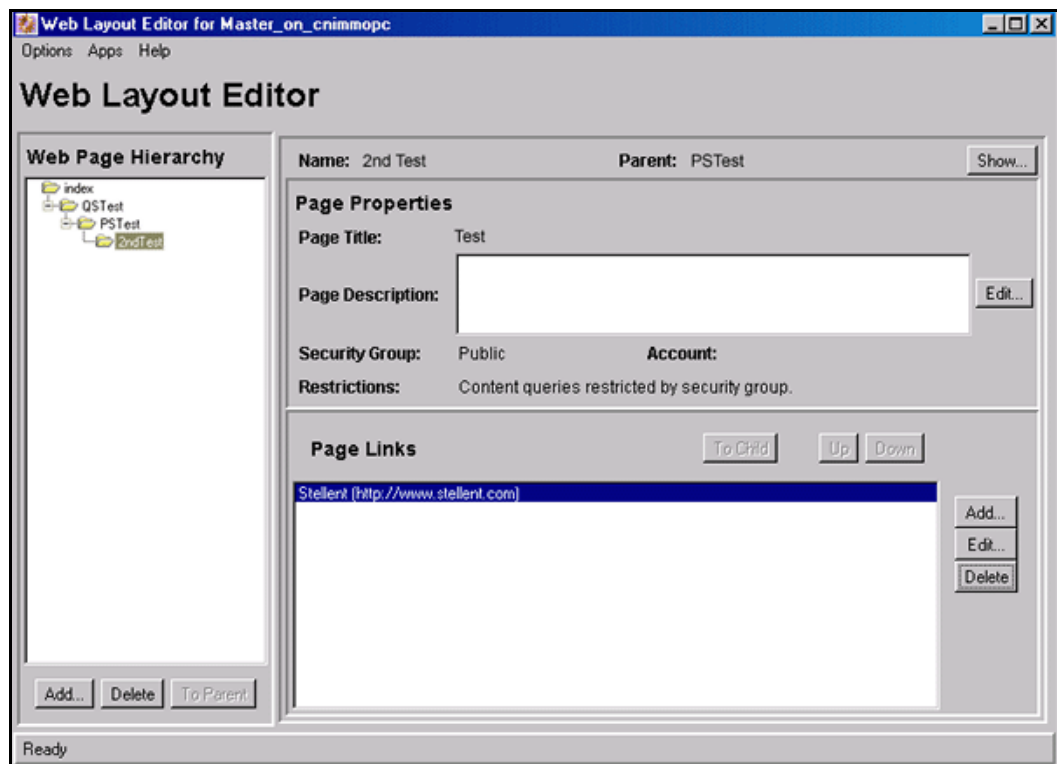
To create an external URL link:

- Select the page in the [Web Page Hierarchy Pane](#) (page A-9) under which you want to locate the new URL.
- In the [Page Links Pane](#) (page A-11), click **Add**.  
The Add Page Link screen is displayed:
- Select External URL, and click **OK**.
- Enter information about the URL into the Edit External URL screen. Observe the following field descriptions:

Feature	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> .

5. Click **OK**.
6. Refresh the browser to display the new page.

## 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.

## WORKING WITH REPORTS

---

This section covers these topics:

### **Concepts**

- ❖ [About Reports](#) (page A-18)

### **Tasks**

- ❖ [Defining an Active Report](#) (page A-19)

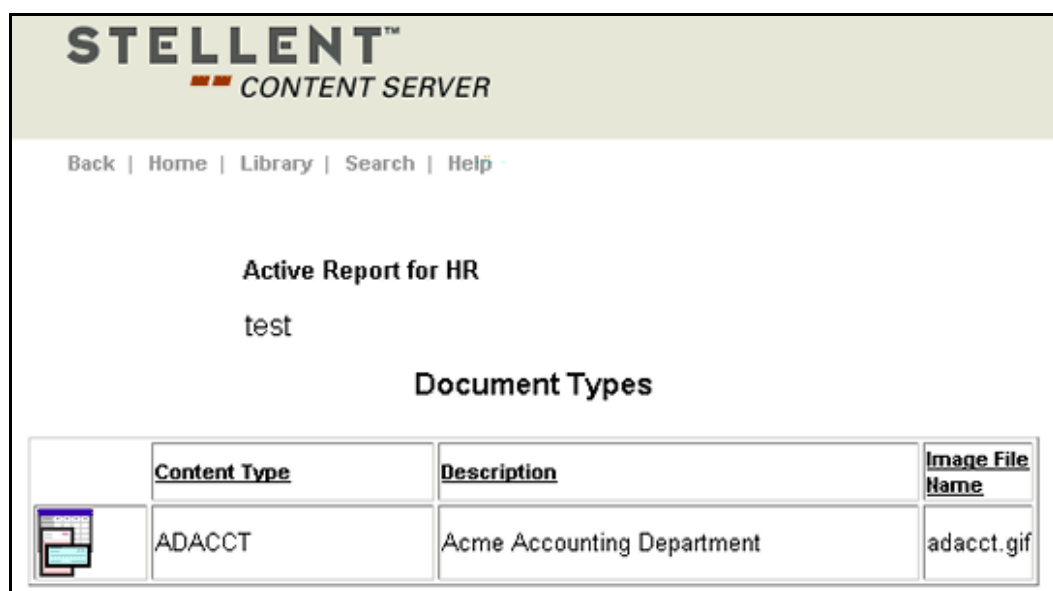
- ❖ [Defining a Historical Report](#) (page A-19)
- ❖ [Editing a Query Expression in an Active Report](#) (page A-19)


## Interface

- ❖ [Edit Active Report Query Screen](#) (page A-20)

## About Reports

The following example shows the result of a report used to list content types:



STELLENT™ CONTENT SERVER			
Back   Home   Library   Search   Help			
Active Report for HR			
test			
Document Types			
	Content Type	Description	Image File Name
	ADACCT	Acme Accounting Department	adacct.gif

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.

## 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 Page Type.
2. In the Active Report Specification pane, click **Edit Report Query**.
3. Define the query by entering information on the [Defining an Active Report](#) (page A-19).
4. Click **OK**.

## Defining a Historical Report

---

To prepare an Archive Historical Report:

1. Select the WebLayout Editor from the Administration page.
2. Add a historical report web page.
3. Click **Create Report Data**.
4. When you create the report data, specify **Archive History** for the data source.
5. Write a query that will return the data that you want to retrieve. For example, specify the Content ID.

## Editing a Query Expression in an Active Report

---

To edit the query expression in an active report:

1. In the [Web Page Hierarchy Pane](#) (page A-9), 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 [Defining an Active Report](#) (page A-19), 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**.



**Note:** If a query is not specified, all values are returned.

## QUERY INTERFACE SCREENS

---

The following screen is used to edit queries.


❖ [Edit Active Report Query Screen](#) (page A-20)

### 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](#) (page A-9), and click **Edit Report Query** in the Active Report Specification pane.

Feature	Description
Data Source list	<p>Select the type of report to create:</p> <ul style="list-style-type: none"> <li>• <b>Archive History</b> reports on which files are exported to specific archives.</li> <li>• <b>Content Types</b> reports on content types and their definitions.</li> <li>• <b>User</b> reports on end users.</li> <li>• <b>Information Fields</b> reports on the extended metadata.</li> <li>• <b>Content History</b> reports when files have been checked in and out, deleted, updated.</li> <li>• <b>Workflow Items</b> reports on the defined workflows.</li> <li>• <b>Workflow History</b> reports on when specific workflows have been enabled and when content items are approved, rejected, or checked into a workflow.</li> </ul>
Report Template list	Provides a list of selectable templates that control how the query links are displayed.
<b>Query Definition pane</b>	
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.

Feature	Description
Query Expression box	Displays each query as a single line when added by the <b>Add</b> button.
Delete button	Deletes a selected query line.
<b>Custom Query Expression pane</b>	
Custom Query Expression check box	<p>Enables display and edit of SQL code generated from the query expression. See <a href="#">Writing Queries</a> (page A-22) for more information.</p> <p> <b>Caution:</b> If you clear the Custom Query Expression check box, the expression reverts to its original definition; all modifications will be lost.</p>
Custom Query Expression box	Used to edit the query expression.

## WRITING QUERIES

---

This section covers these topics:

### **Concepts**

- ❖ [About Writing Queries](#) (page A-23)

### **Tasks**

- ❖ [Writing Directory Queries](#) (page A-23)
- ❖ [Writing Report Queries](#) (page A-23)
- ❖ [Creating a Query Link](#) (page A-24)
- ❖ [Editing the Query Expression in a Query Link](#) (page A-27)
- ❖ [Adding a Query Results Page](#) (page A-28)
- ❖ [Editing a Query Results Page](#) (page A-30)
- ❖ [Deleting a Query Results Page](#) (page A-30)

## 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](#) (page A-23).
- ❖ **Report**—See [Writing Report Queries](#) (page A-23).

## 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).

## 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 *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.

## 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

Operator	Use
>	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.

## Basic SQL Examples

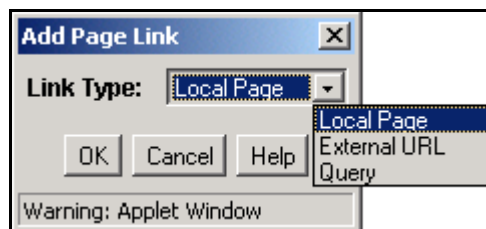
- ❖ Finds all files that have an internal revision ID less than 50000:

```
dID < '50000'
```

- ❖ Finds all files that have a Content ID between 10000 and 50000:

```
dDocName BETWEEN '10000' AND '50000'
```

## Creating a Query Link





To create a query link:

1. In the [Web Page Hierarchy Pane](#) (page A-9), select the page where you want to locate the new query link.
2. In the [Page Links Pane](#) (page A-11), 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 Query Link Definition screen. Observe the following field descriptions:

Feature	Description
<b>Link Properties</b>	
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).
<b>Query Tab</b>	
Field list	Select a metadata field that the query will search.
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 used for almost all fields:</p> <ul style="list-style-type: none"> <li>• <b>Has Substring:</b> Any part of the specified metadata field contains the specified metadata Value.</li> <li>• <b>Matches:</b> The entire text within the specified metadata field contains the exact text specified in metadata Value.</li> <li>• <b>Contains Word:</b> The text within the specified metadata field contains the metadata Value.</li> </ul> <p> The Contains Word option is not available with database search.</p> <ul style="list-style-type: none"> <li>• <b>Begins With:</b> The text within the specified metadata field starts with the metadata Value</li> </ul>
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.

Feature	Description
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.  <b>Caution:</b> 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.
<b>Results Tab</b>	
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.*

Feature	Description
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.
* These fields can be edited directly to add Idoc Script variables and HTML tags.	



**Tech Tip:** 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 *Idoc Script Reference Guide* for more information.

5. Click **OK**.

## Editing the Query Expression in a Query Link

To edit the query expression in a query link:

1. In the [Page Links Pane](#) (page A-11), 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**.



**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**.

## Adding a Query Results Page

The screenshot shows the STELLENT CONTENT SERVER web interface. On the left is a navigation sidebar with links to Home, Library, Search, User Profile, Content Manager, and Administration. The main area displays 'Search Results' for a query, showing 4 results. A table lists the results with columns for Description, Rev., and Info. Annotations point to specific fields in the table.

Description	Rev.	Info
000012 HCSF File	2	
000019 Product Description 3/5/02 2:42 PM	1	
000020 Product Description 3/5/02 2:42 PM	1	
form_std_page IDOC File	2	

Annotations in the image:

- Text 1: Can be Content ID or another text link (points to the Content ID field in the first row).
- Text 2: Description of text1 (points to the description field in the second row).

The 'Edit Result Page' dialog box is shown. It contains fields for Name, Description, Text1, and Text2. A list of fields is available for selection.

Name: Test

Description: Test

Text1: Test<\$dDocTitle\$>

Text2: <\$dDocAuthor\$> <\$dInDate\$>

Field List:

- Content ID
- Title
- Author
- Type
- Security Group
- Account
- Revision
- Release Date
- Expiration Date

Buttons: OK, Cancel, Help

Warning: Applet Window

To add a query results page:



**Note:** This task is available only for administrators, not for subadministrators with WebLayout rights.

1. Select **Options—Query Results Pages**.

The Query Result Pages screen is displayed. The example below shows the relation of the Text fields to HTML links.

2. Click **Add** to display the Add Result Page.

3. Enter information for the new page. Observe the following field descriptions:

Feature	Description
Name field	The name for the Query Results Page. This name can be selected when on the Results Template Page Properties.
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.
* These fields can be edited directly to add Idoc Script variables and HTML tags.	



**Tech Tip:** 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 *Idoc Script Reference Guide* for more information.

4. Click **OK**.

## Editing a Query Results Page

---

To edit a query results page:



**Note:** This task is available only for administrators, not for subadministrators with WebLayout rights.

1. Select **Options—Query Results Pages**, then select the name of the page.
2. Click **Edit**.  
The Edit Results Page is displayed.
3. Make the necessary changes, and click **OK**.

## Deleting a Query Results Page

---

To delete a query results page:



**Note:** This task is available only for administrators, not for subadministrators with WebLayout rights.

1. Select **Options—Query Results Pages**, then select the name of the page.
2. Click **Delete**.
3. When prompted, click **OK** to verify the deletion.

# THIRD PARTY LICENSES

## OVERVIEW

---

This appendix includes a description of the Third Party Licenses for all the third party products included with this product.

- ❖ [Apache Software License](#) (page B-1)
- ❖ [W3C® Software Notice and License](#) (page B-2)
- ❖ [Zlib License](#) (page B-3)
- ❖ [General BSD License](#) (page B-4)
- ❖ [General MIT License](#) (page B-5)
- ❖ [Unicode License](#) (page B-5)
- ❖ [Miscellaneous Attributions](#) (page B-6)

## APACHE SOFTWARE LICENSE

---

```
* Copyright 1999-2004 The Apache Software Foundation.  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*      http://www.apache.org/licenses/LICENSE-2.0  
*
```

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.

## W3C® SOFTWARE NOTICE AND LICENSE

---

- \* Copyright © 1994-2000 World Wide Web Consortium,
- \* (Massachusetts Institute of Technology, Institut National de
- \* Recherche en Informatique et en Automatique, Keio University).
- \* All Rights Reserved. <http://www.w3.org/Consortium/Legal/>
- \*
- \* This W3C work (including software, documents, or other related items) is
- \* being provided by the copyright holders under the following license. By
- \* obtaining, using and/or copying this work, you (the licensee) agree that
- \* you have read, understood, and will comply with the following terms and
- \* conditions:
- \*
- \* Permission to use, copy, modify, and distribute this software and its
- \* documentation, with or without modification, for any purpose and without
- \* fee or royalty is hereby granted, provided that you include the following
- \* on ALL copies of the software and documentation or portions thereof,
- \* including modifications, that you make:
- \*
- \* 1. The full text of this NOTICE in a location viewable to users of the
- \* redistributed or derivative work.
- \*
- \* 2. Any pre-existing intellectual property disclaimers, notices, or terms
- \* and conditions. If none exist, a short notice of the following form
- \* (hypertext is preferred, text is permitted) should be used within the
- \* body of any redistributed or derivative code: "Copyright ©
- \* [\$date-of-software] World Wide Web Consortium, (Massachusetts



```

*      Institute of Technology, Institut National de Recherche en
*      Informatique et en Automatique, Keio University). All Rights
*      Reserved. http://www.w3.org/Consortium/Legal/"
*
*      3. Notice of any changes or modifications to the W3C files, including the
*      date changes were made. (We recommend you provide URIs to the location
*      from which the code is derived.)
*
*      THIS SOFTWARE AND DOCUMENTATION IS PROVIDED "AS IS," AND COPYRIGHT HOLDERS
*      MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT
*      NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR
*      PURPOSE OR THAT THE USE OF THE SOFTWARE OR DOCUMENTATION WILL NOT INFRINGE
*      ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.
*
*      COPYRIGHT HOLDERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR
*      CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THE SOFTWARE OR
*      DOCUMENTATION.
*
*      The name and trademarks of copyright holders may NOT be used in advertising
*      or publicity pertaining to the software without specific, written prior
*      permission. Title to copyright in this software and any associated
*      documentation will at all times remain with copyright holders.
*

```

## ZLIB LICENSE

---

```

* zlib.h -- interface of the 'zlib' general purpose compression library
*      version 1.2.3, July 18th, 2005

```

```

Copyright (C) 1995-2005 Jean-loup Gailly and Mark Adler

```

```

This software is provided 'as-is', without any express or implied
warranty. In no event will the authors be held liable for any damages
arising from the use of this software.

```

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly [jloup@gzip.org](mailto:jloup@gzip.org)

Mark Adler [madler@alumni.caltech.edu](mailto:madler@alumni.caltech.edu)

# GENERAL BSD LICENSE

---

Copyright (c) 1998, Regents of the University of California

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

"Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

"Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

"Neither the name of the <ORGANIZATION> nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR

PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## GENERAL MIT LICENSE

---

Copyright (c) 1998, Regents of the Massachusetts Institute of Technology

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## UNICODE LICENSE

---

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright © 1991-2006 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

Unicode and the Unicode logo are trademarks of Unicode, Inc., and may be registered in some jurisdictions. All other trademarks and registered trademarks mentioned herein are the property of their respective owners

## MISCELLANEOUS ATTRIBUTIONS

---

Adobe, Acrobat, and the Acrobat Logo are registered trademarks of Adobe Systems Incorporated.

FAST Instream is a trademark of Fast Search and Transfer ASA.

HP-UX is a registered trademark of Hewlett-Packard Company.

IBM, Informix, and DB2 are registered trademarks of IBM Corporation.

Jaws PDF Library is a registered trademark of Global Graphics Software Ltd.

Kofax is a registered trademark, and Ascent and Ascent Capture are trademarks of Kofax Image Products.

Linux is a registered trademark of Linus Torvalds.

Mac is a registered trademark, and Safari is a trademark of Apple Computer, Inc.

Microsoft, Windows, and Internet Explorer are registered trademarks of Microsoft Corporation.

MrSID is property of LizardTech, Inc. It is protected by U.S. Patent No. 5,710,835. Foreign Patents Pending.

Oracle is a registered trademark of Oracle Corporation.

Portions Copyright © 1994-1997 LEAD Technologies, Inc. All rights reserved.

Portions Copyright © 1990-1998 Handmade Software, Inc. All rights reserved.

Portions Copyright © 1988, 1997 Aladdin Enterprises. All rights reserved.

Portions Copyright © 1997 Soft Horizons. All rights reserved.

Portions Copyright © 1995-1999 LizardTech, Inc. All rights reserved.

Red Hat is a registered trademark of Red Hat, Inc.

Sun is a registered trademark, and Sun ONE, Solaris, iPlanet and Java are trademarks of Sun Microsystems, Inc.

Sybase is a registered trademark of Sybase, Inc.

UNIX is a registered trademark of The Open Group.

Verity is a registered trademark of Autonomy Corporation plc





## #

- console switch
- Batch Loader, 7-44, 7-44

## A

- about
  - Admin Server, 3-1
  - system properties, 2-2
- accounts
  - show only known, 2-14
- actions, Batch Loader, 7-3
- Active Directory Security (ADSI), 2-16
- Active Reports, A-18
  - defining, A-19
  - editing query expression, A-19
- Add an Existing Content Server page, 3-8
- Add BatchBuilder Mapping Field screen, 7-33
- Add BatchBuilder Mapping screen, 7-31
- Add Content Server Configuration page, 3-11
- Add Provider page, 6-16
- adding
  - content server to Admin Server, 3-3
  - database providers, 6-4
  - incoming providers, 6-5
  - LDAP providers, 6-7
  - outgoing providers, 6-3
  - preview providers, 6-6
  - provider
    - database, 6-11
    - incoming, 6-11
    - outgoing, 6-9
    - preview, 6-11
  - providers, 6-3
  - query results pages, A-28, A-40
  - redirect in Batch Loader, 7-44
  - web pages, A-12
- Additional Configuration Variables field, 2-10
- Admin Server, 2-2
  - about, 3-1
  - adding a content server, 3-3
  - Additional Configuration Variables field, 2-10
  - Content Security Configuration page, 2-13
  - editing content server, 3-4
  - General Configuration page, 2-6
  - Home page, 3-2
  - Internet Configuration page, 2-15
  - Output page, 3-7
  - removing a content server, 3-4
  - using, 2-3
- administration
  - launching applications, 1-7
- administration applications
  - running as applets, 1-7
- Administration page, 1-7
- administrator documentation, 1-3
- Administrator Mail Address, 2-16
- administrators, 1-5
  - documentation for --, 1-3
- ADSI, 2-16
  - enabling, 2-16
- ALL
  - supported search operator/keyword, 4-30
- Allow author to delete revision, 2-14
- Allow get copy for user with read privilege, 2-14
- Allow only original contributor to check out, 2-14
- Allow override format on check in, 2-7
- AllowMultiple
  - column description, 4-36
- ALM, 5-3
- AND
  - supported search operator/keyword, 4-30
- ANY
  - supported search operator/keyword, 4-30
- Apache Loadable Module, 5-3
- Apache web server, 5-3

- AppletChunkSize, 2-12
- AppletChunkThreshold, 2-12
- applets, running applications, 1-7
- applications
  - launching administration, 1-7
  - running as applets, 1-7
  - running in stand-alone mode, 1-8
- architecture
  - web server filter, 5-4
- Archive Historical Report, A-19
- Archiver, 6-4, 6-5
- author, allowing delete, 2-14
- AuthorDelete, 2-14
- automatic Content ID, 2-8
- automatic update cycle, 4-5
- AutoNumberPrefix, 2-9

## B

- batch load files
  - case sensitivity, 7-2
  - creating from BatchBuilder screen, 7-24
  - creating from command line, 7-26
  - file records, 7-2
  - preparing, 7-20, 7-20
  - samples, 7-19
- Batch Loader, 1-6, 7-1, 7-1
  - console switch, 7-44
  - actions, 7-3
  - adding a redirect, 7-44
  - command line example, 7-44
  - delete action, 7-7
  - file records, 7-2
  - insert action, 7-3
  - mapping file, 7-21
  - optional parameters, 7-14
  - preparing batch load files, 7-20
  - running, 7-35, 7-36
  - UNIX example, 7-38
  - update action, 7-8
  - Win32 example, 7-38
- Batch Loader screen, 7-34
  - batch loading, 7-36
- batch loading, 7-1, 7-1
  - correcting errors, 7-45
  - custom metadata fields, 7-19
  - from Batch Loader screen, 7-36
  - from command line, 7-37
- BatchBuilder, 7-20
  - creating mapping file, 7-25
  - UNIX example, 7-27
  - Win32 example, 7-27
- BatchBuilder Mapping List screen, 7-30

- BatchBuilder screen, 7-28
  - creating batch load file, 7-24
- BETWEEN
  - supported search operator/keyword, 4-30
- Browser Executable Path, 2-26
- building
  - web site, A-1

## C

- checkout
  - only original contributor, 2-14
- ChunkedRequestTrace, 2-12
- Chunking function, 2-11
- CLASSPATH, 2-27
- clearing
  - web filter log, 5-9
- clustered Content Server, 6-8
- Collaboration Server, 6-9
- collection rebuild cycle, 4-6
- collections
  - rebuilding search, 4-3
- Column
  - column description, 4-34
- command line
  - Batch Loader, 7-44
  - Batch Loader example, 7-44
  - batch loading, 7-37
  - creating batch load file, 7-26
- communication protocols, 5-4
- config.cfg file, 2-10
- configuration
  - revision labels, 2-11
  - setting web filter options, 5-9
  - web filter, 5-2
- configuration files, 2-2
- configuration information
  - understanding, 2-3
- Configure Automatic Update Cycle screen, 4-7
- Configure Collection Rebuild Cycle screen, 4-10
- Configure Web Server Filter page, 5-9
- configuring
  - content security, 2-12
  - content server, 2-20
  - database, 2-17
  - general options, 2-4
  - IIS for external security, 5-9
  - Internet information, 2-14
  - paths, 2-25
  - search collection rebuild, 4-4
  - search index update, 4-4
  - System Properties, 2-1
  - web server filter, 5-13, 5-15



- connection string, JDBC, 2-19
- consumers, 1-5
- Content Categorizer, 6-6
- Content ID
  - generating automatically, 2-8
- Content Publisher, 6-6
- content security options, System Properties, 2-12
- Content Server
  - clustered, 6-8
  - purpose, 1-4
  - running, 1-7
  - running on Windows, 1-7
- content server
  - adding to Admin Server, 3-3
  - clustered, 6-8
  - configuring, 2-20
  - editing on Admin Server, 3-4
  - removing from Admin Server, 3-4
  - running, 1-7
  - running on Windows, 1-7
  - viewing output, 3-4
- Content Server hints
  - type of query hint, 4-28
- Content Server Output page, 3-14
- Content Tracker, 6-8
- contributors, 1-5
- conventions, 1-4
- correcting batch load errors, 7-45
- creating
  - batch load files
    - from BatchBuilder screen, 7-24
    - from command line, 7-26
  - external URL links, A-15
  - Local page links, A-14
  - mapping file, 7-25
  - providers
    - database, 6-11
    - incoming, 6-11
    - outgoing, 6-9
    - preview, 6-11
  - Query links, A-24, A-36
  - web site, A-3
- criteria, displaying, A-3
- custom metadata fields, batch loading, 7-19, 7-19

## D

- database, 2-19
  - external, 6-5
- database options, System Properties, 2-17
- database provider
  - adding, 6-4, 6-11
- Database Provider page, 6-20

- DatabasePreserveCase, 2-19
- debug level, Indexer, 4-9, 4-11
- default capacity algorithm
  - characteristic of hint cache, 4-39
- defining
  - Active Report, A-19
  - revision labels, 2-9, 2-9
  - web site structure, A-3
- delete
  - allowing authors permission, 2-14
- delete action, 7-7
  - example, 7-8
  - requirements, 7-8
- deleting
  - providers, 6-12
  - Query Results pages, A-30, A-42
- directory queries
  - writing, A-23, A-32
- Disabled
  - column description, 4-36
- DisableHttpUploadChunking, 2-12
- disabling
  - ADSI, 2-16
  - download applet, 2-8, 2-8
  - Dynamic Converter, 2-8
  - Enterprise Search, 2-8
  - full-text indexing, 4-4
  - JSP support, 2-9, 2-23
  - keyword highlighting, 2-8
  - NTLM, 2-16
- displaying criteria, A-3
- documentation
  - documentation for system administrators, 1-3
- download applet
  - enabling, 2-8
- DownloadApplet, 2-8
- driver, JDBC, 2-19
- Dynamic Converter
  - enabling and disabling, 2-8

## E

- e-mail address, system administrator, 2-16
- e-mail port, 2-16
- Edit Active Report Query screen, A-19
- Edit BatchBuilder Mapping Field screen, 7-33
- Edit BatchBuilder Mapping screen, 7-32
- Edit Content Server Configuration page, 3-11
- Edit or Remove Content Server page, 3-10
- Edit Provider page, 6-16
- editing
  - Active Report query expressions, A-19
  - content server on Admin Server, 3-4

- provider information, 6-12
- Query link query expressions, A-27, A-40
- Query Results pages, A-30, A-42
- web page properties, A-13
- web page structure, A-16
- EnableDocumentHighlight, 2-8
- enabling
  - ADSI, 2-16
  - download applet, 2-8
  - Dynamic Converter, 2-8
  - Enterprise Search, 2-8
  - JSP support, 2-9, 2-23
  - keyword highlighting, 2-8
  - NTLM, 2-16
  - upload applet, 2-8
- Enterprise Search, 6-4
  - enabling and disabling, 2-8
- EnterpriseSearchAsDefault, 2-8
- equal symbol
  - supported search operator/keyword, 4-30
- error messages
  - content server, 3-7
- errors
  - correcting batch load, 7-45
- examples
  - batch load file record, 7-2
  - batch load files, 7-19
  - Batch Loader, 7-44
    - delete action, 7-8
    - insert action, 7-5
    - on UNIX, 7-38
    - on Win32, 7-38
    - update action, 7-12, 7-13
  - BatchBuilder
    - on UNIX, 7-27
    - on Win32, 7-27
  - revision, 2-10
  - SQL script, A-24, A-35
  - Tamino query, A-34
- ExclusiveCheckout, 2-14
- EXISTS
  - supported search operator/keyword, 4-31
- external collections, 7-21
  - read-only, 7-24
- external database, 6-5
- external URL, A-5
  - creating link, A-15

## F

- fields
  - custom metadata, 7-19
- file records, 7-2

- example, 7-2
- filter
  - clearing the log, 5-9
  - plug-ins, 5-3
  - setting options, 5-9
  - viewing the log, 5-9
  - viewing version, 5-9
  - web server, 5-3
- formats
  - mapping file, 7-21
- full-text indexing
  - disabling, 4-4
- full-text search
  - Tamino operators, A-33

## G

- general options, System Properties, 2-4
- generating
  - Content IDs, 2-8
- get copy permission, 2-14
- GetCopyAccess, 2-14
- greater than symbol
  - supported search operator/keyword, 4-30, 4-30
- group by
  - supported sort construct, 4-31

## H

- hint cache
  - default capacity algorithm, 4-39
  - managing entries, 4-38
  - origin of keys, 4-39
  - overview, 4-37
  - persistence, 4-40
  - reusing entries, 4-37
- Hint Cache Updater page
  - accessing, 4-44
  - checking hint cache for hints
    - data source
      - checking hint cache for hints, 4-44
    - modifying data source or query entry
      - data source
        - modifying entry to hint cache, 4-45
  - overview, 4-56
  - removing data source or query entry
    - data source
      - removing entry to hint cache, 4-47
- Hint Rule Editor
  - overview
    - Hint Rules Configuration page

- Hint Rule Editor, 4-50
- hint rules
  - adding and enabling, 4-40
- Hint Rules Configuration page
  - accessing, 4-40
  - adding and enabling new hint rules, 4-40
  - disabling hint rules
    - hint rules
      - disabling, 4-41
    - editing hint rules
      - hint rules
        - editing, 4-41
    - enabling hint rules
      - hint rules
        - enabling, 4-42
    - overview, 4-49
    - removing hint rules
      - hint rules
        - removing, 4-42
- hint rules table
  - AllowMultiple - column description, 4-36
  - Column - column description, 4-34
  - Disabled - column description, 4-36
  - explanations of rules, 4-32
  - Index - column description, 4-35
  - Key - column description, 4-33
  - on Hint Rules Configuration page, 4-49
  - Operators - column description, 4-34
  - Order - column description, 4-35
  - overview, 4-31
  - Table - column description, 4-34
  - Values - column description, 4-35
- Historical Reports, A-18
- Hostname Filter, 2-23
- HTML Preview, 6-3, 6-6, 6-6
- HTTP provider
  - chunking, 2-11
- Http Relative Web Root, 2-16
- HTTP Server Address, 2-16
- HttpRelativeWebRoot, 2-16
- HttpServerAddress, 2-16

## I

- IdcAuthPlugins table, 5-3
- IIS web server, 5-2, 5-3
  - configuring, 5-9
- IN
  - supported search operator/keyword, 4-31
- Incoming Provider page, 6-22
- incoming provider, adding, 6-5, 6-11
- Index

- column description, 4-35
- index
  - updating, 4-3
- Indexer
  - automatic update cycle, 4-5
  - collection rebuild cycle, 4-6
  - debug level, 4-9, 4-11
  - state, 4-6
  - status, 4-6
- indexing, 4-1
  - disabling full-text, 4-4
- Informix, 2-19
- inner join
  - supported sort construct, 4-31
- insert action, 7-3
  - example, 7-5
  - requirements, 7-4
- Instance Description, 2-22
- Instance Menu Label, 2-22
- InstanceDescription, 2-22
- InstanceMenuLabel, 2-22
- Internet Information Services
  - See IIS web server
- Internet options
  - System Properties, 2-14
- IP Address Filter, 2-23
- iPlanet/Sun ONE web server, 5-2, 5-3
- IS
  - supported search operator/keyword, 4-31
- ISAPI filter, 5-2, 5-3
- IsAutoNumber, 2-8
- IsDynamicConverterEnabled, 2-8
- IsJdbc, 2-18
- IsJspServerEnabled, 2-9, 2-23
- IsOverrideFormat, 2-7

## J

- Java applets, 1-8
- Java Classpath, 2-27
- JDBC, 2-17
- JDBC Connection String, 2-19
- JDBC Driver Name, 2-19
- JDBC User Name, 2-19
- JDBC User Password, 2-19
- JdbcConnectionString, 2-19
- JdbcDriver, 2-19
- JdbcPassword, 2-19
- JdbcUser, 2-19
- JSP
  - security groups enabled for, 2-9, 2-24
- JSP support, enabling and disabling, 2-9, 2-23
- JspEnabledGroups, 2-9, 2-24

## K

### Key

column description, 4-33

### keys

origin of - characteristic of hint cache, 4-39

keyword highlighting, 2-8

known accounts, 2-14

## L

label ranges, revision, 2-10

label sequence, revision, 2-10

launching administration applications, 1-7

Ldap Provider page, 6-25

LDAP provider, adding, 6-7

less than or equal to symbol

supported search operator/keyword, 4-30

less than symbol

supported search operator/keyword, 4-30

Library, A-2

Lightly Managed Content component, 7-21

LIKE

supported search operator/keyword, 4-31

Local page, A-5

creating link, A-14

locale, system, 2-21

locales, 2-1

Localization tab, System Properties, 2-1

logs

viewing web filter, 5-9

## M

Mail Server, 2-16

MailServer, 2-16

major revision label, 2-9

major revision label sequence, 2-10

MajorRevSeq, 2-9

managing hint cache entries

characteristic of hint cache, 4-38

mapping files

Batch Loader, 7-21

creating, 7-25

formats, 7-21

values, 7-22

metadata fields

batch loading custom, 7-19, 7-19

Microsoft network security, 2-16

minor revision label, 2-9

minor revision label sequence, 2-10

MinorRevSeq, 2-9

MultiUpload, 2-8

## N

normalization

discarding WHERE clause conditions, 4-25

finding range queries, 4-25

qualify WHERE clause conditions, 4-24

reformatting WHERE clause conditions, 4-25

stage 3 of optimization process, 4-24

NOT

supported search operator/keyword, 4-31

not equal symbol

supported search operator/keyword, 4-30

NSAPI filter, 5-2, 5-3

NT Domain Security (NTLM), 2-16

NTLM, 2-16

enabling, 2-16

NtlmSecurityEnabled, 2-16

NULL

supported search operator/keyword, 4-31

## O

Operators

column description, 4-34

operators, Tamino full-text search, A-33

optimizing queries

by reformatting, 4-26

example - adding multiple hints, 4-27

example - adding single hint, 4-26

optional parameters, Batch Loader, 7-14

options

System Properties

content server, 2-20

database, 2-17

general, 2-4

Internet, 2-14

OR

supported search operator/keyword, 4-31

Oracle, 2-19

Oracle hints

type of query hint, 4-28

Oracle Portlets, 6-8

Oracle Query Optimizer

overview, 4-22

Order

column description, 4-35

order by

supported sort construct, 4-31

outer join

supported sort construct, 4-31

- outgoing provider
  - adding, 6-3, 6-9
- Outgoing Provider page, 6-17
- output, viewing content server, 3-4
- overview
  - security, 6-1

## P

- parameters, optional Batch Loader, 7-14
- parsing
  - stage 2 of optimization process, 4-24
- passthru, 4-20
- password
  - JDBC, 2-19
- path options, System Properties, 2-25
- PDC
  - See primary domain controller
- persistence
  - characteristic of hint cache, 4-40
- planning
  - web site, A-1, A-2
- plug-ins
  - architecture, 5-4
  - filter, 5-3
- portal page
  - updating, A-8
  - working with, A-6
- portlets, 6-8
- predefined accounts
  - limiting display to, 2-14
- preparing
  - batch load file, 7-20, 7-20
- preserving case, 2-19
- Preview Provider page, 6-23
- preview provider, adding, 6-6, 6-11
- primary domain controller, 5-2
- properties, editing web page, A-13
- properties, system, 2-1
- Provider Information page, 6-15
- providers, 6-2
  - adding, 6-3
  - adding database, 6-4, 6-11
  - adding incoming, 6-5, 6-11
  - adding LDAP, 6-7
  - adding outgoing, 6-3, 6-9
  - adding preview, 6-6, 6-11
  - deleting, 6-12
  - editing information, 6-12
  - SystemDatabase, 6-2
  - SystemServerSocket, 6-2
  - understanding, 6-1
- Providers page, 6-13

- purpose, Content Server, 1-4

## Q

- queries, A-5
  - Tamino examples, A-34
  - writing directory, A-23, A-32
  - writing report, A-23, A-34
  - writing Tamino, A-31, A-31
- query
  - checking hint cache for hints, 4-44
  - converting, 4-43
  - modifying, 4-44
  - modifying entry to hint cache, 4-45
  - removing entry to hint cache, 4-47
- query analysis
  - stage 1 of optimization process, 4-24
- Query Converter page
  - accessing, 4-42
  - converting data source or query
    - data source
      - converting, 4-43
    - modifying data source or query
      - data source
        - modifying, 4-44
  - overview, 4-54
- query expression
  - editing Active Reports, A-19
  - editing Query link, A-27, A-40
- query hints
  - Content Server hints, 4-28
  - Oracle hints, 4-28
  - overview, 4-27
  - syntax, 4-29
- Query link
  - creating, A-24, A-36
  - editing query expression, A-27, A-40
- query optimization process
  - reformatting queries to optimize searches, 4-26
  - stage 1 - query analysis, 4-24
  - stage 2 - parsing, 4-24
  - stage 3 - normalization, 4-24
  - stage 4 - select hint, 4-25
  - stage 5 - reformat query, 4-26
- query results page
  - adding, A-28, A-40
  - deleting, A-30, A-42
  - editing, A-30, A-42

## R

- range queries

- finding, 4-25
- rebuild
  - configuring, 4-4
- rebuilding
  - search collection, 4-3
- records, file, 7-2
- redirect, adding in Batch Loader, 7-44
- reformat query
  - stage 5 of optimization process, 4-26
- reformatting queries
  - adding multiple hints, 4-27
  - adding single hint, 4-26
  - to optimize searches, 4-26
- relative web root, 2-16
- removing
  - content server from Admin Server, 3-4
- report queries
  - writing, A-23, A-34
- reports, A-6, A-17, A-18
- reports, Archive Historical, A-19
- Repository Manager, 1-6
  - Indexer tab, 4-5
- requirements
  - Batch Loader delete action, 7-8
  - Batch Loader insert action, 7-4
  - Batch Loader update action, 7-10
- reusing hint cache entries
  - characteristic of hint cache, 4-37
- revision labels
  - defining, 2-9, 2-9
- revisions
  - examples, 2-10
  - label configuration settings, 2-11
  - label ranges, 2-10
  - label sequence, 2-10
- running
  - applications as applets, 1-7
  - applications in stand-alone mode, 1-8
  - Batch Loader, 7-35, 7-36
  - Content Server, 1-7
  - Content Server on Windows, 1-7

## S

- samples
  - batch load files, 7-19
- script
  - SQL, A-23, A-35
  - SQL example, A-24, A-35
- search collections
  - configuring rebuild, 4-4
  - rebuilding, 4-3
- search index, 4-2

- configuring update, 4-4
- updating, 4-3
- search operators, Tamino full-text, A-33
- secure sockets layer (SSL), 2-16
- security
  - configuring, 2-12
  - enabling Microsoft, 2-16
  - overview, 6-1
  - setting up users, 6-1
- security groups
  - JSP enabled, 2-9, 2-24
- select hint
  - hint cache, 4-37
  - hint rules table, 4-31
  - stage 4 of optimization process, 4-25
- sequence, revision label, 2-10
- services
  - UNIX, 1-9
- setting
  - web filter configuration options, 5-9
- setting up
  - users, 6-1
- settings, revision label, 2-11
- Shared Directory Path, 2-27
- SharedDir, 2-27
- Show only known accounts, 2-14
- ShowOnlyKnownAccounts, 2-14
- site structure, defining, A-3
- SMTP Port, 2-16
- SmtpPort, 2-16
- SocketHostAddressSecurityFilter, 2-23
- SocketHostNameSecurityFilter, 2-23
- sort constructs
  - group by, 4-31
  - inner join, 4-31
  - order by, 4-31
  - outer join, 4-31
  - supported, 4-31
- Specific Instance page, 3-13
- SQL
  - script example, A-24, A-35
- SQL script, A-23, A-35
- SSL (Secure Sockets Layer), 2-16
- stand-alone mode, running applications, 1-8
- starting
  - Content Server, 1-7
  - Content Server on Windows, 1-7
- state
  - Indexer, 4-6
- status
  - Indexer, 4-6
- subadministrators, 1-5
- substrings, Tamino, A-32
- SysAdminAddress, 2-16

- system administrator
  - e-mail address, 2-16
- system administrators
  - documentation for --, 1-3
- System Locale, 2-21
- System Properties, 1-6, 2-1, 2-2
  - content security, 2-12
  - Content Security tab, 2-13
  - content server, 2-20
  - database, 2-17
  - Database tab, 2-18
  - general options, 2-4
  - Internet options, 2-14
  - Internet tab, 2-15
  - Localization tab, 2-1
  - Options tab, 2-5
  - Paths tab, 2-26
  - Server tab, 2-21
  - understanding configuration information, 2-3
- system properties
  - about, 2-2
- System Properties application, 2-3
- System Timezone, 2-22
- SystemDatabase provider, 6-2
- SystemLocale, 2-21
- SystemServerSocket provider, 6-2
- SystemTimeZone, 2-22

## T

- Table
  - column description, 4-34
- Tamino
  - full-text search operators, A-33
  - query examples, A-34
  - substrings, A-32
  - wildcards, A-32
  - writing queries, A-31, A-31
- tasks
  - creating web site, A-3
  - Indexer, 4-2
- timezone, system, 2-22
- troubleshooting
  - content server, 3-7

## U

- understanding
  - configuration information, 2-3
  - providers, 6-1
- UNIX
  - Batch Loader example, 7-38

- BatchBuilder example, 7-27
- services, 1-9
- update
  - configuring search index, 4-4
- update action, 7-8
  - example, 7-12, 7-13
  - requirements, 7-10
- Update Portal Page screen, A-7
- updating
  - portal page, A-8
  - search index, 4-3
- upload applet
  - chunking, 2-11
  - enabling, 2-8
- URL
  - creating external link, A-15
  - external, A-5
- Use Java Database Connectivity, 2-18
- Use Microsoft Security, 2-16
- Use Secure Sockets Layer, 2-16
- UseAdsi, 2-16
- UseNtlm, 2-16
- user name, JDBC, 2-19
- users, 1-5
  - setting up, 6-1
- UseSSL, 2-16
- using
  - Admin Server, 2-3
  - System Properties application, 2-3

## V

- Values
  - column description, 4-35
- values
  - Batch Loader mapping file, 7-22
- version
  - viewing web filter, 5-9
- viewing
  - web filter log, 5-9
  - web filter version, 5-9
- viewing content server output, 3-4

## W

- web filter
  - clearing the log, 5-9
  - configuration, 5-2
  - setting configuration options, 5-9
  - viewing the log, 5-9
  - viewing version, 5-9
- Web Layout Editor, A-1, A-8

## Index

- adding
  - query results page, A-28, A-40
- adding web pages, A-12
- creating
  - external URL link, A-15
  - Local page link, A-14
  - Query link, A-24, A-36
- defining
  - Active Reports, A-19
  - site structure, A-3
- deleting
  - query results page, A-30, A-42
- displaying criteria, A-3
- editing
  - Active Report query expression, A-19
  - Query link query expression, A-27, A-40
  - query results page, A-30, A-42
  - web page properties, A-13
  - web page structure, A-16
- Page Hierarchy pane, A-9
- Page Links pane, A-11
- Page Properties pane, A-10
- planning web site, A-1
- queries, A-5
- reports, A-6
- tasks, A-3
- working with reports, A-17
- working with web pages, A-4
- writing
  - report queries, A-23, A-34
  - Tamino queries, A-31
- web pages, A-4
  - adding, A-12
  - editing properties, A-13
  - editing structure, A-16
  - working with, A-4
- web server, 5-2
  - name, 2-16
  - relative web root, 2-16
- web server filter, 5-3
  - architecture, 5-4
  - configuring, 5-13, 5-15
- web site
  - building, A-1
- web site, planning, A-1, A-2
- webBrowserPath, 2-26
- WebDAV, 6-5
- WHERE clause conditions
  - discarding, 4-25
  - qualifying, 4-24
  - reformatting, 4-25
- wildcards, Tamino, A-32
- Win32
  - Batch Loader example, 7-38
  - BatchBuilder example, 7-27
- Windows, 1-8
  - running Content Server, 1-7
- working with
  - batches of files, 7-1
  - portal page, A-6
  - reports, A-17
  - web pages, A-4
- writing
  - directory queries, A-23, A-32
  - report queries, A-23, A-34
  - Tamino queries, A-31, A-31